# WATER MANAGEMENT PLAN

## REPORT TO THE UNITED STATES BUREAU OF RECLAMATION ON CCWD's WATER CONSERVATION PROGRAM AND ACTIVITIES

**FINAL**

**MARCH 2012**

CONTRA COSTA WATER DISTRICT

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# Water Management Plan

## REPORT TO THE UNITED STATES BUREAU OF RECLAMATION ON CCWD's WATER CONSERVATION PROGRAM AND ACTIVITIES

**Board of Directors**

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DNA = Does Not Apply

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# Executive Summary

This Water Management Plan (Plan) was prepared according to the United States Bureau of Reclamation's Mid-Pacific Region 2011 Standard Criteria. The Plan must be updated every five years and submitted to the U.S. Bureau of Reclamation (Reclamation) in accordance with Contra Costa Water District's (CCWD or District) Long-Term Renewal Contract for water service from the Central Valley Project (CVP). Information on CCWD's water supply sources and water use is provided in this Plan. This Plan also provides information on CCWD's customer base, water system facilities, and the status of CCWD's water conservation programs.

## Background

The Reclamation Reform Act of 1982 expanded Reclamation's responsibilities from building and managing waterworks to also ensuring federal water is put to reasonable and beneficial use. Section 210 of the Reclamation Reform Act (RRA) requires CVP contractors to prepare and submit Water Management Plans with definite goals, appropriate water conservation measures, and timetables every five years. The Central Valley Project Improvement Act of 1992 (CVPIA) mandated Reclamation develop criteria for assessing the adequacy of these plans. The CVPIA further requires contractors to have adequate plans on file in order to obtain certain benefits or at such time as they renew their contracts.

## Service Area Description

The Contra Costa County Water District was approved by the voters in 1936 as the legal entity to contract, purchase, and distribute water provided by Reclamation through the Contra Costa Canal. In 1981, "County" was dropped from the name, leaving Contra Costa Water District. The 48-mile Contra Costa Canal conveys water from the Sacramento-San Joaquin Delta (Delta), through Rock Slough, Old River and Middle River, to eastern and central Contra Costa County (County). CCWD's service area encompasses most of central and northeastern Contra Costa County, a total area of more than 140,000 acres (including the Los Vaqueros watershed area of approximately 19,100 acres). Water is provided to a combination of municipal, residential, commercial, industrial, landscape irrigation, and agricultural customers. Major municipal customers include the Diablo Water District (Oakley) and the Cities of Antioch, Pittsburg, Golden State Water Company (Bay Point) and Martinez, each of which distribute water to their retail customers. Treated water is distributed to individual customers living in the following communities in the Treated Water Service Area: Clayton, Clyde, Concord, Pacheco, Port Costa, and parts of Martinez, Pleasant Hill, and Walnut Creek. In addition, CCWD delivers water to the Diablo Water District, City of Brentwood, Golden State Water Company (Bay Point) and the City of Antioch. Antioch, Pittsburg and Martinez operate their own water treatment plants.

For the first 25 years of its existence, CCWD's main responsibility was the purchase and distribution of untreated water through the Contra Costa Canal. The cities and other water utilities within CCWD were responsible for treating water used by their customers. However, in the late 1950s, many citizens and public officials became concerned about the quality and cost of water in the central County area. To solve this problem, CCWD purchased the California Water

Service Company's Concord-area treatment, pumping, storage, and distribution facilities. In 1968, CCWD replaced the old treatment facilities with the construction of its own Ralph D. Bollman Water Treatment Plant in Concord. In 1992, CCWD completed the Randall-Bold Water Treatment Plant in Oakley that is jointly owned with the Diablo Water District (DWD). The Randall-Bold plant provides treated water to DWD, and by contract, to the Cities of Brentwood and Antioch and the Golden State Water Company (Bay Point). Additionally, the Multi-Purpose Pipeline, constructed in 2003, allows CCWD to serve new customers in the central County Treated Water Service Area (TWSA) from the Randall-Bold plant. Combined, the Bollman and Randall-Bold water treatment plants provide treated water to approximately 200,000 people in the central County area. CCWD's service area also includes a large industrial base that includes oil refineries, steel mills, and chemical manufacturing facilities. Large industrial water use accounts for approximately one-third of total water use within CCWD.

In 2004, CCWD entered into an agreement to treat water for a major new customer, the City of Brentwood. Under the agreement, CCWD constructed and is operating a 16.5 million gallons per day (mgd) treatment plant adjacent to the Randall-Bold Water Treatment Plant. The plant will ultimately be expanded to 30 mgd to meet future needs of the City of Brentwood.

**Contra Costa Water District Mission and Goals**

CCWD's mission is to strategically provide a reliable supply of high quality water at the lowest cost possible, in an environmentally responsible manner. To fulfill that mission, CCWD's Board of Directors (Board) established the following CCWD goals:

1. Ensure that the District delivers high quality and reliable water supplies for current and future needs.
2. Provide excellent customer service and high levels of customer satisfaction.
3. Plan, design, and construct high quality facilities consistent with District needs and industry standards.
4. Effectively manage the District's financial resources in conformance with Board policies.
5. Ensure that all District activities surpass all applicable laws and regulations.
6. Operate, maintain, and protect District facilities in a safe and cost-effective manner.
7. Provide leadership in water affairs.
8. Actively enhance effective community relations and public information.
9. Create and maintain a work environment that fosters teamwork and individual excellence.
10. Manage and maintain Reclamation and District natural and recreation resources, and protect public safety and water quality.

**Water Supply Sources**

CCWD is almost entirely dependent on the Sacramento-San Joaquin Delta for its water supply; with Reclamation's CVP as the primary water source. CVP water includes unregulated and regulated flows from storage releases from Shasta, Folsom, and Clair Engle reservoirs into the Sacramento River. Other sources include the San Joaquin River, Mallard Slough (on the San Joaquin River), recycled water, a minor amount of local well water, and water transfers.

Central Valley Project Supply

CCWD's long-term CVP contract was renewed in May 2005 and has a term of 40 years (contract No. 175r-3401a-LTR1). The contract with Reclamation provides for a maximum delivery of 195,000 acre-feet per year (af/yr) from the CVP, with a reduction in deliveries during water shortages including regulatory restrictions and drought. The Municipal and Industrial (M&I) Water Shortage Policy defines the reliability of CCWD's CVP supply and was developed by Reclamation to establish CVP water supply levels that would sustain urban areas during severe or continuing droughts and provide for minimum health and safety. The M&I Water Shortage Policy provides for a minimum allocation of 75 percent of adjusted historical use until irrigation allocations fall below 25 percent. Historical use is defined by the M&I Water Shortage Policy as the average quantity of CVP water put to beneficial use within the service area during the last three years of water deliveries, unconstrained by the availability of CVP water.

Los Vaqueros Water Rights

CCWD obtained additional water rights for surplus Delta flows as part of the Los Vaqueros Project. Up to 95,980 acre-feet may be diverted for storage in Los Vaqueros Reservoir from November 1 of each year to June 30 of the succeeding year under Water Rights Permit No. 20749. The Los Vaqueros Water Rights supply can be used in lieu of the CVP supply. When Los Vaqueros Water Rights water is used, CVP supplies are reduced by an equivalent amount. Combined deliveries of Los Vaqueros Water Rights water and CVP water are limited to 195,000 af/yr. Little or no Los Vaqueros Water Rights water is available for diversion to storage in dry years.

Construction of CCWD's Los Vaqueros Expansion (LVE) Project began in 2011, with anticipated project completion in early 2012. The LVE Project will expand the existing Los Vaqueros Reservoir capacity from 100,000 acre-feet to 160,000 acre-feet, providing additional water supply reliability and water quality benefits.

Mallard Slough Supply

CCWD has additional water rights at Mallard Slough for a maximum diversion of Delta water of up to 26,780 af/yr. Diversions from Mallard Slough are unreliable due to frequently poor water quality in the San Joaquin River at this point of diversion. Water quality conditions have restricted diversions from Mallard Slough to approximately 3,100 af/yr (on average) with no availability in dry years. When Mallard Slough supplies are used, CVP diversions are reduced by an equivalent amount.

East Contra Costa Irrigation District

CCWD entered into an agreement with the East Contra Costa Irrigation District (ECCID) in 2000 to purchase surplus irrigation water for M&I purposes in ECCID's service area. Only a portion of ECCID is within the existing CCWD service area (estimated current demand of 6,000 af/yr). The current ECCID agreement allows CCWD to purchase up to 8,200 af/yr for service in the areas common to both districts. The agreement also includes an option for up to 4,000 af/yr

of groundwater (by exchange) when the CVP is in a shortage situation. The groundwater exchange water was utilized during the 2007-2009 drought. This exchange water can be used anywhere within CCWD's service area. Water delivered by CCWD to the City of Brentwood is purchased by the City from ECCID under a separate contract.

**CCWD Water Conservation Program**

CCWD has actively and consistently implemented a variety of effective water conservation programs since 1988. CCWD is a signatory to the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) developed by the California Urban Water Conservation Council (CUWCC). The District implements Best Management Practices (BMPs), as prescribed in the MOU and as required in the Standard Criteria for Evaluating Water Management Plans.

CCWD's Water Conservation Program fulfills the mission of the District by reducing long-term water demand in an environmentally responsible and cost effective manner. The long-term water savings goal for the Conservation Program is to reduce demand by five percent of what it would be in 2050 without District-implemented conservation measures. This equates to approximately 10,000 acre-feet in the year 2050. This amount is in addition to expected conservation savings from natural fixture replacement and other non-District conservation activities. CCWD is on track to meet this goal.

In November of 2009 the historic Senate Bill (SB) X7-7 (20% by 2020) was enacted to increase water use efficiency. The legislation sets an overall requirement of reducing per capita urban water use 20% by December 31, 2020. The reduction requirements apply to CCWD's wholesale customers as well. Specific water use targets to meet the SBX7-7 requirements for CCWD were evaluated and adopted in CCWD's 2010 Urban Water Management Plan.

A detailed discussion of current water conservation activities and their status is provided in Section 4. The elements of CCWD's current conservation program include both Foundational and Programmatic BMPs. Foundational BMPs include:

1. Conservation Coordinator – A full time position has been staffed since 1991. CCWD currently has six additional full-time conservation staff positions.

2. Water Waste Prevention – CCWD has a water waste prohibition ordinance in its Code of Regulations – Title 5: Water and Supply Rates, section 5.44.010 Prevention of Waste and section 5.44.020 Encouraged Water Use.

3. Wholesale Agency Assistance Programs – CCWD offers all of its Water Conservation Programs throughout the service areas of its Retail Water suppliers. This includes the cities of Martinez, Bay Point, Pittsburg, Antioch, Oakley and a portion of Brentwood. Individual customers in these areas are eligible to participate in the survey, education and rebate/ incentive programs. Marketing for these programs is generally conducted by the individual retailer.

4. Water Loss Control - CCWD conducts the required water audit using the AWWA Standard Water Audit and Water Balance Worksheets.

5. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections – A metering report submitted to the Reclamation in 1994 resulted in Reclamation concluding CCWD has substantially completed this BMP. Metering of all retail treated water accounts has been required since the formation of the District in 1940. Dedicated irrigation meters have been required and used since 1991.

6. Retail Conservation Pricing - In FY09, 76% of the District's rate revenue was from volumetric charges. In FY10, 73% of the District's rate revenue was from volumetric charges. The reduction from FY09 to FY10 exemplifies the fact that as consumption declines the percentage of revenue from volumetric charges will also decline.

7. Public Information Programs - The CCWD Public Affairs Department coordinates with the Water Conservation Office to promote water conservation messages and programs through a variety of media. Publications, website pages, presentations, booths at community events, direct mail pieces, newsletters, newspaper ads, and water education programs are all tools used to promote water conservation.

8. School Education Programs - CCWD has a full time staff person dedicated to implementing the school education program. The program is offered throughout the District's retail and wholesale service area to grades K-8$^{th}$. The program includes in-class presentations, assembly programs, water treatment plant tours, watershed programs, and other elements.

Programmatic BMPs include:

9. Residential Assistance Program - CCWD has implemented a single family (SF) and multi-family (MF) conservation survey program since 1989 and has met the 10-year compliance requirement. Therefore, CCWD has an on-going requirement of conducting 400 Single Family Surveys (0.75% of SF Accounts) and 225 MF Dwelling Unit Surveys (0.75% of MF Dwelling Units) per year. CCWD has met the 75% saturation goal for showerheads. This was submitted to the CUWCC in 2007. However, CCWD continues to provide 2.0 gallon per minute showerheads to its customers.

10. Landscape Water Survey - CCWD has conducted landscape water use surveys as part of its Single Family Conservation Survey Program since 1989. CCWD has met the 10-year compliance requirement. Therefore, CCWD has an on-going requirement of conducting 400 Single Family Surveys (0.75% of SF Accounts) per year. A survey takes approximately 75 minutes to complete and includes a review of both interior and exterior water use. However, the primary focus of the survey is landscape water use. The surveyor inspects each irrigation station and notes specific problems and suggested repairs or improvements. A site-specific watering schedule is prepared and programmed into the controller. Finally, the customers are educated on how to read the water meter and use the meter as a tool to help them monitor and manage water use. Customer feedback on the program has been extremely favorable.

11. High Efficiency Clothes Washers – CCWD has provided rebates for high-efficiency clothes washers since 2000. From the year 2000 through 2008, the District provided 13,782 high-efficiency clothes washer rebates throughout its entire service area. CCWD provided 264% of its ten-year requirement, and continues to provide rebates for WaterSense certified high-efficiency clothes washers. The current annual requirement is to provide 0.9% of current single-family accounts per year, which equates to 477 rebates per year.

12. WaterSense Specification Toilets - CCWD has provided rebates for water-efficient toilets since 1994. From 1994 through 2006, CCWD provided nearly 39,000 rebates for 1.6 gallon per flush (gpf) toilets throughout its entire service area (retail and wholesale). In 2007, the District ended the 1.6 gpf program and introduced the 1.28 gpf (high-efficiency toilet) rebate program. In FY07 and FY08, CCWD provided an average of 1,900 rebates per year. As part of the drought program s in FY09 and FY10 CCWD provided 2,900 and 4,000 rebates, respectively.

13. WaterSense Specifications for Residential Development – CCWD does not currently maintain WaterSense specifications for residential development, though New Development Requirements meeting the WaterSense criteria could be considered in the future. CCWD coordinated with the City of Concord to develop specifications for new development occurring within the Concord Naval Weapons Station.

14. Commercial, Industrial and Institutional (CII) - CCWD has an active CII conservation program. Since 1990, the District has conducted more than 2,200 CII conservation surveys throughout the District's service area. In addition, the District has provided 439 commercial clothes washer rebates, 294 high-efficiency urinal rebates, 691 high-efficiency pre-rinse spray nozzles, 2 cooling tower conductivity meter rebates, 1,681 CII ultra-low flow toilet rebates, and 272 high efficiency toilet rebates.

15. Landscape - CCWD has provided a comprehensive landscape conservation program since 1990. The program includes landscape site surveys, water budgets and irrigation rebates.

Customers and the general public provide input to CCWD's water conservation program on a routine basis. Their ideas and comments are obtained through the activities of the conservation program itself, as well as during the public meetings of the Board of Directors. All policy and funding issues are considered by the Board during its review and action on specific project proposals, annual operating and capital budgets, and water rate adjustments.

**Report Format**

The 2008 Reclamation Guidebook and corresponding 2011 Standard Criteria (Appendix A) provide a recommended format for Water Management Plans. Calendar year 2010 was selected as the reference reporting year for submittal of this Plan. The recommended Water Management Plan consists of eight sections. Sections 1 and 2 include descriptive information about CCWD including land use, customer characteristics, and descriptions of the physical system and water resources. Sections 3 and 4 present the agricultural (not applicable to CCWD) and Municipal & Industrial (M&I) BMPs, including the California Urban Water Best Management Practices described in the MOU signed by CCWD in September 1991. The remaining sections include

descriptions of CCWD's implementation plan, exemption process, regional criteria, and five-year revision procedure.

Appendices to this plan provide detailed information as specified in the Reclamation Guidebook. The CVPIA Criteria is included as Appendix A and a District Facilities Map can be found in Appendix B. Appendices C and E contain relevant sections of CCWD's Code of Regulations regarding water supply and rates and the Water Shortage Contingency Plan. Additional appendices include the Reclamation approval letter (Appendix D), the Board Resolution prohibiting water waste (Appendix F), the 2010 CCWD Annual Water Quality Report (Appendix G), the annual CCWD BMP reports (Appendix H), examples of Public Outreach programs (Appendix I), and the Board Resolution adopting the 2011 Water Management Plan (Appendix J).

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# SECTION 1: Description of the District

This chapter addresses Section 1 of the Central Valley Project Improvement Act of 1992 (CVPIA) Criteria (2005 Criteria; see Appendix A) and provides a historical overview of the Contra Costa Water District (CCWD or District).

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## A. History

This section provides a historical overview of CCWD, including significant historical events and trends that appear likely to influence CCWD's future. Also included is a brief discussion of the original water users and water development within the vicinity of the current CCWD service area, formation of CCWD, issues affecting the decision to contract with the United States Bureau of Reclamation (Reclamation) and others, and changes in irrigated acreage and water supplies. Table 1-1 displays the contract history between Reclamation and CCWD.

### 1. Date CCWD Formed and Original Size

Date District Formed: May 5, 1936
Date of First Reclamation Contract: 1941
Original Size (acres): 48,000
Current Year (Basis of Water Management Plan): 2010

CCWD serves approximately 500,000 people throughout north, central, and east Contra Costa County (County). Its customers also include 10 major industries, 36 smaller industries, and approximately 20 agricultural water users. CCWD operates and maintains a complex system of water transmission, treatment, and storage facilities to supply both treated and untreated water to its customers.

The Contra Costa County Water District was approved by voters in 1936 as the legal entity to contract, purchase, and distribute water provided by Reclamation through the Contra Costa Canal. (In 1981 "County" was removed from the name, leaving Contra Costa Water District.) The 48-mile canal conveys water from the Sacramento-San Joaquin Delta, through Rock Slough, Old River and Middle River, to CCWD customers. For the first 25 years of its existence, CCWD's main responsibility was the purchase and distribution of untreated water through the Contra Costa Canal. The cities and other water utilities within CCWD were responsible for

treating water used by their customers. However, in the late 1950s, many citizens and public officials became concerned about the quality and cost of the water in the central County area. To solve this problem, CCWD purchased the California Water Service Company's Concord-area treatment, pumping, storage, and distribution facilities. In 1968, CCWD replaced the old treatment facilities with the construction of its own Ralph D. Bollman Water Treatment Plant in Concord. In 1992, CCWD completed the Randall-Bold Water Treatment Plant in Oakley that is jointly owned with the Diablo Water District (DWD). The Randall-Bold plant provides treated water to DWD, and by contract, to the Cities of Brentwood and Antioch and the Golden State Water Company (Bay Point). Additionally, the Multi-Purpose Pipeline, constructed in 2003, allows CCWD to serve new customers in the central County Treated Water Service Area (TWSA) from the Randall-Bold plant. Combined, the Bollman and Randall-Bold water treatment plants provide treated water to approximately 200,000 people in the central County area. CCWD's service area also includes a large industrial base that includes oil refineries, steel mills, and chemical manufacturing facilities. Large industrial water use accounts for approximately one-third of total water use within CCWD.

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The CCWD CVP contract with Reclamation was renewed in May 2005. Under the updated contract (Contract No. 175r-3401a-LTR1), CCWD is identified as a municipal and industrial water supplier because less than one percent of CCWD's water demand is irrigated agriculture. Therefore, sections of the CVPIA Criteria pertaining to agricultural water suppliers are not included in this report. Non-CVP supplies are used to meet agricultural demands within CCWD's service area.

| TABLE 1-1. RECLAMATION CONTRACT HISTORY | | | | |
|---|---|---|---|---|
| | **Date** | **Acres[a]** | **Classes[b]** | **Acre-feet/year (af/yr)** |
| Interim Contracts[c] | 1941 to 1948 | None identified | None identified | 13 to 10,500 |
| Contract Amendment | 1949 to 1951 | None identified | None identified | No quantity specified |
| Contract Amendment<br>(Reclaimed Water Amend.)<br>(LV Amendment)<br>(Shortage Provision Amend.)<br>(Shortage Provision Amend.) | 1970<br>1973<br>1994<br>1999<br>2000 | None identified | None identified | 195,000<br>195,000<br>195,000<br>195,000<br>195,000 |
| Long-Term Renewal | 2005 | None identified | None identified | 195,000 |

(a) The contracts do not state the acreage within CCWD's service area.
(b) CCWD does not have Class I or Class II water identified in its contract with Reclamation. The classes are used for agricultural contractors and are generally used to define reliability or firmness of supply for blocks of water; Class I is most reliable and Class II is more discretionary (i.e., is not available during dry periods).
(c) Source: Reclamation Region 2, Factual Report Contra Costa Water District, November 1950.
(d) Operating limitations that apply to CCWD's CVP contract are outlined in Table 1-10.

### 2. Current Size, Population and Irrigated Acres

This information is provided in Table 1-2.

| TABLE 1-2. CURRENT SIZE, POPULATION, AND IRRIGATED ACRES | |
|---|---|
| Size (acres) | 140,787 |
| Population Served[a] | 500,000 |
| Irrigated Acres | 377 |

(a) Includes Retail and Wholesale service areas.

### 3. Water Supplies Received in Current Year

Information on amount of water received by CCWD during calendar year 2010 is provided in Table 1-3.

| TABLE 1-3. WATER SUPPLIES RECEIVED IN CALENDAR YEAR 2010[a] | |
|---|---|
| **District Supplies Received** | **AF** |
| Federal urban water (Reclamation's CVP) | 67,111 |
| Federal agricultural water | 0 |
| State water | 0 |
| Other Wholesaler (define) | 0 |
| Local surface water | |
| Los Vaqueros Water Right[b] | 0 |
| Mallard Slough | 1,736 |
| East Contra Costa Irrigation District (ECCID)[c] | 7,751 |
| Upslope drain water | 0 |
| **Total District Supplies** | **76,598** |
| **Non-District Supplies Received** | **AF** |
| Groundwater[d] | 3,000 |
| Transferred water | 0 |
| Recycled water[e] | 6,750 |
| City of Brentwood[f] | 5,761 |
| City of Antioch | 7,617 |
| **Total Non-District Supplies** | **23,128** |
| **TOTAL WATER SUPPLIES** | **99,726** |

(a) This table does not include water previously stored in Los Vaqueros Reservoir and released to meet demands in 2010.
(b) No water was diverted under CCWD's Los Vaqueros Water Right in Calendar Year 2010.
(c) Includes CCWD/ECCID overlap and Brentwood use inside CCWD service area. (d) CCWD does not manage groundwater, but estimates total use within CCWD boundaries at approximately 3,000 af/yr.
(e) Does not include in-plant or wildlife habitat enhancement and wetland uses.
(f) ECCID water wheeled for City of Brentwood customers outside of CCWD service area.
(g) This table does not include industries that hold rights to water from the San Joaquin River.

## 4. Annual Entitlement under Each Right and/or Contract

Table 1-4 describes the nature and quantity of each of CCWD's surface water rights and contracts and the restrictions on the time of diversion. Table 1-5 describes the nature and quantity of non-CCWD supplies utilized in the service area.

| TABLE 1-4. ANNUAL ENTITLEMENT UNDER EACH RIGHT AND/OR CONTRACT | | | |
|---|---|---|---|
| **Source** | **AF** | **Contract/Water Right** | **Contract Restrictions** |
| Central Valley Project | 195,000 | Contract No. 175r-3401a-LTR1 | Contract renewed in May 2005 for 40-year term; Reduction in deliveries during water shortages including regulatory restrictions and drought. |
| Los Vaqueros | 95,980 | Permit No. 20749 | Water may be diverted for storage between November 1 of each year to June 30 of the succeeding year. Combined customer deliveries of Los Vaqueros and CVP water shall not exceed 195,000 af/yr of diversions. |
| Kellogg Creek | 9,640 | Permit No. 20750 | Shall not exceed 115 cubic feet per second (cfs) by direct diversion and 9,640 af/yr by storage from January 1 through December 31. |
| Mallard Slough | 14,880 | License for Diversion and Use of Water #10514 (August 12, 1975, application filed November 19, 1928) | Total diversion rate from Mallard Slough is limited to 39.3 cfs. Limited by water quality. |
| Mallard Slough | 11,900 | Permit for Diversion and Use of Water #19856 (July 3, 1986, application filed September 28, 1983) | Total diversion rate from Mallard Slough is limited to 39.3 cfs. Diversion only August 1 through December 31. No diversions permitted when CVP and SWP are making releases to meet in-basin requirements. Limited by water quality. |

| TABLE 1-5. NON-CCWD SUPPLIES UTILIZED IN THE SERVICE AREA | | | |
|---|---|---|---|
| **Source** | **AF** | **Contract/Water Right** | **Contract Restrictions** |
| City of Antioch | 25,340 | Pre-1914 Water Right | The City of Antioch holds two pre-1914 water rights. Water can only be diverted when water quality is sufficient, and at a combined rate of 35 cfs. |
| East Contra Costa Irrigation District (ECCID) | 50,000 | Pre-1914 Water Right | ECCID has an agreement with DWR guaranteeing 50,000 af/yr. |
| Inland Container (formerly Gaylord Container Corporation) | 28,000 | Permit No. 019418 | Point of diversion is the San Joaquin River. |
| Tesoro (formerly Tosco) Corporation | 16,650 | Appropriative water right | Point of diversion is Hastings Slough on the San Joaquin River. |
| Dupont | 1,405 | Appropriative water right (license #000674) | |
| Groundwater | 3,000-4,500 | NA | Undetermined number of wells in Ygnacio, Clayton, and Pittsburg/Antioch Areas. |
| Central Contra Costa Sanitary District (CCCSD) | 1,600 | Project Specific Agreement in 1995 | Recycled water used for industrial purposes, urban landscape, and golf course irrigation. |
| Delta Diablo Sanitation District (DDSD) | 10,250 | Agreements in 2000 and 2004 | Recycled water used for industrial purposes, urban landscape, and golf course irrigation. |

## 5. Anticipated Land Use Changes

### Concord Naval Weapons Station – City of Concord

In February 2010, the City of Concord adopted a Reuse Plan proposing to redevelop approximately 5,000 acres of the Concord Naval Weapons Station (CNWS), which is located within CCWD's Treated Water Service Area. CCWD staff worked with the City of Concord throughout the planning process to incorporate significant water conservation measures, low water demand development, and recycled water standards into the CNWS Reuse Plan. These standards have reduced the project's potable water demand projections by more than 50 percent. It is estimated that the project will utilize recycled water in an amount equal to or greater than the net potable water demand.

The Reuse Plan is currently being modified into a format compatible with the Concord 2030 Urban Area General Plan. Next a supplemental Environmental Impact Report (EIR) will be completed based on the certified EIR from the Reuse Plan. The final step will be certification of the EIR and amendment of the General Plan, anticipated sometime in 2012. Major construction is not anticipated to occur until at least 5 years, depending on economic conditions.

### Cypress Corridor – City of Oakley

The Cypress Corridor includes the East Cypress Corridor Specific Plan and the North Dutch Slough Development Properties located in the eastern most portion of Oakley. The East Cypress Corridor Specific Plan proposes the development of mixed-uses on a 2,546-acre site within the Hotchkiss Tract that is currently open space and primarily agricultural. The proposed project includes 5,609 residential units (detached and attached units), commercial use units (up to 638,000 square feet), public schools (2 elementary and one middle), a man-made lake, open space/easements, gas well sites, wetlands/dunes, flood-control levees, parks (neighborhood and community), light industrial use units, commercial recreation, and a beach club. The area is located east of the City of Oakley in eastern Contra Costa County. Specifically, the project is located east of Jersey Island Road and the Contra Costa Water District unlined canal, south of the Dutch Slough Road, west of Sandmound Slough, and north of Rock Slough. Shea Homes is in the process of constructing the Summer Lakes South Project within the East Cypress Corridor Specific Plan (about 540 residential units). The North Dutch Slough Development Properties include the already developed Cypress Grove project (640 units on 140 acres) and planned development of another approximately 1,500 residential units on 500 acres. The Dutch Slough development is directly south of the unlined portion of the Contra Costa Canal. Major construction within the East Cypress Corridor will likely not occur until at least 2017-2020 depending on economic conditions. All of the development areas within the City of Oakley are within the CCWD service area. Only the Cypress Grove Project and Summer Lakes Project have been included by the United States Bureau of Reclamation as part of the Central Valley Project.

**City of Antioch**

In the City of Antioch, future growth will occur south of Lone Tree Way, in the Sand Creek and Roddy Ranch areas. All of the Roddy Ranch area is within the CCWD and CVP service areas. A portion of the Sand Creek area, known as Higgins Ranch, is currently outside of the CCWD service area. Development within the Sand Creek Project Area when implemented could result in approximately 2,000 to 4,000 new residential units on 2,700 acres. Roddy Ranch plans as many as 1,300 homes on about 1,111 acres. The schedule for development of these projects is uncertain due to economic conditions.

**City of Pittsburg**

The City of Pittsburg's urban limit line expansion was approved by voters in 2005. The expanded urban limit area is approximately 2,200 acres. It is estimated that approximately 2,000 homes may be constructed in these areas. In November 2011 Pittsburg voters aproved expanding the urban limit line within Pittsburg to include an additional 193-acre petroleum tank farm that could be converted to single family homes. Most of the area that has been expanded by the city of Pittsburg including the petroleum tank farm is currently outside of the CCWD service area. Development of new expanded urban limit line properties is uncertain due to economic conditions.

### 6. Cropping Patterns (DNA)

This section does not apply to CCWD.

### 7. Major Irrigation Methods (by acreage) (DNA)

This section does not apply to CCWD.

## B. Location and Facilities

This section describes CCWD facilities, including measurement locations, conveyance system, and storage facilities. See Appendix B for points of delivery, turnouts (internal flow), measurement locations, conveyance system, and storage facilities.

### 1. Incoming Flow Locations and Measurement Methods

The location of diversion facilities operated and maintained by CCWD are shown in Appendix B and described in Table 1-6.

| TABLE 1-6. INCOMING MEASUREMENT METHODS AND LOCATIONS | | | |
|---|---|---|---|
| **Location Name** | **Physical Locations – District Supplies** | **Type of Measurement Device** | **Accuracy** |
| Rock Slough Intake | The Contra Costa Canal begins at the west end of Rock Slough, a dead end channel in the Southwest portion of the Sacramento-San Joaquin Delta, and ends at the Martinez Reservoir. The permitted capacity of Rock Slough is 350 cubic feet per second (cfs). The diversion is equipped with a state-of-the-art fish screen. | Flow through Rock Slough is measured using an Acoustic Velocity Meter (AVM) installed just upstream of the second pumping plant in a chain of four pumping plants that lifts the water to its highest delivery elevation. | The AVM accuracy is verified two times per year by USGS staff. The accuracy determination is made by comparing AVM readings to measurements made using an AA Current Meter. |
| Old River Pumping Plant | The Old River Intake, completed as part of the Los Vaqueros Project, is located just south of the intersection of Old River and Highway 4. The diversion is equipped with a state-of-the-art fish screen. The intake capacity is 250 cfs. | Flow through the Old River Intake is measured and metered by an insertion type Doppler flow meter in a full pipe discharge flow. | The flow meter includes built in diagnostic testing that is monitored regularly. The meter accuracy is verified as necessary by comparison of the Doppler meter to a temporarily installed external ultrasonic flow meter. |
| Middle River Pumping Plant | In 2010, CCWD completed construction of a pumping plant, with an intake capacity of 250 cfs, near Middle River. The diversion is equipped with a state-of-the-art fish screen. | Flow through the Middle River Intake is measured and metered by an insertion type ultrasonic/ Doppler flow meter in a full pipe discharge flow. | The flow meter includes built in diagnostic testing that is monitored regularly. The meter accuracy is verified as necessary by comparison to flows measured at Old River. |
| Mallard Slough Pumping Plant | A dredged channel off of the Sacramento River in the unincorporated community of Bay Point (West Pittsburg). A new pump station was constructed to replace the existing pump station in January 2003. The new pump station is equipped with a state-of-the-art fish screen. The intake capacity is 62 cfs. | Flow through the Mallard Slough intake is metered using a magnetic flow (MAG) meter on the discharge header of the pump station. | Meter accuracy for MAG meters is set at the factory at time of installation. This meter is checked for proper operation once per year. |

## 2. Current Year Untreated Water Conveyance System

Table 1-7 provides information on the current untreated water conveyance system.

**TABLE 1-7. UNTREATED WATER CONVEYANCE SYSTEM**

| Miles Unlined - Canal | Miles Lined - Canal[(a)] | Miles Piped[(b)] | Miles - Other |
|---|---|---|---|
| 4.4 | 49 | 33 | NA |

(a) The length of lined portions of the Contra Costa Canal and the Ygnacio Canal.
(b) The length of the Mallard pipeline, the Shortcut pipeline, the Los Vaqueros pipeline, and 2,000 feet (0.4 miles) of the Unlined Canal that was encased in 2009.

The primary conveyance facility for CCWD's untreated water supply is the Contra Costa Canal (Canal), which carries water from Rock Slough for deliveries throughout CCWD's service area. The Canal also conveys water from the Old and Middle River intakes via the Los Vaqueros Pipeline. The Canal is approximately 48 miles long, with the major deliveries within the first 19 miles, which runs from Rock Slough to the Shortcut Pipeline near the Bollman Water Treatment Plant. The first 4 miles of the Canal have been historically unlined and run from Rock Slough to Pumping Plant 1. In 2009 CCWD completed Phase 1 of the Canal Replacement Project, enclosing approximately 2,000 feet of the unlined Canal in a pipe, extending east from Pumping Plant 1. Starting at Pumping Plant 1 the remaining Canal reaches are concrete lined, with capacities ranging from approximately 22 cubic feet per second (cfs) to 350 cfs. Four pumping plants within the first 7.1 miles of the Canal lift water 124 feet to flow the remaining length of the main Canal by gravity. The Ygnacio Re-lift Pump Station diverts water from the main Canal into the 5-mile Ygnacio Loop in the City of Walnut Creek. The Canal has several in-line siphons, culverts, and check structures, as well as a 1/4-mile long tunnel. The Shortcut Pipeline conveys untreated water from the Canal to the Bollman Water Treatment Plant, the City of Martinez, Shell Oil Company, as well as some smaller industrial customers. The figure in Appendix B indicates the major existing facilities along the Contra Costa Canal.

The Los Vaqueros Project included a new point of diversion (at Old River south of the Highway 4 crossing) that operates in conjunction with the Rock Slough Intake, associated water transmission facilities, pumping plants, and other facilities. The pumping plant is at the Old River intake and has an installed capacity of 250 cfs. Diversion from the Old River intake for delivery to CCWD's service area began in the summer of 1997. In 2010, CCWD completed construction of a second pumping plant on Victoria Canal near Middle River that also has an installed capacity of 250 cfs. Both the Middle River and Old River pumping plants pump water to the 4 million gallon Transfer Reservoir. From the Transfer Reservoir water can either flow by gravity to the Canal or is pumped up to the Los Vaqueros Reservoir by the Transfer Pump Station. Water stored in the Los Vaqueros Reservoir is conveyed to the Canal by gravity. The Transfer Pump Station has an installed capacity of 200 cfs.

A key to successful performance of the Los Vaqueros Project is CCWD's ability to fill and continue to refill the reservoir from Old and Middle River with high quality water, and to use that water for blending when salinity at CCWD's Delta intakes exceed CCWD's water quality goal of 65 milligrams/liter (mg/L) chloride.

## 3. Current Year Treated Water Distribution System

CCWD's Treated Water Service Area (TWSA) distribution system serves retail customers in central Contra Costa County communities with ground elevations ranging from between 0 and 1,000 feet above mean sea level. The distribution system consists of approximately 800 miles of pipelines ranging in diameter from 2 to 66 inches.

**TABLE 1-8. TREATED WATER CONVEYANCE SYSTEM**

| Miles Asbestos Cement Pipe | Miles Steel Pipe | Miles Cast Iron Pipe | Miles Polyvinyl Chloride | Miles – Other[(a)] |
|---|---|---|---|---|
| 496 | 25 | 19 | 168 | 91 |

(a) Other materials include ductile iron (8 miles), cement mortar lined, coated steel pipe and other materials (83 miles).

## 4. Storage Facilities

CCWD's untreated water storage reservoirs are Mallard, Contra Loma, Martinez and Los Vaqueros Reservoirs. The figure in Appendix B shows the locations of these untreated water reservoirs, the Los Vaqueros Reservoir watershed boundary, and the Antioch Reservoir, which is owned by the City of Antioch. Mallard Reservoir is used as a storage facility for emergency use, flow regulation, and serves as a forebay to the Bollman Water Treatment Plant. Mallard Reservoir has a capacity of about 3,069 acre-feet, approximately two weeks of supply for CCWD's Treated Water Service Area customers.

The Contra Loma Reservoir, which is located near Canal Milepost 12, is used primarily as a regulating reservoir for peak demands and short term (1 to 7 days) supplies and for emergency storage for CCWD customers. Contra Loma Reservoir has a capacity of about 2,087 acre-feet.

The Martinez Reservoir, located in the City of Martinez, is at the terminus of the Contra Costa Canal and the Shortcut Pipeline and provides regulating storage to capture flows from canal operations. The Martinez Reservoir has a capacity of about 276 acre-feet.

The Los Vaqueros Reservoir was completed in 1997 and the initial filling began in 1998. The 100,000 acre-foot reservoir is located eight miles south of the City of Brentwood. The reservoir stores higher quality Delta water for blending with the Delta supply during dry periods when sodium and chloride levels typically increase. Besides improving water quality for CCWD's approximately 500,000 customers, the reservoir stores water for emergency supply and for operational flexibility to protect Delta fisheries. In 2011, CCWD started construction on a project to increase the capacity of the Los Vaqueros Reservoir to 160,000 acre-feet. Completion of the Los Vaqueros Reservoir Expansion project is expected in 2012 and will provide CCWD customers with improved water supply reliability during extended droughts and emergencies.

CCWD also has about 221 acre-feet of treated water storage capacity throughout its treated water distribution system, available for operations, emergency and fire suppression.

| TABLE 1-9. STORAGE FACILITIES | | |
|---|---|---|
| **Name** | **Type** | **Capacity (AF)** |
| Los Vaqueros Reservoir | Untreated Water | 160,000[(a)] |
| Mallard Reservoir | Untreated Water | 3,069 |
| Contra Loma Reservoir | Untreated Water | 2,087 |
| Martinez Reservoir | Untreated Water | 3,069 |
| 45 Treated Water Reservoirs | Treated Water | 221 |
| WTP Clearwells | Treated Water | 46 |

(a) The Los Vaqueros Reservoir is under construction to increase the capacity from 100,000 AF to 160,000 AF. Completion of the expansion project is expected in 2012.

### 5. Outflow Locations and Measurement Methods (DNA)

This section does not apply to CCWD.

### 6. Agricultural Spill Recovery System (DNA)

This section does not apply to CCWD.

### 7. Agricultural Delivery System Operation (DNA)

This section does not apply to CCWD.

### 8. Restrictions on Water Source(s)

All of CCWD's source water is from surface water diversions from the Sacramento-San Joaquin River Delta. A summary of the restrictions on these water sources is provided in the following table.

| TABLE 1-10. RESTRICTIONS ON WATER SOURCES | | |
|---|---|---|
| **Restriction** | **Cause of Restriction** | **Effect on Operations** |
| No-Diversion Period: Cease diversions for 30 days each spring | State and Federal fishery agencies | CCWD must use the Los Vaqueros Reservoir for its water supply during the 30 days. If CCWD cannot refill the Reservoir in the same year, the restriction could affect the ability of the Reservoir to deliver high quality water. |
| No-Fill Period: Avoid filling for 75 days each spring and in some months can only fill when Delta outflow is high enough to maintain "X2" west of either Chipps Island or Collinsville | State and Federal fishery agencies | CCWD cannot refill Los Vaqueros Reservoir between March 15 and May 31 or at times when outflow is low and "X2" could restrict filling, all of which could limit the water quality performance of the Los Vaqueros Project. |
| Additional No-Fill Days: February no-fill requirement; if Los Vaqueros (LV) Reservoir storage is greater or equal to 70,000 AF, CCWD cannot fill for 15 days between February 14 and 28. Similarly if LV storage is greater or equal to 80,000 AF, CCWD cannot fill for 10 days between February 19 and 28. If LV storage is greater or equal to 90,000 AF, CCWD cannot fill for 5 days between February 24 and 28. | California Department of Fish and Game | These combined restrictions could limit the water quality performance of the Los Vaqueros Project. |
| Total CVP/LV Quantity: Annual water customer deliveries through the CVP and LV water right shall not exceed 177,000 AF and the total diversion annually under all water rights shall not exceed 222,000 acre feet. | California Department of Fish and Game | System demands must be managed within the specified diversion limits. |
| Diversion Rate: Rock Slough permitted capacity is 350 cfs. Pumping at Old and Middle River is limited to 250 cfs individually and 320 cfs combined. The maximum instantaneous diversion rate at all points shall not exceed: 540 cfs for the months of June, July, August, September and October; 450 cfs for the months of November, December, January, February and March; and 470 cfs for April and May. | SWRCB and California Department of Fish and Game | CCWD cannot expand facilities without new SWRCB permits and CDFG approval. |
| CVP Quantity: CCWD pumps CVP water at the Rock Slough, Old and Middle River intakes according to schedules filed with Reclamation. Deficiencies are imposed as necessary by Reclamation according to the M&I Water Shortage Policy. | Reclamation | In years when there are deficiencies, CCWD may choose to supplement its water supply such as through water transfers. If there are severe restrictions, CCWD may implement voluntary or mandatory water rationing. |
| Water Rights: Seawater intrusion at CCWD's Mallard Slough restricts diversions to periods when water is of suitable quality. Diversion at Mallard Slough under Permit # 19856 is limited to August 1 – December 31. No diversion is allowed under Permit # 19856 when release of supplemental CVP and SWP project water is required to meet in basin entitlements (SWRCB Term 91). Instantaneous diversions at Mallard Slough Pump Station are limited to 39.3 cfs under License #10514 and 39.3 cfs under Permit #19856. | SWRCB | When diversions at Mallard Slough are unavailable, CCWD relies completely on diversions from Rock Slough, Old and Middle River into the Contra Costa Canal and during blending periods, releases from Los Vaqueros Reservoir. |

### 9. Proposed Changes or Additions to Facilities and Operations for the Next 5 Years

**Los Vaqueros Expansion Project**
In March 2004, CCWD voters passed a measure to study the feasibility of expanding the Los Vaqueros Reservoir. The Final Environmental Impact Statement/Environmental Impact Report was certified in March 2010 and CCWD is moving forward on a phased expansion of the Los Vaqueros Reservoir to 160,000 acre-feet. Construction began in spring of 2011 and is scheduled to be complete in 2012. The project will immediately improve water quality and water supply reliability for CCWD customers while providing a net environmental benefit to the Delta. Studies continue on a second phase of the expansion to as much as 500,000 acre-feet.

**Rock Slough Fish Screen**
In 2011, Reclamation completed construction of a state-of-the-art fish screen at the Rock Slough intake to the Contra Costa Canal. The fish screen was required by the Central Valley Project Improvement Act (CVPIA) and the U.S. Fish and Wildlife Service's Los Vaqueros Project Biological Opinion on Delta Smelt. Reclamation began work on the project in 1996, but suspended the effort in 1998 due to lack of funding from the CVPIA cost sharing agencies. In FY10, the District and Reclamation acquired funding from the American Recovery and Reinvestment Act for project construction.

**Canal Replacement Project**
CCWD is also implementing the Canal Replacement Project which consists of lining or encasement of approximately four miles of the Contra Costa Canal from the Rock Slough Intake to Pumping Plant No. 1. The purpose of the project is to improve source water quality at the Rock Slough Intake by hydraulically isolating the high saline groundwater from the Canal. The project will also increase public safety and flood control. Construction of the approximately 2,000-foot initial phase was completed in 2010. The project is being completed in phases with each phase of the project spanning a specific reach of the Canal with unique project partners, funding sources, and benefits.

## C. Topography and Soils

This section describes the topography and soil types within the CCWD service area and their impact on the operation of the untreated and treated water systems. The impact of soil on the use of water within CCWD's service area is also discussed.

### 1. Topography and its Impact on Water Operations and Management

CCWD's service area consists of two general physiographic regions: the Diablo Range and the Sacramento-San Joaquin Delta. The Diablo Range within the CCWD service area consists of smooth rolling hills in central and northern portions of the service area to fairly rugged mountains along Marsh Creek Road. The eastern part of the service area is characterized by level floodplains along with gently rolling hills, with large areas of windblown sands developed on the level flood plains (US Soil Conservation Service, Soil Survey of Contra Costa County, September 1977).

Within CCWD's TWSA, most of the growth projected is in the higher elevations on the surrounding hillsides within the existing TWSA boundary. The terrain and soils in these locations are not expected to cause a per capita water use significantly different from the rest of CCWD's TWSA. Elevations within CCWD's TWSA vary from 0 feet to over 1,000 feet above sea level. Eight water pressure zones maintain adequate pressures in the CCWD's TWSA.

A higher per capita demand in the eastern portion of the service area has been partly attributed to the high permeability of sandy soils in the vicinity of the City of Oakley.

### 2. District's Soil Associations (DNA)

This section does not apply to CCWD.

### 3. Limitation Resulting from Soil Problems (DNA)

This section does not apply to CCWD.

## D. Climate

This section describes the general climate within CCWD's service area including average precipitation, maximum and minimum temperatures, wind velocities and annual number of frost-free days. The topic of microclimates and their effect on water management and operations is addressed.

### 1. General Climate of the District Service Area

CCWD's service area generally has hot, dry summers and cool and wet winters. In summer, a steady marine wind blows through the Golden Gate and up the Carquinez Strait. Velocities of 15 to 25 knots or more are common late in the afternoon and in the evening, generally 10 knots or less in the morning. The jet of air sweeping eastward through the straits curls northward and southward in the vicinity of Antioch. In December and January, tule fog is common and may last for several days. Frequently this fog drifts into the small inland valleys.

Average annual precipitation ranges from approximately 13 inches in Brentwood to 22 inches in Walnut Creek. The differences reflect proximity to the coast and elevation. Tables 1-11 and 1-12 show the average monthly and annual evapotranspiration, precipitation and temperature for Brentwood and Concord, representing East County and Central County conditions, respectively.

| TABLE 1-11. GENERAL CLIMATE OF THE DISTRICT SERVICE AREA (EAST COUNTY) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Brentwood CIMIS Station (ID =147), Data Period 1986-2010** | | | | | | | | | | | | | |
| | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Annual** |
| Avg Total Precip. (in.) | 2.60 | 2.50 | 1.45 | 0.76 | 0.60 | 0.20 | 0.06 | 0.06 | 0.23 | 0.73 | 1.18 | 2.36 | 12.73 |
| Avg Temp.(F) | 46 | 50 | 55 | 59 | 65 | 70 | 74 | 72 | 69 | 62 | 53 | 45 | 60 |
| Avg Max. Temp. (F) | 55 | 61 | 67 | 72 | 79 | 85 | 91 | 90 | 86 | 77 | 64 | 54 | 73 |
| Avg Min. Temp. (F) | 38 | 41 | 44 | 47 | 51 | 55 | 56 | 56 | 54 | 49 | 42 | 37 | 47 |
| Monthly Avg Eto (in) | 1.07 | 1.77 | 3.74 | 5.29 | 7.06 | 8.00 | 8.38 | 7.22 | 5.66 | 3.82 | 1.88 | 1.09 | 54.98 |

| TABLE 1-12. GENERAL CLIMATE OF THE DISTRICT SERVICE AREA (CENTRAL COUNTY) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Concord Wastewater Plant (WRCC Station =041967), Data Period 1991-2010** | | | | | | | | | | | | | |
| | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Annual** |
| Avg Total Precip. (in.) | 3.90 | 4.03 | 2.05 | 1.14 | 0.72 | 0.11 | 0.00 | 0.03 | 0.03 | 0.77 | 1.93 | 3.88 | 18.58 |
| Avg Temp.(F) | 49 | 53 | 57 | 60 | 65 | 70 | 73 | 73 | 71 | 65 | 56 | 50 | 62 |
| Avg Max. Temp. (F) | 57 | 62 | 67 | 71 | 78 | 84 | 88 | 88 | 85 | 77 | 66 | 58 | 73 |
| Avg Min. Temp. (F) | 42 | 44 | 47 | 49 | 53 | 57 | 58 | 59 | 57 | 53 | 46 | 41 | 50 |
| Monthly Avg Eto (in) | 0.95 | 1.75 | 3.48 | 5.37 | 6.88 | 7.79 | 8.29 | 7.24 | 5.33 | 3.63 | 1.76 | 1.01 | 53.48 |

1. Evapotransporation data from the CIMIS database for Concord (ID = 170).

Average wind velocity: 8.7 mph  Average annual frost-free days: 250-330

Average wind velocity is from the Western Regional Climate Center database for the Concord Buchanan Field station. Number of frost-free days is from the Survey of Contra Costa County, California, United States Department of Agriculture Soil Conservation Service, 1977.

### 2. Impact of Microclimates on Water Management within the District

The per capita demands are similar for all areas except the areas in East County, which have a higher per capita demand. The higher per capita demand is likely a result of several factors, including slightly higher temperatures, the rapid housing growth and resultant new landscaping, and increased watering rates due to the high permeability of sandy soils.

## E. Natural and Cultural Resources

This section contains a description of the known water-dependent environmental and recreational resources within the CCWD service area. The improvement or management of these resources by CCWD or other agencies is indicated.

### 1. Natural Resources Areas within the District

Responsibility for improvement or management of most of the environmental resources identified within CCWD's service area is reflected by Contra Costa County's classification of

areas as either a significant Ecological Resource Area or as Open Space. CCWD manages only the lands that it owns. The Los Vaqueros watershed is owned by CCWD and is managed to protect water quality and enhance the area's natural resources.

**TABLE 1-13. NATURAL RESOURCE AREAS WITHIN THE SERVICE AREA**

| Name | Estimated Acres | Description |
|---|---|---|
| Martinez Regional Shoreline | 344 | Preserve with a mix of uses for recreation and wildlife habitat management.[(a)] Tidal marsh supports salt marsh harvest mouse, California clapper rail and possibly California black rail. Ornate shrew, black-shouldered kite and Suisun song sparrow also occur here.[(b)] |
| Point Edith State Wildlife Area | 760 | The Tidal Marsh consists of numerous water channels and tiny ponds and is managed by the California Department of Fish and Game.[(c)] Tidal marsh supports salt marsh harvest mouse, California clapper rail and possibly California black rail. Ornate shrew, black-shouldered kite and Suisun song sparrow also occur here. [(b)] |
| Big Break Regional Shoreline | 40 | Home to 70 species of birds and several species of mammals. Twenty-seven special-status wildlife species have the potential to occur; six special-status wildlife species are known to occur. Nesting is confirmed for black rails, northern harriers, white-tailed kites, and yellow-breasted chats.[(d)] |
| Bay Point Regional Shoreline | 150 | This marsh area is habitat for salt marsh harvest mouse and the California black rail.[(e)] |
| Lime Ridge Open Space | 1,150 | Supports Mt Diablo Manzanita, and a buckwheat subspecies which is endemic to Lime Ridge.[(b)] |
| Antioch Dunes National Wildlife Refuge | 70 | Small and only remaining remnants of riverine dunes. The remaining dunes support rare and/or endangered plants, at least six endangered and/or endemic insects and the California legless lizard.[(b)] |
| John Muir National Historic Site – Mt. Wanda | 325 | Preserve encompassing Mount Wanda, an oak woodland and grassland area within the John Muir National Historic Site.[(f)] |
| Los Vaqueros Watershed | 18,500 | Isolated areas associated with vernal pools, wetlands, and native bunchgrasses. Protected and managed by CCWD to enhance area's natural resources. Portions of the area are of biological importance because of the presence of historical eagle nests and other outstanding natural features. This area provides habitat for the following species: San Joaquin kit fox, Alameda whipsnake, tri-colored blackbird, California red-legged frog, California tiger salamander, western pond turtles and freshwater shrimp. Alkali Meadows and Northern Claypan Vernal Pools, both of which are considered to be rare statewide, occur in isolated area. |

(a) http://www.ebparks.org/parks/martinez
(b) Source: 2005 Contra Costa County General Plan
(c) http://www.dfg.ca.gov/lands/wa/region3/pointedith.html
(d) http://www.ebparks.org/parks/big_break
(e) http://www.ebparks.org/files/Bay_Point_text.pdf
(f) http://www.nps.gov/jomu/index.htm

## 2. Description of District Management of the Resources in the Past or Present

CCWD does not deliver water to or manage any of the listed natural resources in the above Table 1-13, with the exception of Los Vaqueros Watershed. Description of CCWD management of Los Vaqueros Watershed is provided in the following section.

## 3. Recreational Areas within the Service Area

**Contra Loma Reservoir**
The Contra Loma Reservoir is a regional 771-acre park jointly managed by CCWD, Reclamation, and the East Bay Regional Park District (EBRPD). The reservoir currently allows the water related recreational activities of fishing, canoeing, limited swimming, and windsurfing. CCWD has constructed a separate swim lagoon facility to isolate body contact activities from this drinking water supply.

**Contra Costa Canal Regional Trail**
The Contra Costa Canal Regional Trail is a 12.82-mile greenbelt established along the Contra Costa Canal linking Concord, Pleasant Hill, Walnut Creek, and Pacheco. The trail was constructed by the EBRPD and is operated by the EBRPD under a lease agreement with CCWD. The trail has a paved pathway for walkers, joggers, and bicyclists, with room alongside for equestrians.

**Delta DeAnza Regional Trail**
The EBRPD also operates the Delta De Anza Regional Trail within CCWD's Service Area. The paved, multi-use hiking, bicycling and equestrian trail currently spans over 15 miles of its planned 25-mile length. When completed, it will generally follow the alignment of the Contra Costa Canal. The trail intersects Antioch's Mokelumne Trail and the Marsh Creek Regional Trail in Oakley. It connects the cities of Concord, Bay Point, Pittsburg, Antioch and Oakley and provides access to Contra Loma Regional Park (and Black Diamond Mines Regional Preserve) through Antioch Community Park.

**Los Vaqueros Watershed**
The Los Vaqueros watershed is located about 8 miles south of the city of Brentwood. It consists of 19,100 acres of protected open space surrounding the Los Vaqueros Reservoir, which holds 100,000 acre-feet of stored drinking water, with expansion to 160,000 acre-feet expected complete in 2012. The project's primary purpose is to improve water quality, but the watershed is also open year-round to the public for recreational uses. The watershed offers hiking and multi-use trails, picnic facilities, restrooms and three staging areas. Additional recreational facilities include a marina recreation area with fishing piers, rental boats, bait sales, a dock, fish cleaning stations, an interpretive center with museum displays, and a group picnic area.

## F. Operating Rules and Regulations

This section references CCWD's Code of Regulations related to water allocation and water transfer policies. Relevant sections of CCWD's Code of Regulations are included in Appendix C.

### 1. District's Operating Rules and Regulations

See Appendix C for the District Code of Regulations sections related to operating rules and regulations.

### 2. District's Agricultural Water Allocation Policy (DNA)

No Ag; this section does not apply to CCWD.

### 3. Official and Actual Lead Times Necessary for Water Orders and Shut Off (DNA)

No Ag; this section does not apply to CCWD.

### 4. District's Policies Regarding Surface and Subsurface Drainage from Farms (DNA)

No Ag; this section does not apply to CCWD.

### 5. Policies on Water Transfers by the District to its Customers

See Appendix C for District Code of Regulations, Section 5.04.080 and Chapter 5.70, which discuss policies on water transfers.

## G. Water Measurement, Pricing, and Billing

This section is the first of two sections addressing Section 1, part G of the CVPIA Criteria and refers to the devices and methods used by CCWD to determine customer water use.

Table 1-14 presents information on the types and levels of accuracy of CCWD's water meters and the frequency at which the meters are read.

Up to 0.5 percent of the customers, representing 0.19% of the delivered water within CCWD's service area, have unmetered water use. Water use for these customers is estimated annually by CCWD using a water use factor and the customer's irrigated area.

Water delivery measurement requirements are also contained in the "Long-Term Contract between the United States and Contra Costa Water District Providing for Project Water Service and for Facilities Repayment". In November 1994, CCWD submitted a Customer Measurement Report to comply with the contract requirements. Reclamation provided a letter in July 1995 indicating that CCWD's water measurement practices are in substantial compliance with the terms of the amendatory contract and BMPs. A copy of the Reclamation approval letter is provided as Appendix D.

CCWD flat rate (billed by acreage) customer accounts are primarily used for landscape irrigation and receive untreated water from the Contra Costa Canal. The domestic (potable) service to residences that have flat rate accounts is metered by CCWD or one of its wholesale customers. CCWD has taken the following actions with respect to the flat rate customers:

- CCWD does not allow any new flat rate customers.
- CCWD does not allow a flat rate service to continue when a residence changes ownership. The flat rate account is closed and all new services must be metered and billed volumetrically.
- CCWD has been proactive in metering accounts when technically or economically feasible and has been successful in obtaining grants from the Bureau of Reclamation to enhance efforts to bill all accounts by quantity.

In the year 2000, there were 476 flat rate customer accounts. There are currently 313 flat rate customer accounts, which amount to less than 0.19% (204 acre-feet) of the water delivered by CCWD. CCWD plans to meter an additional 25 accounts over the next two years. During the next five years, CCWD will continue to evaluate opportunities to reduce the number of remaining flat rate accounts.

**TABLE 1-14. WATER MEASUREMENT DEVICES FOR WATER DELIVERIES TO CCWD CUSTOMERS[(a)]**

| Type | Accuracy | Calibration (months) | Maintenance (months) |
|---|---|---|---|
| Venturi | ±2% | 6-12 | 6-12 |
| Impeller | ±2% | 6-12 | 6-12 |
| Propeller | ±2% | 6-12 | 6-12 |
| Tube Meters | ±2% | 6-12 | 6-12 |
| Disc Meter | ±2% | 6-12 | 6-12 |
| Compound Meter | ±2% | 6-12 | 6-12 |

(a) Calibration and maintenance procedures vary by meter size. See Table 1-15 and 1-16. If a line shutdown is performed, calibration and maintenance occur within three days after service is restored.

**Urban Customers**

This section provides information on the number of connections and measurement devices used to assess the quantity, timing, and location of water use in calendar year 2010.

A1. Total number of treated water connections 61,005

A2. Total number of untreated water connections 455

B. Total number of metered connections (treated and untreated water) 61,147

C. Total number of connections not billed by quantity 313

D. Percentage of water that was measured at customer delivery point 99.8
Calculated as one minus the total unmetered water deliveries, divided by the total canal deliveries.

E. Percentage of delivered water that was billed by quantity 95.2
Calculated as one minus the unaccounted water estimate, divided by the total water supply plus the change in Los Vaqueros Storage.

F. Tables 1-15 and 1-16 provide information on CCWD's measurement devices for both treated and untreated water customers.

| TABLE 1-15. MEASUREMENT DEVICE TABLE TREATED WATER FOR URBAN CUSTOMERS | | | | | |
|---|---|---|---|---|---|
| **Meter Size and Type** | **Number** | **Accuracy (+/-percentage)** | **Reading Frequency (Days)** | **Calibration Frequency (Months)** | **Maintenance Frequency (Months)** |
| 5/8-3/4" | 54,505 | 2 | 60 | As needed | As needed |
| 1" | 2,671 | 2 | 60 | As needed | As needed |
| 1 ½" | 1,430 | 2 | 60 | As needed | As needed |
| 2" | 1,075 | 2 | 60 | As needed | As needed |
| 3" | 123 | 2 | 60 | Annually | Annually |
| 4" | 265 | 2 | 60 | Annually | Annually |
| 6" | 540 | 2 | 60 | Annually | Annually |
| 8" | 239 | 2 | 60 | Annually | Annually |
| 10" | 16 | 2 | 60 | Annually | Annually |
| 12” | 5 | 2 | 60 | Annually | Annually |
| Compound[(a)] | 136 | 2 | 60 | As needed | As needed |
| Total | 61,005 | | | | |

(a) Compound meters include Dual 1-1/2” and Dual 2” meters.

| TABLE 1-16. MEASUREMENT DEVICE TABLE UNTREATED WATER | | | | | |
|---|---|---|---|---|---|
| **Meter Size and Type** | **Number** | **Accuracy (+/-percentage)** | **Reading Frequency (Days)** | **Calibration Frequency (Months)** | **Maintenance Frequency (Months)** |
| 1" | 21 | 2 | 30 | As needed | As needed |
| 2" | 43 | 2 | 30 | As needed | As needed |
| 3" | 17 | 2 | 30 | As needed | As needed |
| 4" | 21 | 2 | 30 | As needed | As needed |
| 6" | 22 | 2 | 30 | As needed | As needed |
| 8" | 5 | 2 | 30 | 6 | 6 |
| 10” | 1 | 2 | 30 | 6 | 6 |
| 12” | 2 | 2 | 30 | 6 | 6 |
| 14” | 1 | 2 | 30 | 6 | 6 |
| 18” | 1 | 2 | 30 | 6 | 6 |
| 20” | 3 | 2 | 30 | 6 | 6 |
| 24” | 2 | 2 | 30 | 6 | 6 |
| 30” | 2 | 2 | 30 | 6 | 6 |
| 48” | 2 | 2 | 30 | 6 | 6 |
| Total | 143 | | | | |

(a) This table does not include landscape estimated usage meters.

### 1. District’s Current Year Water Charges

See Appendix C for Sections 5.20.010 through 5.20.060 and Chapter 5.12 of CCWD's Code of Regulations, which discuss CCWD’s municipal and industrial water charges, including the rate structure, billing frequency, and assessments.

### 2. Annual Charges Collected from Customers

Annual charges include fixed and volumetric components. See Appendix C for Sections 5.20.010 through 5.20.060 and Chapter 5.12 of CCWD's Code of Regulations, which discuss CCWD's municipal and industrial water charges.

### 3. Water-Use Data Accounting Procedures

Untreated water billing history is available in hard copy from 1982. Five years of billing history for untreated (monthly) and treated water customers (bimonthly) is maintained in CCWD's customer service database. This information is available to customers upon request. The bimonthly billings of the CCWD's treated water customers provide comparative consumption figures (in gallons per day) for the current period and the same period in the prior year.

## H. Water Shortage Allocation Policies

CCWD's primary supply is a contract with Reclamation for CVP water. The contract provides for a maximum CVP delivery of 195,000 af/yr, with a reduction in deliveries during water shortages including regulatory restrictions and drought. The M&I Water Shortage Policy defines the reliability of CCWD's CVP supply and was developed by Reclamation to establish CVP water supply levels that would sustain urban areas during severe or continuing droughts. The M&I Water Shortage policy provides for a minimum allocation of 75 percent of adjusted historical use until irrigation allocations fall below 25 percent. In addition, Reclamation will deliver CVP water to CCWD at not less than a public health and safety water supply level, provided CVP water is available, if the Governor declares an emergency due to water shortage or if an emergency exists due to water shortage. CCWD's minimum public health and safety level is 65% of historical use. The Long-Term Renewal Contract included a review of CCWD's historical use and determined for the purpose of the Municipal & Industrial (M&I) Water Shortage Policy implementation that CCWD's historical use was 170,000 acre-feet (Exhibit B of the contract).

This section describes CCWD's water shortage allocation policies for its retail and municipal customers including wasteful use prohibitions and enforcement methods.

### 1. Current Year Water Shortage Policies

The Urban Water Management Planning Act was amended in 1991 to require urban water suppliers to have an Urban Water Shortage Contingency Plan (Shortage Plan) as part of the Urban Water Management Plan. Appendix E contains CCWD's most recent Shortage Plan, adopted by CCWD in June 2011. The Shortage Plan addresses the short-term or emergency management issues that occur during a drought or other water shortage condition. To manage a water supply shortfall condition, four demand reduction stages have been defined. The Shortage Plan will help CCWD anticipate drought conditions and to mitigate impacts including a supply shortfall and financial hardships on both the community and CCWD. The Shortage Plan also contains CCWD's adopted drought emergency regulations establishing the 2009 Drought Management Program adopted by the Board of Directors in response to the 2009 drought. The

ordinance is included in Appendix E as an example of a plan CCWD might implement in a future drought condition.

**2. Policies that Address Wasteful Use of Water and Enforcement Methods**

See Appendix F - Resolution No. 93-23 - Water Waste Prohibitions within the Area Served by the District. See also CCWD Code of Regulations Section 5.44.010 for general policies regarding the practice of water waste (Appendix C).

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# SECTION 2: Inventory of Water Resources

## A. Surface Water Supply

CCWD is almost entirely dependent on the Delta for its water supply. CCWD's primary source is the United States Bureau of Reclamation's (Reclamation) Central Valley Project (CVP). CVP water consists of unregulated and regulated flows from storage releases from Shasta, Folsom, and Clair Engle reservoirs into the Sacramento River. Other CCWD sources include the San Joaquin River, Mallard Slough, recycled water, a minor amount of local well water, and water transfers.

### DISTRICT SUPPLIES

#### ***Central Valley Project Supply***

CCWD's long-term CVP contract was renewed in May 2005 and has a term of 40 years (contract No. 175r-3401a-LTR1). The contract with the Reclamation provides for a maximum delivery of 195,000 af/yr from the CVP, with a reduction in deliveries during water shortages including regulatory restrictions and drought. The M&I Water Shortage Policy defines the reliability of CCWD's CVP supply and was developed by Reclamation to (1) define water shortage terms and conditions applicable to all CVP M&I contractors, as appropriate; (2) establish CVP water supply levels that would sustain urban areas during droughts, and during severe or continuing droughts would assist the M&I contractors in their efforts to protect public health and safety; and (3) provide information to M&I contractors for development of drought contingency plans. The current M&I Water Shortage Policy provides for a minimum shortage allocation of 75 percent of adjusted historical use until irrigation allocations fall below 25 percent. In addition, Reclamation will deliver CVP water to CCWD at not less than a public health and safety water supply level, provided CVP water is available, if the Governor declares an emergency due to water shortage or if an emergency exists due to water shortage. CCWD's CVP allocation during a minimum public health and safety condition shall be sufficient to satisfy public health and safety requirements and was determined by CCWD to be 65% of historical use.

#### ***Los Vaqueros Water Rights***

CCWD obtained additional water rights for surplus Delta flows as part of the Los Vaqueros Project. Under Water Rights Permit No. 20749, up to 95,980 acre-feet may be diverted for storage in Los Vaqueros between November 1 of each year and June 30 of the succeeding year. The Los Vaqueros Water Right supply can be used in lieu of the CVP supply. When the Los Vaqueros water right is used, CVP supplies are reduced by an identical amount. Combined deliveries of Los Vaqueros Water Rights water and CVP water are limited to 195,000 acre-feet/year. Little or no Los Vaqueros Water Rights water is available for diversion to storage in dry years.

***Mallard Slough Supply***

CCWD has additional water rights at Mallard Slough for a maximum diversion of up to 26,780 af/yr of Delta water. Diversions from Mallard Slough are unreliable due to frequently poor water quality in the San Joaquin River at this point of diversion. Water quality conditions have restricted diversions from Mallard Slough to approximately 3,100 acre-feet per year (on average from 1968 to present) with none available in dry years. When Mallard Slough supplies are used, CVP diversions are reduced by an equivalent amount.

***East Contra Costa Irrigation District***

CCWD entered into an agreement with the East Contra Costa Irrigation District (ECCID) in 2000 to purchase surplus irrigation water for M&I purposes within ECCID's service area. Only a portion of ECCID is within the existing CCWD service area (estimated current demand of 6,000 af/yr). The current ECCID agreement allows CCWD to purchase up to 8,200 af/yr for service in the overlap area with ECCID. The agreement also includes an option for CCWD to purchase up to 4,000 af/yr of groundwater (by exchanges) when the CVP is in a shortage situation. This exchange water can be used anywhere within CCWD's service area.

**NON-DISTRICT SUPPLIES**

***City of Brentwood***

The City of Brentwood has an agreement with ECCID to receive up to 14,800 af/yr of surplus irrigation water to use for M&I purposes within Brentwood's city limits. CCWD wheels water for City of Brentwood customers located inside and outside of the CCWD service area.

***City of Antioch***

The City of Antioch has rights to water from the San Joaquin River and can currently divert water at a rate of up to 35 cfs. Actual diversions from the river are limited due to poor water quality that often exists in the San Joaquin River. When supplies from the San Joaquin are unavailable, Antioch relies on untreated water deliveries from CCWD to meet remaining customer demand.

***Recycled Water***

Water recycling is a component of CCWD's long-term sustainable water supply strategy and CCWD cooperates with local wastewater agencies proposing to provide recycled water for appropriate designated uses. Over 10,000 acre-feet per year, or approximately 10% of CCWD's total water deliveries, was recycled wastewater used within CCWD's service area. The four wastewater treatment plants within CCWD's service area comprise the total potential sources of recycled water; the Central Contra Costa Sanitary District (CCCSD), Mountain View Sanitary District (MVSD), Delta Diablo Sanitation District (DDSD), and Ironhouse Sanitary District (ISD). CCWD has agreements with CCCSD and DDSD regarding specific projects that provide recycled water supplies for industrial uses and landscape irrigation.

In November 1995, CCCSD and CCWD reached a project specific agreement for CCCSD to purvey recycled water to areas of Concord and Pleasant Hill. Sixty-one customers were identified in the agreement as potential recycled water users. CCCSD purveys about 200 million gallons per year of recycled water for landscape irrigation to over 30 of these CCWD customers which include golf courses, school ball fields, parks and medians, a concrete recycling and batch plant, a woodchip and topsoil farm, a truck washing facility, and the Contra Costa County Animal Shelter where recycled water is used outside for both landscape irrigation and inside the buildings for kennel wash-down. The animal shelter is the first dual plumbed facility in the CCWD service area. Average day demand for recycled water identified in the project specific agreement is approximately 1,680 af/yr (1.5 mgd) with max day demands of 3,135 af/yr (2.8 mgd). CCCSD also uses almost 400 million gallons per year (1,225 af/yr or 1 mgd) of recycled water internally at its own facilities for process water at its wastewater treatment plant and for landscape irrigation. In 2004, CCCSD and CCWD established a maintenance services agreement under which CCWD provides maintenance and repair services for CCCSD's recycled water pipeline distribution system.

In 2000, DDSD and CCWD reached an agreement for DDSD to purvey recycled water to the Delta Energy Center and the Los Medanos Energy Center (DEC/LMEC). Tertiary-treated wastewater from DDSD is used for turbine cooling and make-up water in cooling towers at the energy facilities. Additional treatment of the tertiary treated wastewater, to comply with the requirements of the Department of Public Health, is done onsite with a 12.8 mgd DDSD reclamation plant. CCWD provides DEC/LMEC with up to a 10 mgd backup water supply and water for steam production and domestic uses. The recycled water facilities were operational by June 2001, and the energy centers were operational by 2002. DDSD has recently completed a filter loading evaluation and is seeking approval to increase the permitted capacity of this facility to 16.4 mgd. DDSD also provides recycled water to a number of irrigation customers and the Dow wetlands as part of the DEC/LMEC agreement. The total demand for these additional customers is approximately 80 af/yr.

In 2004, DDSD and CCWD reached a General Agreement allowing DDSD to provide recycled water to additional users who were not included in the April 2000 agreement. DDSD and the City of Pittsburg completed a facilities plan in January 2005, which focused on developing additional recycled water facilities to provide irrigation supply for municipal parks and the Delta View Golf Course. In 2006, DDSD completed a facilities plan for the City of Antioch that proposed extending recycled water service to provide landscape irrigation to sites in Antioch, including the Lone Tree Golf Course and at parks, playing fields, medians and other green spaces in Antioch. The project was dedicated in 2010 and is expected to be operational in 2011. In the 5 years from 2005 to 2009 DDSD supplied an average of 7,400 af/yr (6.6 mgd) of recycled water deliveries to DEC/LMEC and for irrigation to local public parks and median landscapes in the City of Pittsburg.

A description of each of CCWD's water supply sources is also provided in Tables 1-4 and 1-5 in Section 1.A.4.

## 1. Amount of Surface Water Delivered to the District by each of the District's Sources

The amount of surface water diverted by CCWD by each of the CCWD sources in 2010 is displayed in Table 2-1. Information on water delivered to CCWD for the past 10 years is presented in Table 2-2.

**TABLE 2-1. 2010 SURFACE WATER SUPPLY**

| | DISTRICT SUPPLY | | | | | NON-DISTRICT SUPPLY | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2010 Month | Federal Urban Water (CVP) (AF) | Federal Agric. Water (AF) | Los Vaqueros Water Rights (AF) | Mallard Water Rights (AF) | ECCID[(a)] (AF) | City of Brentwood (AF) | City of Antioch (AF) | Recycled Water[(b)] (AF) | Total (AF) |
| January | 2,768 | 0 | 0 | 0 | 211 | 72 | 182 | 557 | 3,790 |
| February | 7,442 | 0 | 0 | 0 | 226 | 49 | 814 | 536 | 9,067 |
| March | 8,939 | 0 | 0 | 0 | 366 | 98 | 1,078 | 600 | 11,081 |
| April | 0 | 0 | 0 | 0 | 0 | 0 | 1,293 | 467 | 1,760 |
| May | 6,165 | 0 | 0 | 744 | 756 | 707 | 1,327 | 421 | 10,120 |
| June | 11,724 | 0 | 0 | 992 | 1,987 | 1,111 | 1,218 | 502 | 17,534 |
| July | 15,204 | 0 | 0 | 0 | 1,296 | 1,083 | 863 | 706 | 19,152 |
| August | 8,531 | 0 | 0 | 0 | 1,105 | 1,049 | 337 | 646 | 11,668 |
| September | 205 | 0 | 0 | 0 | 324 | 777 | 0 | 637 | 1,943 |
| October | 1,450 | 0 | 0 | 0 | 973 | 529 | 0 | 696 | 3,648 |
| November | 4,077 | 0 | 0 | 0 | 271 | 182 | 0 | 509 | 5,039 |
| December | 606 | 0 | 0 | 0 | 236 | 104 | 505 | 473 | 1,924 |
| TOTAL | 67,111 | 0 | 0 | 1,736 | 7,751 | 5,761 | 7,617 | 6,750 | 96,726 |

(a) Includes CCWD/ECCID and City of Brentwood inside CCWD
(b) Does not include in-plant or wildlife habitat enhancement and wetland uses.
(c) Does not include groundwater use.

**TABLE 2-2. ANNUAL WATER QUANTITIES DIVERTED UNDER EACH RIGHT OR CONTRACT (PAST 10 YEARS)**

| | DISTRICT | | | | | NON–DISTRICT | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Federal Urban Water (CVP) (AF) | Federal Agricultural Water (AF) | Los Vaqueros Water Rights (AF) | Mallard Water Rights (AF) | ECCID [(a)] (AF) | City of Brentwood (AF) | City of Antioch (AF) | Recycled Water[(b)] (AF) | Total (AF) |
| 2001 | 91,808 | 219 | 11,861 | 499 | 3,233 | 2,664 | 6,115 | 1,252 | 117,651 |
| 2002 | 82,050 | 185 | 25,586 | 2,357 | 5,104 | 2,852 | 7,027 | 8,216 | 133,377 |
| 2003 | 81,513 | 64 | 40,073 | 2,994 | 5,547 | 3,131 | 8,424 | 7,809 | 149,555 |
| 2004 | 93,571 | 54 | 18,808 | 1,777 | 6,446 | 3,667 | 5,541 | 7,600 | 137,464 |
| 2005 | 82,679 | 0 | 30,796 | 5,033 | 6,516 | 3,052 | 7,966 | 8,270 | 144,312 |
| 2006 | 91,971 | 0 | 20,448 | 1,788 | 3,974 | 3,680 | 6,731 | 7,706 | 136,298 |
| 2007 | 90,886 | 0 | 5,116 | 0 | 8,721 | 6,486 | 5,930 | 8,446 | 125,585 |
| 2008 | 92,815 | 0 | 18,878 | 0 | 10,654 | 6,797 | 4,184 | 7,763 | 141,091 |
| 2009 | 90,773 | 0 | 4,242 | 576 | 11,739 | 6,114 | 5,813 | 7,917 | 127,174 |
| 2010 | 67,111 | 0 | 0 | 1,736 | 7,751 | 5,761 | 7,617 | 6,750 | 96,726 |
| Total | 865,177 | 522 | 175,808 | 16,760 | 69,685 | 44,204 | 65,346 | 71,729 | 1,309,233 |
| Average | 86,518 | 52 | 17,581 | 1,676 | 6,969 | 4,420 | 6,535 | 7,173 | 130,923 |

(a) Includes CCWD/ECCID overlap and City of Brentwood inside CCWD.
(b) Does not include in-plant or wildlife habitat enhancement and wetland uses.

## B. Ground Water Supply

This section describes the general characteristics of the groundwater basins that underlie CCWD's service area. CCWD does not overlie a usable groundwater basin, as locations with groundwater are small and generally unconnected. CCWD relies upon surface water for its supply. Historical evaluations of local groundwater supplies show them to be marginal based on both quality and availability. Local groundwater resources have low to moderate potential for additional development. As a result of the geologic formations and proximity to the sea, groundwater resources are often poor in terms of M&I water quality requirements and low in yield. Currently, the City of Brentwood, ECCID, DWD, GSWC, and the City of Pittsburg utilize groundwater wells to supplement surface supplies and to increase reliability. The estimated total use of groundwater within CCWD boundaries in 2010 is 3,000 AF.

Additional information on local groundwater resources can be found in the following sources:

California Department of Water Resources. California's Ground Water. Bulletin No. 118-75. (September 1975).

Camp, Dresser and McKee Inc.; Kenneth R. Henneman. Ground Water Assessment Study. (October 1980).

Kenneth R. Henneman, City of Brentwood. Initial Ground Water Evaluation. (October 1990).

Luhdorff & Scalmanini. Investigation of Ground-Water Resources in the East Contra Costa Area. (March 1999)

Luhdorff & Scalmanini Consulting Engineers, Inc. Diablo Water District Groundwater Management Plan for AB 3030. (May 2007)

Tolman, C.F.; B.C. Hyde; C. Killingworth. Stanford University. Ground Water Supply and Saline Contamination of Pittsburg and Adjacent Area, Contra Costa County, California. (February 1931).

U.S. Bureau of Reclamation. Factual Report: Contra Costa Water District. (November 1950).

**1. Acre-foot Amounts of Groundwater Pumped and Delivered by the District**

CCWD does not manage groundwater, but estimates total use within CCWD boundaries at approximately 3,000 af/yr.

## 2. Groundwater Basin(s) that Underlies the Service Area

Based on basin characteristics summarized in this section, local use of groundwater resources is low and not expected to significantly increase. The CCWD Treated Water Service Area overlies the Clayton Valley Groundwater Basin. The Bay Point/Pittsburg area overlies the Pittsburg Plain Groundwater Basin, while the Antioch, Brentwood and Oakley area overlies a portion of the Tracy Groundwater Subbasin, within the San Joaquin Valley Groundwater Basin.

## 3. Contractor Operated Wells and Managed Groundwater Recharge Areas

CCWD does not currently operate any groundwater recharge areas. The only wells owned and operated by CCWD are immediately adjacent to Mallard Reservoir. The Mallard Wells were installed in 1977-1978 to provide an alternative source of water during drought periods. The wells do not augment CCWD's long-term water supplies and only have limited use (less than 1,000 af/yr) as an alternative short-term supply. Table 2-3 lists information about the CCWD wells.

**TABLE 2-3. CCWD OPERATED WELLS**

| Name (State ID #) | (T, R & S)[(a)] | Pumping capacity | Spring depth[(b)] (ft) | Fall depth [(b)] (ft) |
|---|---|---|---|---|
| RD-1 (#36419) | T2N, R2W, S14 | 500 gpm | 13.8 | 34.0 |
| RD-4 (#36423) | T2N, R2W, S14 | 650 gpm | 20.0 | 26.0 |
| RD-7 (#36427) | T2N, R2W, S14 | 650 gpm | 15.0 | 30.2 |
| RD-8 (#36424) | T2N, R2W, S14 | 300 gpm | 6.3 | 21.0 |

(a) Township, Range, and Section.
(b) The well depths are static water levels (i.e. the pumps are off) for spring and fall months for the period from July 1992 to July 1993.

## 4. Description of Conjunctive Use of Surface and Groundwater

CCWD does not currently have a conjunctive use program.

## 5. Groundwater Management Plan

The groundwater basins underlying the CCWD Service Area are not adjudicated and are not reportedly overdrafted. A description of the groundwater basin for the Eastern portion of the service area is contained in the "Investigation of Groundwater Resources in East Contra Costa County" (March 1999).

DWD completed a Groundwater Management Plan in May 2007, according to the procedures outlined in the Groundwater Management Planning Act [Sections 10750-10546 of the California Water Code AB 3030]. The purpose of the DWD Groundwater Management Plan is to provide a

management framework for maintaining a high quality, reliable, and sustainable supply of groundwater from the Tracy Groundwater Subbasin within DWD's sphere of influence (May 2007).

**6. Groundwater Banking Plan**

There is no groundwater banking plan.

## C. Other Water Supplies

**1. "Other" water used as part of the water supply**

This information is provided in Tables 2-1 and 2-2 in Section 2.A.

## D. Source Water Quality Monitoring Practices

CCWD's mission is to "strategically provide a reliable supply of high-quality water at the lowest cost possible, in an environmentally responsible manner." CCWD obtains its water supply exclusively from the Sacramento-San Joaquin Delta and serves treated and untreated water to approximately 500,000 people in central and eastern Contra Costa County. CCWD's Board of Directors (Board) has adopted water quality objectives in order to keep constituents of major health concern at the lowest levels that are technically feasible and provide its customers with a consistent supply of aesthetically-pleasing, high-quality water. Water quality in the Delta at CCWD's existing intakes currently does not meet CCWD's Board-adopted water quality objectives for extended periods each year, requiring CCWD to use the higher-quality water stored in Los Vaqueros Reservoir to blend with the directly diverted Delta water to meet CCWD's water quality objectives. However, even with the blending benefits of the Los Vaqueros Reservoir, CCWD expects to not meet its water quality objectives during extended periods of high salinity in the Delta and expects these periods to occur more frequently in the future as statewide demands on the Delta increase. In addition, Federal and State drinking water regulations are becoming more stringent. To ensure that regulatory requirements and its water quality objectives can be met now and in the future, CCWD must take action to improve the quality of both its source and delivered water. Improving Delta water quality is the link to protecting people, the environment, and fish.

CCWD is implementing a comprehensive water quality strategy to protect and improve source and treated water quality for its customers. CCWD's multi-pronged approach includes seeking improved water quality sources, reducing impacts of Delta agricultural drainage on source water quality, participating in collaborative research on advanced water treatment of Delta water, and supporting regulatory and legislative initiatives for improving drinking water quality and source water protection.

## 1. Potable Water Quality (Urban only)

Each year, CCWD completes an Annual Water Quality Report, in accordance with the California Department of Health Services and U.S. Environmental Protection Agency requirements. A copy of the 2010 Annual Water Quality Report showing current water quality sampling results is provided in Appendix G.

## 2. Agricultural Districts (DNA)

This section does not apply to CCWD.

## 3. Water Quality Testing Program and Role of Each Participant in the Program

CCWD's Water Quality Testing Program is discussed in the Annual Water Quality Report. The program includes testing for microbial contaminants, inorganic contaminants, pesticides, organic chemical contaminants, and radioactive contaminants. Results are included in the Annual Water Quality Report (Appendix G).

## 4. Current Year Water Quality Monitoring Programs

Table 2-4 describes CCWD's surface water quality monitoring programs. CCWD has a regular monitoring program to measure water quality of all its untreated water sources, including stored water. Additionally, CCWD contributes to the State Department of Water Resources program entitled the "Municipal Water Quality Investigations Program (MWQI)" that monitors the Sacramento-San Joaquin Delta water quality. In addition to monitoring water quality in the Delta, the MWQI program conducts studies and activities regarding source water improvement and management.

| TABLE 2-4. CCWD SOURCE WATER QUALITY MONITORING PROGRAMS | | |
|---|---|---|
| **Program Description** | **Sampling Frequency** | **Analysis Performed** |
| Field Investigations: District personnel routinely request field investigations to help identify sources of water that contain contaminants and to assist in facility maintenance. Additionally, the field investigations program responds to customer complaints or inquiries. Field investigations, involving the collection and analysis of one or more samples, are conducted and remedial action, if necessary, is taken (i.e., main flushing, treatment plant operational adjustments, etc.) | As required | As required |
| Flavor Profile Analysis: Samples are collected from the representative sites in the untreated waters, plant processes, and distribution system to monitor the aesthetic quality of the water. This information is used to modify plant processes during taste and odor episodes and investigate the validity of taste and odor complaints. | Mallard Reservoir Weekly | Taste and Odor |
| Pathogens and Indicator Organisms: Microbiological analyses and specific tests for the presence of *Giardia lamblia* and *Cryptosporidium* are conducted on CCWD's untreated water to determine the levels of these organisms in the water. | Monthly | Microbial, *Giardia lamblia* and *Cryptosporidium* analyses |
| Mallard Slough: This supplemental untreated water source for the CCWD Bollman water treatment plant is monitored, for general mineral and microbiological parameters. Designed to produce a historical database showing changes and trends in the water quality, the information is used by CCWD for its TWSA and industrial retailers. | Twice weekly when plant station running or once monthly when not. | General mineral and microbiological parameters |
| Phytoplankton: Samples are collected from representative source water and untreated water reservoir sites to monitor phytoplankton population densities and diversity. The information is necessary for treatment plant modifications and taste and odor control. | Weekly | Phytoplankton analysis |
| Untreated Water Quarterly: The untreated water supply is monitored at major entry points (river intakes, wellheads), at storage facilities, and at representative locations along the untreated water transmission facilities. Information is used by operating personnel and to meet regulatory requirements. | Quarterly | Samples tested for all primary and secondary standard constituents per Title 22 |
| Rock Slough and Old River: The untreated water supply is monitored at the District's two main diversion facilities. Information is used by operating personnel and municipal and industrial retailers and to meet regulatory requirements. The untreated water is monitored for general mineral and bacteriology. Program is designed to produce a historical database showing changes and trends in the water quality. | Monthly, Daily | General mineral and bacteriology |
| Field Instrumentation: On-line filed instrumentation is being installed, upgraded, and standardized at the source diversion points (Rock Slough, Old River, Mallard Slough, and Los Vaqueros) to gather data useful in day-to-day operation of the system. | Continuous | Dissolved oxygen, electrical conductivity, turbidity, pH, and temperature |

## E. Water Uses within the District

This section describes municipal and industrial water uses within CCWD's service area. CVPIA sections related to groundwater recharge, management, and banking and transfers and exchanges were not included as these sections do not apply to CCWD.

### 1. Agricultural (DNA)

This section does not apply to CCWD.

### 2. Irrigation Systems Used for Each Crop (DNA)

This section does not apply to CCWD.

### 3. Urban

Tables 2-5 and 2-6 present the treated and untreated water use, by customer type, within CCWD's service area. Table 2-5 shows CCWD's treated water use, delivered to individual customers in Concord, Clayton, and parts of Pleasant Hill, Walnut Creek and Martinez. In addition it shows water treated by CCWD and delivered to the Diablo Water District, Antioch, Golden State Water Company (Bay Point) and Brentwood who then distribute it to their customers.

| TABLE 2-5. TREATED WATER USE BY CUSTOMER TYPE IN 2010 | | |
|---|---|---|
| **Customer Type** | **Number of Connections** | **2010 use (AF)** |
| Single-family | 53,068 | 16,569 |
| Multi-family | 2,510 | 5,116 |
| Commercial | 2,744 | 3,430 |
| Industrial | 4 | 78 |
| Irrigation[(a)] | 909 | 2,622 |
| Private Fire Protection System | 1,067 | 0 |
| Temporary Service | 77 | 14 |
| Service to Public Authorities | 626 | 865 |
| Wholesale Municipal [(b)] | 6 | 8,389 |
| Brentwood Water Treatment Plant | NA[(c)] | 5,349 |
| *Sub-Total* | | 42,432 |
| Treated Unaccounted for Water | | 2,693 |
| Total | 61,011 | 45,125 |

(a) Irrigation includes residential, commercial and industrial, and public authority landscape irrigation service.
(b) Wholesale Municipal includes Antioch Treated Water deliveries (0 AF), Brentwood supplies from Randall-Bold (1,799 AF), DWD (4,542 AF) and Golden State Water Company Treated Water deliveries (2,048 AF).
(c) CCWD wheels ECCID water to the Brentwood Water Treatment Plant, which is then delivered to customers outside of CCWD's service area. Information on number of connections for Non-District usage is not available.

Table 2-6 shows untreated water delivered by CCWD to industrial, municipal and other customers. The municipal water supplies delivered to Antioch, Pittsburg and Martinez are treated by those cities and delivered to their customers.

**TABLE 2-6. UNTREATED WATER USE BY CUSTOMER TYPE IN 2010**

| Customer Type | Number of Connections | 2010 use (AF) |
|---|---|---|
| **District Use** | | |
| Industrial | 22 | 27,482 |
| Wholesale Municipal[a] | 7 | 20,621 |
| Landscape[b] | 383 | 1,185 |
| Temporary | 3 | 109 |
| Agricultural[c] | 22 | 22 |
| *District Sub-Total* | 437 | 49,419 |
| **Non-District Use** | | |
| Groundwater[e] | NA[d] | 3,000 |
| Recycled Water[f] | NA[d] | 6,750 |
| City of Antioch Surface Water[g] | NA[d] | 7,617 |
| *Non-District Subtotal* | NA[d] | 17,367 |
| Untreated Unaccounted for Water | | 1,985 |
| TOTAL | 437 | 68,771 |

(a) Includes the cities of Antioch (9,421 AF), Pittsburg (6,979 AF), and Martinez (4,221 AF) who treat and deliver to their customers.
(b) Includes Landscape Metered and Flat Rate service connections.
(c) CCWD agricultural customers receive additional water supplies from alternative sources.
(d) Information on number of connections for Non-District usage is not available.
(e) CCWD does not manage groundwater, but estimates total use within CCWD boundaries at approximately 3,000 af/yr.
(f) Does not include recycled water use within CCCSD's wastewater treatment facility or use for wildlife habitat enhancement and wetlands.
(g) City of Antioch diverts its own supply (when water quality allows use), treats and delivers to their customers.

### 4. Urban Wastewater Collection and Treatment Systems Serving the District Service Area

Table 2-7 lists the wastewater collection and treatment systems serving the CCWD service area. Included in the table is 2010 information on the level of treatment, quantity of water treated, and place of disposal for the treated water.

**TABLE 2-7. URBAN WASTEWATER COLLECTION/TREATMENT SYSTEMS SERVING THE SERVICE AREA**

| Wastewater Agency | Treatment Level (1,2,3) | Plant Capacity (AFY) | Average Flow (AFY) | Meets Recycled Water Standard (AFY) | Non Recycled Disposal to: |
|---|---|---|---|---|---|
| Ironhouse Sanitary District (ISD) | 1 | 3,000[a] | 2,900 | 2,900 | Evaporation and Percolation Areas[g] |
| Delta Diablo Sanitation District | 2 & 3 [b] | 18,500 | 15,900 | 14,300 [b] | New York Slough |
| Central Contra Costa Sanitary District [c] | 2 & 3 [d] | 60,300[e] | 43,800 | 4,300 | Suisun Bay |
| Mt. View Sanitary District | 2 | 3,600[f] | 2,200 | | Peyton Slough; wetlands |
| TOTAL | | 85,400 | 68,400 | 21,500 | |

(a) Planned 2011 improvements to 4,800 AFY (4.3 mgd) and ultimate capacity of 9,600 AFY (8.6 mgd)

(b) Capability up to l2.8 mgd (14,300 AFY) exists for level 3 treatment but is not fully utilized.

(c) Sewage flows tributary to the CCCSD's wastewater treatment plant include CCWD's TWSA and a portion of EBMUD's service area.

(d) CCCSD Recycled Water Plant was originally designed for 30 MGD of tertiary capacity. Current permitted capacity is 3.8 MGD.

(e) Based on dry weather permitted discharge capacity of 53.8 mgd.

(f) Based on dry weather permitted discharge capacity of 3.2 mgd.

(g) ISD is constructing a San Joaquin River outfall that will discharge into the Delta near Jersey Island.

### 5. Groundwater Recharge/Management/Banking

CCWD does not manage groundwater.

### 6. Transfers and Exchanges

There were no transfers or exchanges into or out of CCWD during the current year.

### 7. Trades, wheeling, wet/dry year exchanges or other transactions

In the past 25 years, water transfers have been employed to deal with supply emergency situations. In 1991, CCWD exchanged 6,717 acre-feet of water from the State Water Bank for Central Valley Project water transferred from the Glenn-Colusa Irrigation District. In 1992, CCWD purchased 10,000 acre-feet from the State Water Bank to supplement its CVP supply.

In response to high salinity levels during the drought of 1977, EBMUD transported Middle River water through one of its Mokelumne Aqueducts to CCWD's Rock Slough Intake for purposes of improving water quality.

CCWD entered into short-term water transfer agreements in 2000 (3,400 acre-feet), 2002 (5,000 acre-feet), and 2003 (5,000 acre-feet) with Western Water Company and the Yuba County Water Agency. The goal of the pilot water transfer program was to establish relationships with sellers, work through the various institutional issues associated with transfers before a serious water shortage occurs, and to develop water transfer agreements that would allow CCWD to purchase water in shortage years.

CCWD's agreement with ECCID also includes an option for CCWD to purchase up to 4,000 acre-feet of groundwater per year, by exchange with ECCID surface water, when the CVP is in shortage. The groundwater exchange was utilized during the 2007-2009 drought.

In 2010, CCWD, wheeled and treated for the City of Brentwood approximately 7,500 acre-feet of water that the City of Brentwood purchased from ECCID for service in the City of Brentwood for municipal use.

**TABLE 2-8. SUMMARY OF 2010 WHEELING**

| From Whom | To Whom | AF | Use |
|---|---|---|---|
| East Contra Costa Irrigation District | City of Brentwood | 7,513 | Municipal |

### 8. Any Other Uses of Water

None.

## F. Outflow from the District (Agricultural only) (DNA)

This section does not apply to CCWD.

## G. Water Accounting (Inventory)

### 1. Overall Water Inventory

The 2010 District Water Inventory is presented in Table 2-9.

| TABLE 2-9. 2010 DISTRICT WATER INVENTORY (AF) | |
|---|---|
| Water Supply (Untreated Water)[(a)] | 82,360 |
| Environmental Consumptive Use | 0 |
| Groundwater Recharge | 0 |
| Water Exchanges or Transfers | 0 |
| Flushing/Fire | -2 |
| Distribution System Leaks & Breaks | See footnote (b). |
| Municipal Customer Sales[(c)] | -25,970 |
| Untreated Retail Sales (Industrial, Irrigation, Temporary) | -28,776 |
| Net use of Los Vaqueros Storage[(d)] | 14,172 |
| Non-Urban (Agricultural) Deliveries | -22 |
| Water Supply Available for TWSA Sale | 41,762 |
| | |
| 2010 | |
| Actual M&I Treated Water Sales (From District Records) | 37,084 |
| Inside Use (TWSA) (Feb use x12)[(e)] | 16,296 |
| Landscape/Outside Use (TWSA) | 20,787 |
| | |
| *Unaccounted for Water* | *4,678* |

(a) Includes water supplies from CVP, Los Vaqueros and Mallard Slough water rights, and ECCID (CCWD and City of Brentwood).
(b) Canal and treated water distribution losses are included in Unaccounted for Water. Does not include Los Vaqueros evaporative losses.
(c) Includes water wheeled for City of Brentwood and water served to DWD from Randall-Bold WTP.
(d) Represents net water supply stored in Los Vaqueros Reservoir and released for use in 2010.
(e) Inside Use is defined as the water billed as M&I during the month of February multiplied by 12. Outside water use during February is assumed to be minimal and provides an estimate of water use inside homes and businesses.

## H. Assess Quantifiable Objectives (DNA)

There are no Quantifiable Objectives that apply to CCWD through the CALFED Water Use Efficiency Program.

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# SECTION 3: Best Management Practices (BMPs) for Agricultural Contractors

## This Section does not apply to CCWD

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# SECTION 4: Best Management Practices for Urban Contractors

CCWD is a signatory to the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) developed by the California Urban Water Conservation Council (CUWCC). The District implements the Best Management Practices (BMPs), as prescribed in the MOU and as required in the Standard Criteria for Evaluating Water Management Plans.

CCWD submits annual reports to the CUWCC in accordance with the requirements of the MOU. CCWD's annual reports for FY09-FY10 are included in Appendix H. In addition, the CUWCC Ten-Year BMP Coverage Report is included in Appendix H to demonstrate the District's successful ten-year BMP implementation and compliance with the MOU.

Table 4-4 is included at the end of this section to summarize the water conservation programs that have been implemented since 1988. The following sections provide an overview of the District's Water Conservation Program.

## A. Program Description

CCWD's Water Conservation Program fulfills the mission of the District by reducing long-term water demand in an environmentally responsible and cost effective manner. The long-term water savings goal for the Conservation Program is to reduce demand by five percent of what it would be in 2050 without District-implemented conservation measures. This equates to approximately 10,000 acre-feet in the year 2050. This amount is in addition to expected conservation savings from natural fixture replacement and other non-District conservation activities. CCWD is on track to meet this goal.

CCWD offers water conservation programs throughout its retail and wholesale water service area. Activities in the retail service area are included in the Retail BMP Report, and activities in the wholesale service area are included in the Wholesale BMP Report. The programs listed below are offered by CCWD to both retail and wholesale service area customers.

Since CCWD started its Water Conservation Program in 1988, the program has evolved considerably. In its early years, the program consisted of single-family surveys and showerhead distribution. Starting in 1994, the District provided rebates for Ultra Low Flow Toilets (ULFTs) which flush at 1.6 gallons, and then in 2007, the program was replaced with a High Efficiency Toilet (HET) Rebate Program for toilets that flush 1.28 gallons. In 2000, the District initiated a successful High Efficiency Clothes Washer Rebate program. The Conservation Program now includes surveys for all customer classes and incentive programs for numerous devices. Both surveys and rebate programs have changed over the years to increase the effectiveness of the program and the sustainability of water savings. The Water Conservation Program is comprised of several key elements, each of which targets a specific customer base and satisfies the requirements of specific BMPs. The following sections summarizes each of the key program elements.

## B. Foundational BMPs

### 1. Utility Operations Programs

1.1. Operations Practices

A.1) Conservation Coordinator

**The District meets this requirement**. CCWD has the following full-time conservation staff:

- Conservation Supervisor (1)
- Conservation Specialists (3)
- Conservation Technician (1)
- Conservation Clerk (1)

Over the next five years, CCWD expects to maintain existing staff levels.

*Name:* Chris Dundon *Title*: Water Conservation Supervisor
*Address:* 1331 Concord Ave. Concord, CA 94520
*Telephone:* (925) 688-8136 *E-mail:* cdundon@ccwater.com

The Water Conservation Supervisor's position definition is to plan, organize, direct and supervise water conservation programs within the Public Affairs Department; and to perform a variety of technical tasks relative to the assigned area of responsibility. Duties may include, but are not limited to, the following:

- Recommend and assist in the implementation of goals and objectives; establish schedules and methods for District water conservation programs; implement policies and procedures.

- Plan, prioritize, assign, supervise and review the work of staff involved in water conservation programs.

- Evaluate operations and activities of assigned responsibilities; recommend improvements and modifications; prepare various reports on operations and activities.

- Participate in budget preparation and administration; prepare cost estimates for budget recommendations; submit justifications for water conservation program activities; monitor and control expenditure.

- Participate in the selection of staff; provide or coordinate staff training; work with employees to correct deficiencies; implement discipline procedures.

- Answer questions and provide information to the public; investigate complaints and recommend corrective action as necessary to resolve complaints; make formal presentations to outside groups regarding water conservation.

A.2) Water waste prevention

**The District meets this requirement**. Section 5.44 of CCWD's Code of Regulations lists water waste prohibitions and encourages water use practices.

Over the next five years, CCWD expects to maintain the existing Water Waste Prevention approach.

A.3) Wholesale agency assistance programs

**The District meets this requirement.** CCWD implements its water conservation program throughout the service areas of its wholesale customers. This includes offering conservation surveys, technical advice, rebates and other incentives. Also, CCWD's public outreach and school education programs include the entire service area. Attachment H presents the FY09 and FY10 conservation activities conducted in each of CCWD's wholesale customer service areas.

Over the next five years, CCWD will to the extent feasible work with its retail water agencies to encourage and assist them in reporting annually on their specific conservation activities on the CUWCC website. CCWD will continue to provide its conservation programs to individual customers within its wholesale service area to assist retail agencies in meeting their specific conservation goals and objectives.

1.2. Water Loss Control

**The District meets this requirement.** CCWD conducts the required water audit using the AWWA Standard Water Audit and Water Balance Worksheets. These are provided as Attachment H. CCWD is in compliance with the CUWCC MOU requirements for data validation and records maintenance.

For the next five years, CCWD will continue its water audits and conduct proactive leak detection.

1.3. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections

A metering report submitted to Reclamation in 1994 resulted in Reclamation concluding the District has substantially completed this BMP. Metering of all retail treated water accounts has been required since formation of the District in 1940. Dedicated irrigation meters have been required and used since 1991.

1.4. Retail Conservation Pricing

**The District meets this requirement**. In FY09, 76% of the District's retail rate revenue was from volumetric charges. In FY10, 73% of the District's retail rate revenue was from volumetric charges. The reduction from FY09 to FY10 exemplifies the fact that as consumption declines; the percentage of revenue from volumetric charges will also decline. See details in Attachment H.

Over the next five years, CCWD will continue to provide a price signal to customers through the volumetric charges in its rate structure.

**2. Education Programs**

2.1. Public Information Programs (Examples in Appendix I)

The CCWD Public Affairs Department coordinates with the Water Conservation Office to promote water conservation messages and programs through a variety of media. Publications, website pages, presentations, booths at community events, direct mail pieces, newsletters, newspaper ads, and water education programs are all tools used to promote water conservation.

**The District meets this requirement.** The District has a very active public information program that promotes water conservation. Below is a summary of the activities for FY09 and FY10.

**TABLE 4-1. PUBLIC INFORMATION ACTIVITY SUMMARY**

| Activity | FY09 | FY10 |
|---|---|---|
| Number of Public Contacts | 78 | 82 |
| On-Tap newsletter | 2 X 165,000 copies | 3 X 165,000 |
| Bill inserts | 2 X 65,000 copies | 1 X 65,000 |
| Messages on Envelopes and bills related to drought management program | All bills | All bills |
| Drought management Program brochure | 2X 165,000 copies | n/a |
| 2010 Post Drought Program | n/a | 2 X 165,000 copies |
| E-newsletter every 2 weeks | 26 per year | 26 per year |
| Information packets on bus tours | Yes | Yes |
| Speaking Engagements | 30 | 30 |
| Community events | 10 | 14 |

**Contact with Media**

CCWD as a wholesale and retail agency had considerable media contact during the past two years. The majority of the contacts were regarding water supply conditions, drought management plan requirements, and conservation information.

| TABLE 4-2. PUBLIC INFORMATION MEDIA CONTACT SUMMARY | | |
|---|---|---|
| **Activity** | **FY09** | **FY10** |
| Number of media contacts | 62 | 56 |
| News releases | 17 | 26 |
| Phone/ radio/ TV interviews | 25 | 10 |
| Advertisements and articles | 20 | 20 |

**CCWD Website**

CCWD uses its website to disseminate information about the District, water supply issues, and the conservation program. The water conservation component has a significant amount of information on programs, technical advice, and tips on conserving water. The main website is www.ccwater.com and the conservation website is www.ccwater.com/conserve. The following are some of the additions made during the past two years.

| TABLE 4-3. PUBLIC INFORMATION WEBSITE SUMMARY | | |
|---|---|---|
| **Description of Update** | **FY09** | **FY10** |
| Incorporated new "gardening in Contra Costa County" website | Yes | |
| Add mulch and carwash coupon programs to website | Yes | Yes |
| Video to assist customers on how to read their water meters | Yes | |
| Video about customers conservation practices | Yes | |
| Regular water supply or drought condition updates | Yes | Yes |
| Updates on water savings success | | Yes |
| Links to regional conservation programs such as "Water Saving Hero" | Yes | |
| Links to regional conservation programs such as "Save Our Water" by Water Education Foundation | | Yes |
| Update Links to Facebook and Twitter accounts | Yes | Yes |

**Social Marketing Programs**

- Branding theme: "Provide continued excellent service in the most cost effective manner."
- Social Marketing Expenditures: Staff time

**Community Committees**

- Focus group to review drought management program concept and materials, 2 focus groups, 20 participants
- Briefing meetings for specific customer classifications, 10 meetings, over 75 participants

**Partnering Programs**

- Contra Costa County Green Business Program Partner,
- EPA WaterSense Certified Training Program: Qualified Water Efficient Landscaper (QWEL)
- Bay Area Regional High-Efficiency Clothes Washer Rebate Program
- Bay Area Conservation Coordinators Group

**Conservation Gardens**

- Contra Costa Water District has a Conservation demonstration garden at its District Center location in Concord, California
- CCWD sponsors the *Bringing Back the Natives Garden tour* every year. The tour includes 50 residential gardens which are water conserving.

Over the next five years, CCWD will continue to implement its Public Information Program, including water conservation as a key message.

2.2. School Education Programs (Examples in Appendix I)

**The District meets this requirement.** CCWD has a full time staff person dedicated to implementing the school education program. The program is offered throughout the District's retail and wholesale service area to grades K-8$^{th}$. The program includes in-class presentations, assembly programs, water treatment plant tours, watershed programs, and other elements. The reports in Appendix H summarize the school education program for FY09 and FY10.

The goal of the Water Education Program (WEP) is to teach children the importance of water in our lives. CCWD's WEP educates service-area school students about CCWD's mission to deliver clean, safe water in an environmentally responsible manner. Each year, the CCWD's WEP reaches more than 30,000 service-area students and teachers. All of the programs promote and reinforce the following goals: recognizing activities that could affect water quality; understanding the connection between health and water quality; understanding the biodiversity of a watershed; and the importance of water conservation.

Over the next five years, CCWD will continue to implement its School Education Program, including water conservation as a key message.

# C. Programmatic BMPs

## 3. Residential

A.1) Residential Assistance Program

**The District meets this requirement.** CCWD has implemented a single family and multi-family conservation survey program since 1989. CCWD has met the 10-year compliance requirement. See Appendix H for the CCWD 10-Year BMP Compliance Report. Therefore, CCWD has an on-going requirement of conducting 400 Single Family Surveys (0.75% of SF Accounts) and 225 MF Dwelling Unit Surveys (0.75% of MF Dwelling Units) per year. CCWD has met the 75% saturation goal for showerheads. This was submitted to the CUWCC in 2007. However, CCWD continues to provide 2.0 gallon per minute showerheads to its customers.

Single Family Surveys

The Single Family Residential Survey Program offers free on-site evaluations of home water use. The survey takes approximately one hour to complete, and includes a thorough review of both interior and landscape water uses; however, the primary focus of the survey is landscape water use. The water conservation technician inspects each irrigation station, notes specific problems and suggested repairs or improvements, and a site-specific monthly irrigation schedule is prepared. The schedule is programmed into the controller and the customer is taught how to adjust the timer. Customers are shown how to read their water meter and how to use the meter as a water management tool. In addition, customers are provided free high-efficiency showerheads, aerators and a report listing the survey findings. After participating in the program, customers are sent post cards each year to remind them to adjust their watering schedules and to check their irrigation systems.

Multi-Family Surveys

The Multi-Family Residential Survey Program targets apartment complexes and other multi-family customers. The District has conducted surveys at the majority of the apartments in the service area. During the Multi-Family survey, the water conservation technician conducts flow tests on showerheads and kitchen and faucet aerators. For those fixtures that have a flow rate greater than 2.5 gallons per minute (gpm), the District will install or provide fixtures that flow at 2.0 gpm. In addition, the CCWD technician tests the toilets for leaks and determines the flush volume of the toilet. A report is provided to the customer that lists the number and location that showerheads were installed and where faucet aerators are needed. The report also lists the flush volumes of each of the toilets and the location of each toilet that was leaking. Finally, the customer is provided with pre-approval to participate in the high-efficiency toilet rebate program for those toilets that have a flush volume of 3.5 gallons or greater. In addition, for multi-family properties that have common laundry facilities, the washers are inspected and if they are below efficiency standards, the customer is provided pre-approval to participate in the commercial clothes washer rebate program.

CCWD expects to continue both the single family and multi-family residential survey programs for the next five years.

A.2) Landscape Water Survey

**The District meets this requirement.** CCWD has conducted landscape water use surveys as part of its Single Family Conservation Survey Program since 1989. CCWD has met the 10-year compliance requirement. See Appendix E for the CCWD 10-Year BMP Compliance Report. Therefore, CCWD has an on-going requirement of conducting 400 Single Family Surveys (0.75% of SF Accounts) per year.

Landscape Water Surveys

A survey takes approximately 75 minutes to complete and includes a review of both interior and exterior water use. During the landscape portion of the survey, the surveyor inspects each irrigation station and notes specific problems and suggested repairs or improvements. A site-specific watering schedule is prepared and programmed into the controller. Finally, the customers is educated on how to read the water meter and use the meter as a tool to help them monitor and manage water use. Customer feedback on the program has been extremely favorable. .

CCWD expects to continue the Single Family Landscape Water Survey for the next five years.

A.3) High-Efficiency Clothes Washers (HECWs)

**The District meets this requirement.** CCWD has provided rebates for high-efficiency clothes washers since 2000. From the year 2000 through 2008, the District provided 13,782 high-efficiency clothes washer rebates throughout its entire service area. CCWD provided 264% of its ten-year requirement. See Appendix H for the CCWD 10-Year BMP Compliance Report. CCWD continues to provide rebates for WaterSense certified high-efficiency clothes washers. The current annual requirement is to provide 0.9% of current single-family accounts per year, which equates to 477 rebates per year.

Residential High Efficiency Clothes Washer Rebate Program

CCWD initiated a rebate program in 1999 by providing a $75 rebate for high-efficiency clothes washers. Three years later in 2002, CCWD coordinated with other Bay Area water agencies to implement a Bay Area Regional Clothes Washer Rebate Program and hired Electric Gas Industries Association (EGIA) to administer the program. CCWD provided a rebate of up to $100 until 2007. Appliance dealers throughout the Bay Area provided the same rebate application, making the program easier for salespeople and customers to understand. Then in 2008, the Bay Area water agencies contracted with Pacific Gas & Electric to administer the rebates. This had the added benefit of allowing customers to fill out a single application and to receive both the water agency and PG&E rebate in a single rebate check. CCWD customers received a combined rebate of up to $200. In 2010, the combined rebate was reduced to $100. This change had little effect on participation, improving the overall program cost-effectiveness.

Over the next five years, CCWD expects to continue the Residential HECW Rebate Program.

A.4) WaterSense Specification (WSS) Toilets

**The District meets this requirement.** CCWD has provided rebates for water-efficient toilets since 1994. From 1994 through 2006, CCWD provided nearly 39,000 rebates for 1.6 gallon per

flush toilets throughout its entire service area (retail and wholesale). In 2007, the District ended the 1.6 gpf program and introduced the 1.28 gpf (high-efficiency toilet) rebate program. In FY07 and FY08, CCWD provided an average of 1,900 rebates per year.

High-Efficiency Toilet (HET) Rebate Program

The District offers customers two ways to receive a rebate for purchasing a qualified WaterSense Certified High-Efficiency Toilet (HET). From FY07 through FY11, the District offered a rebate of $175. In FY12, the rebate was reduced to $125 to reflect the reduced price of available HETs in the marketplace. Customers can apply for a voucher that will enable them to receive an instant rebate when they purchase a qualifying HET at one of the District's participating vendors. Alternatively, customers can apply for a traditional rebate application which allows them to purchase a qualifying HET at any plumbing supplier and then mail in their rebate application to be processed by the District. Rebates are provided for all customer classes.

From 1994 until 2007, the District provided rebates for 1.6 gallon per flush toilets (ULFTs). In 2007, the District discontinued the ULFT rebates and switched to providing rebates for 1.28 gallon per flush toilets (HETs).

Over the next five years, CCWD expects to continue the Residential HET Rebate Program.

A.5) WaterSense Specifications for Residential Development

CCWD does not currently maintain WaterSense specifications for residential development, though New Development Requirements meeting the WaterSense criteria could be considered in the future. CCWD coordinated with the City of Concord to develop specifications for new development within the Concord Naval Weapons Station.

**4. Commercial, Industrial, and Institutional (CII)**

**The District meets this requirement.** CCWD is required to reduce 0.5% by the end of the first reporting period (FY10). In FY10, CCWD has reduced a total of 12.5%, which is more than the ten-year total goal. CCWD has had an active CII conservation program. Since 1990, the District has conducted more than 2,200 CII conservation surveys throughout the District's service area. In addition, the District has provided 439 commercial clothes washer rebates, 294 high-efficiency urinal rebates, 691 high-efficiency pre-rinse spray nozzles, 2 cooling tower conductivity meter rebates, 1,681 CII ULFT rebates, and 272 HET rebates.

Commercial, Institutional and Industrial (CII) Surveys

The CII survey program targets a variety of commercial, institutional and industrial customers. Individual water-using devices are inspected, and customers receive a detailed report listing improvements that can be made to the equipment and to the maintenance of that equipment. Rebates are offered as an incentive to upgrade to more efficient equipment. For those devices that the District does not have a specific rebate, CCWD will evaluate the savings and provide rebates on a case-by-case basis.

Commercial High-Efficiency Clothes Washer Rebate Program

Rebates of up to $220 are offered to commercial customers to install high-efficiency commercial clothes washers in Laundromats and apartment common laundry facilities. Customers must purchase the machines or have a five-year lease for the machines to qualify.

Commercial High-Efficiency Urinal Rebate
Rebates of up to $175 are provided to commercial customers to install high-efficiency urinals that have a flush volume of ½ gallon per flush or less. Urinals must be EPA WaterSense certified.

Commercial Cooling Tower Conductivity Meter Rebate
Rebates of up to $500 are provided to commercial customers to install conductivity meters on their existing cooling towers. The meters allow customers to increase the cycles of concentration of the water used in the cooling tower, thus improving the water use efficiency.

Commercial Pre-Rinse Spray Nozzle Replacement Program
The District provides free high efficiency pre-rinse spray nozzles for restaurants and other food industry businesses. These nozzles reduce hot water use, which results in lower water and energy bills for the customer. The District participated in a state-wide program from 2003-2006 in which the majority of the properties in the District's service area participated, so the saturation level of the nozzles is considered very high.

Commercial Pre-Rinse Spray Nozzle Replacement Program
The District provides free high efficiency pre-rinse spray nozzles for restaurants and other food industry businesses. These nozzles reduce hot water use, which results in lower water and energy bills for the customer. The District participated in a state-wide program from 2003-2006 in which the majority of the properties in the District's service area participated, so the saturation level of the nozzles is considered very high.

Smart Wash Car Wash Coupon Program
The District provides customers with coupons for discounts at local car washes that recycle water on site. Car washes that recycle water can use 50% less water compared to washing with a hose.

Green Business Program
CCWD is a sponsor and a participating agency in the Contra Costa County Green Business Program. The Green Business Program is a partnership of environmental agencies, professional associations, waste management agencies, utilities, and concerned public, working together to recognize and assist business and government agencies that operate in an environmentally friendly manner. As part of the program, CCWD evaluates water use efficiency for businesses. Customers receive conservation surveys and are offered incentives to upgrade equipment. CCWD provides survey findings to the Contra Costa Clean Water Program, the lead agency for the Green Business Program.

For the next five years, CCWD expects to continue its CII survey and incentive programs.

**5. Landscape**

**The District is on track to meet this requirement.** CCWD has provided a comprehensive landscape conservation program since 1990. The program includes landscape site surveys, water budgets and irrigation rebates.

1. CCWD met requirement 1 in 2008. See Appendix H for the CCWD 10-Year BMP Compliance Report. CCWD has an ETO-based water budget program for its dedicated

irrigation accounts. The District has developed landscape water budgets for more than 90% of the dedicated irrigation accounts. The District is in the process of updating the database for this program. Currently approximately 50% of the accounts receive quarterly reports comparing their water use to a site-specific water budget developed using real time weather data, site square footage and water use data. Once the database is updated, the remainder of the accounts will begin receiving quarterly budget reports by January 2013.

2. CCWD meets requirement 2. The District offers technical assistance to customers with water use that exceed their budget by more than 20 percent. This offer is included in the water budget site report. In addition, the District offers technical assistance to customers who receive excess use charges on their water bills.
3. CCWD meets requirement 3. CCWD must conduct surveys at 1.5% of the mixed use CII accounts. There are a total of 2,963 CII accounts and 2,509 Multi-Family accounts. The estimated number of mixed use accounts is 1,208. This was based on an evaluation conducted and submitted to the CUWCC in January 2006. Therefore, CCWD is required to conduct 18 surveys each year at mixed use accounts.

Weather Based Irrigation Controller (WBIC) Rebate Program

Rebates are provided to both residential and commercial customers to install weather-based irrigation controllers. Residential customers can receive a rebate of $25 per active irrigation station and commercial customers can receive a rebate of $40 per active station. WBICs save water by self-adjusting to reflect changes in the weather. Much of the savings occur in the fall months when the temperature may remain high, but the evapotanspiration rate declines due to reduced sun light and lower sun angles.

Commercial Irrigation Equipment Rebates

Rebates are provided for select irrigation equipment at commercial properties. The following equipment is currently eligible for rebates:

- Drip Retrofit: Rebates of up to 20 cents per square foot for converting existing spray systems with drip systems.
- Sprinkler Head Rebates: Rebates of $3 are available for customers to replace existing inefficient sprinklers with efficient sprinklers. Very strict guidelines apply to ensure the installation of the new sprinklers results in matched precipitation rate, no runoff, and no overspray.
- Sprinkler Nozzle Rebates: Rebates of $4 are available for customers to replace existing spray nozzles with typical application rates of greater than 1.5 inches per hour to nozzles with application rates of one inch per hour or less. Very strict guidelines apply to ensure the installation of the new nozzles results in matched precipitation rate, no runoff, and no overspray.
- Rain Sensor: Rebates of up to $30 are available for customers who purchase and install qualifying rain sensors used to automatically turn off irrigation timers when it rains.

Large Landscape Water Budgets

The Landscape Water Budget Program is directed at those commercial and multi-family sites with dedicated irrigation water accounts. There are approximately 1,300 such accounts in the TWSA. Water Budgets are prepared using real-time local evapotranspiration (ETo) data and actual landscape area measurements obtained through an aerial photo. The data is integrated into

a detailed water budget equation, which integrates monthly landscape coefficients, irrigation efficiency, and real-time ETo. Water Budget site reports are prepared comparing the water budget to actual water use. The program provides participating customers with water budget site reports tailored specifically to their properties. These reports enable the customer to adjust their water use to reflect seasonal weather changes and, therefore, control the costs of their water bills.

Mulch Coupon Program

The District partnered with local nurseries to develop coupons for discounts on landscape mulch. Discount coupons encourage customers to purchase mulch for their landscapes. Mulch saves water by reducing evaporation from the soil. It also improves the soil health as it decomposes, making plants healthier. More than 25 local nurseries participate annually.

For the next five years, CCWD expects to continue its landscape water budget and incentive programs.

## D. Program Accomplishments

CCWD has actively and consistently implemented a variety of effective water conservation programs since 1988. CCWD has also implemented the CUWCC BMPs consistently since it signed the Memorandum of Understanding regarding Water Conservation (MOU) in 1991. For the ten-year period ending FY08, CCWD met each and every BMP for its retail and wholesale BMP requirements. Appendix H is the Ten-year CUWCC BMP Coverage Report that demonstrates successful ten-year implementation.

Table 4-4 lists the water conservation programs and savings estimates for each of the activities. The Annual Savings are the savings that are projected to occur during one year (FY11) as a result of all previous years activities that still have residual savings in that year after depreciation. The Cumulative Savings are the sums of each annual year's savings from the inception of the program.

## TABLE 4-4. WATER CONSERVATION PROGRAMS

| Conservation Activity | Pre-FY06 | FY06 | FY07 | FY08 | FY09 | FY10 | Cumulative Savings (AF)[b] | Annual Savings (AF in FY11) |
|---|---|---|---|---|---|---|---|---|
| SF Surveys | 11,590 | 630 | 653 | 668 | 888 | 1,028 | **3,315** | **196** |
| MF Surveys | 29,457 | 844 | 1,954 | 611 | 508 | 1,301 | **2,015** | **71** |
| CII Surveys | 1,723 | 115 | 85 | 87 | 59 | 119 | **2,331** | **187** |
| Landscape Surveys | 1,441 | 97 | 104 | 66 | 29 | 58 | **6,231** | **297** |
| Showerheads (2.0-2.5 gpm) | 20,479 | 130 | 748 | 571 | 5,699 | 3,185 | **1,958** | **195** |
| Faucet Aerators (2.0-2.5 gpm) | | 137 | | 857 | 6,586 | 3,321 | **33** | **18** |
| Toilets (ULFTs @1.6 gpf) | 35,388 | 3,169 | 0 | 0 | 0 | 0 | **13,221** | **1168** |
| Toilets (HETs at 1.28 gpf) | | 1 | 1,935 | 1,873 | 2,881 | 3,994 | **963** | **410** |
| Residential Clothes Washers | 7,530 | 2,115 | 1,898 | 2,239 | 3,614 | 4,191 | **2,849** | **652** |
| Commercial Clothes Washers | 283 | 61 | 1 | 3 | 20 | 71 | **137** | **24** |
| Pre-Rinse Nozzles | 582 | 102 | 2 | 1 | 4 | 0 | **389** | **59** |
| High Efficiency Urinals | 119 | 42 | 1 | 8 | 104 | 20 | **23** | **5** |
| Smart Sprinkler Timers | 41 | 32 | 51 | 54 | 87 | 106 | **517** | **168** |
| Drip Retrofit (# stations) | 80 | 1 | 0 | 0 | 92 | 110 | **45** | **14** |
| Rain Sensors | 80 | 6 | 1 | 0 | 0 | 0 | **26** | **0** |
| Sprinklers and/ or Nozzles Replaced | 2,907 | 30 | 55 | 485 | 789 | 2,447 | **21** | **5** |
| Water Budgets | | 653 | 650 | 800 | 560 | 83 | **1,700** | **42** |
| Water-Wise CD Rom/ Web hits | | 1,523 | 1,000 | 1,000 | 652 | 4,292 | **2** | **1** |
| Meters Installed for untreated landscape customers | 27 | 15 | 16 | 0 | | | **1,290** | **200** |
| Cooling Tower Conductivity Meter (tons of cooling) | 500 | | 500 | | | | **27** | **5** |
| Lawn Conversions (sq. ft) | | | | | | 180,000 | **18** | **18** |
| Fall Back Marketing Program | | | | 1 | 1 | 1 | **385** | **128** |
| Public Information Program | 1,523,770 | 107,974 | 107,974 | 107,974 | 107,974 | 107,974 | **8,576** | **449** |
| Total | | | | | | | **46,074** | **4,312** |

a) The activities listed in Table 2-8 reflect the total activities conducted in both the retail and wholesale service area.
b) The Cumulative Savings are the sums of each annual year's savings from the inception of the program.

Table 4-5 displays CCWD's three-year budget for BMPs.

**TABLE 4-5. CCWD CONSERVATION BUDGET SUMMARY**

| | FY10 - Actual | | FY11 | | FY12 | | FY13 | |
|---|---|---|---|---|---|---|---|---|
| **Programs (Operating)** | Expenditures | Salaries and Benefits | Expenditures | Salaries and Benefits | Expenditures | Salaries and Benefits | Expenditures | Salaries and Benefits |
| Utility Operation Program | $12,852 | $149,201 | $21,000 | $170,000 | $15,000 | $143,000 | $15,000 | $147,000 |
| Public Outreach | $263,000 | $315,000 | $220,000 | $308,000 | $250,000 | $310,000 | $258,000 | $319,000 |
| Education Program | $199,000 | $65,000 | $210,000 | $67,500 | $220,000 | $70,000 | $227,000 | $72,000 |
| Residential | $64,259 | $223,801 | $104,000 | $255,000 | $74,000 | $215,000 | $76,000 | $221,000 |
| CII | $32,129 | $179,041 | $52,000 | $204,000 | $37,000 | $172,000 | $38,000 | $177,000 |
| Landscape | $19,278 | $193,961 | $31,000 | $221,000 | $22,000 | $186,000 | $23,000 | $192,000 |
| **Total Programs** | **$590,517** | **$1,126,003** | **$638,000** | **$1,225,500** | **$618,000** | **$1,096,000** | **$637,000** | **$1,128,000** |
| **Rebates and Incentives (Capital)** | | | | | | | | |
| Residential | $1,248,690 | $177,725 | $1,190,000 | $132,000 | $914,000 | $146,000 | $941,000 | $150,000 |
| CII | $147,032 | $20,927 | $140,000 | $16,000 | $59,000 | $9,000 | $61,000 | $9,000 |
| Landscape | $97,300 | $13,849 | $93,000 | $10,000 | $52,000 | $8,000 | $54,000 | $8,000 |
| **Total Rebates and Incentives** | **$1,493,022** | **$212,501** | **$1,423,000** | **$158,000** | **$1,025,000** | **$164,000** | **$1,056,000** | **$169,000** |
| | | | | | | | | |
| **Total Budget for Conservation BMPs** | **$2,083,539** | **$1,338,504** | **$2,061,000** | **$1,383,500** | **$1,643,000** | **$1,260,000** | **$1,693,000** | **$1,297,000** |

(a) FY = CCWD Fiscal Year, starting July 1 and ending June 30 of the following year. For example, FY10 starts July 1, 2009 and ends June 30, 2010.
(b) The FY10 and FY11 budget increased in response to increased conservation measures during the 2009 drought.

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# SECTION 5: Plan Implementation

*Water management in general, and water management planning in particular, is an on-going process that starts with the preparation of a comprehensive plan. The purpose of preparing a Plan is for the contractor to implement the programs developed during the planning process. Implementation of programs identified in the Plan is critical to the success of water management within a District. These Criteria focus not only on what constitutes an adequate Plan, but also on the implementation of the programs described in that Plan.*

*Contractors shall report on Plan implementation annually. For the Agricultural Contractor it is through the completion of updating the BMPs on the Access database. For the Urban Contractor, it is by submitting the California Urban Water Conservation Council reports.*

Progress on the implementation of CCWD's water conservation program is summarized in the California Urban Water Conservation Council Reports, prepared and submitted annually since February 1995. CCWD's annual BMP reports for FY09-FY10 are included in Appendix H. In addition, the CUWCC Ten-Year BMP Coverage Report is included in Appendix H to demonstrate the District's successful ten-year BMP implementation and compliance with the MOU.

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# SECTION 6: Exemption Process

*Some BMPs are not appropriate or possible for a contractor to implement. To document an exemption, provide the basis, rationale, and details for excluding a BMP. Such documentation shall address, as appropriate, cost-effectiveness, financial feasibility, and environmental or legal constraints to BMP implementation. Reclamation will also consider exemption requests prepared using the final AWMC exemption process or the California Urban Water Conservation Council exemption process.*

CCWD implements all required Best Management Practices; therefore, this section is not applicable.

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# SECTION 7: Regional Criteria

*In September 1995, the Department of Interior (Interior) invited the public to identify any concerns they had regarding implementation of the CVPIA (Title XXXIV of Public Law 102-575). To facilitate public input and discussion, representatives of Interior held a series of public meetings between September 1995 and April 1996. During these meetings, 12 major areas of concern were identified. Interior prepared an "Administrative Proposal" on each of the 12 areas of concern. The "Administrative Proposal" on Water Conservation was released on March 20, 1997.*

*As provided for in the Administrative Proposal for Water Conservation, contractors may petition the Regional Director for the development of Regional Criteria, separate and distinct from these Criteria. The factors the Regional Director may consider in evaluating Regional Criteria requests include: 1) the percentage of irrigated acreage represented within a region, 2) the quantity of federally supplied water delivered, and 3) the unique regional characteristics that support developing a criteria other than this Criteria.*

*The petition shall include the following information: the participating contractors, description of the characteristics of the region, justification for Regional Criteria, and whether or not Contractors will subsequently engage in regional planning. The Regional Director will initiate a public review process and respond within 90 days of receipt of the petition for Regional Criteria.*

Regional Criteria have been developed for the Sacramento Valley River Contractors as a pilot project. No other Regional Criteria have been explored.

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# SECTION 8: Five-Year Plan Revision Procedure

*Contractors are required to submit revised Plans every five years. For example, if a contractor filed a Plan in 1994 and the Federal Register notice was published on May 19, 1994, then the contractor is required to revise the Plan covering their water management activities for the next five years no later than December 1999. In this example, the contractor will submit a revised Plan that updates data and identifies any changes that have occurred since the last five year Plan was adopted and describes their proposed activity and funding levels for the years 2000-2004. The contractor will use the most recently adopted Criteria or Regional Criteria, if applicable. The contractor will continue to file an annual update every year to report implementation actions taken.*

Progress on the implementation of CCWD's conservation programs is summarized in annual status reports, prepared since February 1995.

**TABLE 8-1. WATER MANAGEMENT PLAN SUBMISSION CYCLE**

| Reporting Requirement | Submission History | Next Submission Due |
|---|---|---|
| 5-Year Plan | January 1995, August 2000, December 2006, February 2012 | February 2017 |
| 3-Year Update | October 1996, December 1999 | NA |
| Annual Status Report | Annually since February 1995 | Annually through CUWCC website |

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# APPENDIX A

## U.S. Bureau of Reclamation, Mid-Pacific Region Criteria for Evaluating Water Management Plans 2011

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RECLAMATION

*Managing Water in the West*

**Mid-Pacific Region**

# 2011 Standard Criteria

**U.S. Department of the Interior**
**Bureau of Reclamation**

**2011**

**Bureau of Reclamation, Mid-Pacific Region**
**Standard Criteria**

The Standard Criteria (Criteria) were developed by the Bureau of Reclamation (Reclamation) in response to the Central Valley Project Improvement Act of 1992 (CVPIA) (Public Law 102-575) and in accordance with the Reclamation Reform Act of 1982 (RRA) (Public Law 97-293).

**Who must use these Criteria**: The Criteria apply to any water management Plan (Plan) submitted to Reclamation as required by applicable Central Valley Project (CVP) water service contracts, settlement contracts, or any contracts that specifically invokes the Criteria.

**Exceptions**: The following are exempted from preparing a Plan using the Criteria:

- All contractors that receive **only** irrigation water from any Federal Reclamation project, and deliver water to less than a current five-year average of 2,000 acres of land.

- All contractors that receive less than a five-year average of 2,000 acre-feet per year (AFY) of **only** municipal and industrial (urban) water from any Federal Reclamation project.

- All contractors that receive any combination of irrigation and/or urban water amounting to less than a current five-year average of 2,000 acre-feet from any Federal Reclamation project.

**Criteria Contents:**

| **Section** | **Title** |
|---|---|
| 1 | Description of the District |
| 2 | Inventory of Water Resources |
| 3 | Best Management Practices for Agricultural Contractors |
| | a) Critical Best Management Practices |
| | b) Exemptible Best Management Practices |
| 4 | Best Management Practices for Urban Contractors |
| | a) Utility operations programs |
| | b) Education programs |
| | c) Residential |
| | d) Commercial, industrial, and institutional |
| | e) Landscape |

If this is your first Plan and if data called for in the Criteria are not available, the contractor shall include in their Plan how they (the contractor) will gather the data and make it available for the next Plan revision.

**Where to submit Plans:** Contractors shall submit Plans in electronic format to the local area office for review. For your area office representative and contact information, please visit www.usbr.gov/mp/watershare/contacts.html. After Plans are reviewed by the area and regional

Offices and deemed adequate, the Board of Directors is required to pass a resolution adopting the Plan.

# INTRODUCTION

## Background and General Information

The purpose of the Criteria is to promote, using the best available cost-effective technology and Best Management Practices (BMPs), the highest level of delivery water management achievable by contractors, along with the implementation of water-use efficiency measures reasonably achievable by their customers.

Section 210 of the RRA requires contractors to prepare and submit Plans every five years with definite goals, appropriate water conservation measures, and timetables.

Section 3405 (e) of the CVPIA requires that the Secretary of the Interior establish Criteria to evaluate CVP Plans by April 30, 1993. The Criteria shall be reviewed at least every three years and revised, if necessary.

The CVPIA specifies that the Criteria identify BMPs including, but not limited to, efficient water management practices being developed pursuant to California State law or reasonable alternatives.

Reclamation developed and distributed a Water Management Planner detailing the type of information required by the Criteria. The Water Management Planner will be updated to conform to the revised Criteria.

## PLAN EVALUATION, IMPLEMENTATION, AND COMPLIANCE

Water management and water management planning are on-going processes that begin with the preparation of a comprehensive Plan. The purpose of preparing a Plan is for the contractor to implement the programs developed during the planning process. Implementation of programs identified in the Plan is critical to the success of water management within a district. The Criteria focuses not only on what constitutes an adequate Plan, but also on the implementation of the programs described in that Plan.

The Plan should be prepared using the Plan format identified in the guidebook. Plans shall include description of the district, inventory of water resources, and best management practices.

### Flexibility and Coordination

The Criteria recognizes the differences between contractors and are flexible enough to allow each contractor to develop and implement the types of programs that will best accomplish improved water management within their boundaries. In some cases, the contractors may choose to pool their resources and implement joint programs. The Criteria allows and encourages joint efforts toward program implementation.

Wholesalers are responsible for their subcontractor's water conservation compliance. Wholesalers may include subcontractors in a single plan containing data on each subcontractor or require each retailer to prepare their own plans. If retailers prepare their own plan, the wholesaler should be involved to the extent necessary to ensure it is found to meet the Criteria.

### Review Process

Contractors are required to submit draft Plans to the area office for review. Once forwarded to the Regional Office, contractors will receive notification of Reclamation's acceptance or request for modification. Following notification by Reclamation that the Plan conditionally meets the requirements of the Criteria, contractors submit one electronic copy of the complete Plan. A resolution by the contractor's Board of Directors formally adopting the Plan must also be submitted. A "Notice of Availability" regarding your Plan will be published in the *Federal Register.*

Congress established the *Federal Register* publication system as a method of informing the public of the regulations affecting them. The official agency actions published in the *Federal Register* are available to the public and subject to the Freedom of Information Act. Once in the *Federal Register*, the public is given 30 days in which to view and comment on the Plan. If no significant comments are received within 30 days, the review process is officially completed and the Plan will be posted on the Reclamation WaterShare web site: www.usbr.gov/mp/watershare/. If public comments are received, additional changes to the Plan may be required.

## Annual Updates

Pursuant to water service and settlement contract terms, contractors must report on Plan implementation annually.

Agricultural contractors complete annual updates by filling in the information for BMPs on the Agricultural Water Management Council (AWMC) web site at www.agwatercouncil.org.

Urban contractors complete annual updates by filling in the information for Urban BMPs on the CUWCC web site at www.cuwcc.org.

## Five-Year Plan Revision Procedure

Pursuant to water service and settlement contract terms, contractors are required to submit an updated Plan every five years. Contractors must use the most recently adopted Criteria for a new Plan or a five-year updated Plan. The contractor must continue to file an annual update every year to report implementation actions taken.

## Consequences of Non-Compliance

Under most conditions, an adequate Plan must be in place before Reclamation will consider extending any discretionary benefits, such as financial and technical assistance. Consequences of noncompliance may include, but are not limited to the following consequences:

- Ineligibility for any Reclamation grants program
- Restrictions on rescheduling
- Restrictions on water banking
- Restrictions on inclusion and exclusion requests

## Verification

All information is subject to verification and Reclamation may review plan implementation in coordination with the contractor.

**For the purposes of the Criteria only, the following definitions will be used:**

*Agricultural Water Management Council (AWMC)* - A consortium of agricultural water agencies and public interest groups working together to implement water conservation practices in California. This effort was formalized in a Memorandum of Understanding (MOU) signed in 1996. Signatory water suppliers agree to develop and implement comprehensive conservation BMPs using sound economic criteria.

*Best Management Practice (BMP)* - A policy, program, practice, rule, regulation and/or ordinance, or the use of devices, equipment, or facilities that meet either of the following:

a) An established and generally accepted practice among contractors that results in more efficient use, conservation/management of water;

b) A practice for which sufficient data are available from existing water management projects to indicate that significant efficiency improvements or management-related benefits can be achieved; that the practice is technically and economically reasonable and not socially or environmentally unacceptable; and that the practice is not otherwise unreasonable for most contractors to carry out.

*CALFED* - State-Federal program formalized in June 1994 upon the execution of a Framework Agreement by the State and Federal agencies having management and regulatory responsibility in the Bay-Delta Estuary. The mission of CALFED is to develop and implement a long-term comprehensive plan that will restore the ecological health of the Bay-Delta.

*California Urban Water Conservation Council (CUWCC)* - A consortium of urban water agencies and public interest groups working together to implement water conservation practices in California. This effort was formalized in a MOU. Signatory water suppliers agree to develop and implement comprehensive conservation BMPs using sound economic criteria.

*Class I/Class II Water* - The Friant Division of the Central Valley Project employs a "Class I/Class II" water contracting system. Class 1 water is the first 800,000 acre-feet made available from the project. Class II water is the subsequent 1.4 million acre-feet developed from the project. Class II water is available only after all Class I water has been made available.

*Conjunctive Use* - The planned and coordinated use of surface and groundwater supplies to increase water supply reliability, as may be included in a groundwater management plan or banking program.

*Contractor* - Entities that contract with Reclamation for urban and/or agricultural water.

*Customer type (urban)* - Urban customer types may include: single-family, multi-family, commercial, industrial, institutional, landscape irrigation, wholesale, or recycled.

*District* - The physical boundaries of the contractor's service area.

*Five-Year Plan Revision* - The revision of a Plan using the most recently adopted Criteria. Under the RRA, contractors are required to submit an updated Plan to Reclamation every five years.

*Groundwater Banking Program* - The intentional storage of water supplies in subsurface aquifers with plan for retrieval and beneficial use. The contractor should have a reasonable rationale of how the contractor or customers will benefit when the water is retrieved for beneficial use. Groundwater banking usually involves keeping an account of water input and the subsequent use by predetermined or specified parties. Groundwater recharge alone is not a groundwater management plan or banking program. An acceptable groundwater management plan or groundwater banking program must have a method to retrieve such water for beneficial use.

*Groundwater Management Plan* - A set of practices and management actions that improve groundwater conditions (with the intent of protecting and/or increasing benefits, including the sustainability of groundwater aquifers).

*Groundwater Recharge* - Infiltration of water into the saturation zone can occur by one of the following processes:

a) natural recharge - recharge of a groundwater basin due to precipitation and stream flow;
b) planned recharge - intentional recharge of a groundwater basin via percolation ponds or injection wells; or
c) incidental recharge - recharge resulting from canal seepage or deep percolation from excess irrigation

*Implementation* - Achieving and maintaining the staffing, funding, and the priority levels necessary to achieve the level of activity called for in the descriptions of the various BMPs. Also, to satisfy the commitment by the contractor to use good-faith efforts to optimize benefits from implementing BMPs.

*Inflow* - Water that enters the district boundaries, which also enters the district distribution system.

*MOU* - Memorandum of Understanding.

*Outflow* - Water from the distribution or drainage system that leaves the district boundaries.

*Retailer* - A contractor who sells all water directly to the water user.

*Riparian Evapotranspiration (ET)* - ET from non-crop vegetation that usually grows along the banks of water conveyance and storage facilities.

*Water Conservation/Water Management* - Use of less water to accomplish the same purpose(s) or the use of the same amount of water to accomplish additional benefits. An example of the latter is implementation of a BMP that results in increased total crop production using the same

amount of water. Water management that results in the increased benefits of water can be achieved through the implementation of BMPs identified in these criteria. For the purpose of these Criteria, water conservation is considered the same as water management.

*Water Inventory* - An approach used in the Plan that identifies and quantifies all inflows, outflows, and other uses of water by the contractor in order to identify areas of potential improved water management.

*Wholesaler* - A contractor who sells water to entities who resell the water, usually to multiple customers.

**PLAN CONTENTS**

**Section 1: Description of the District**

**Intent:** To describe general physical information about the district so that a basis can be formed to evaluate improvements by and within the district, as well as provide the reader with information about the district's physical aspects that may affect the potential for improved water management.

**A. History**: Give a historical overview of the district. Provide a timeline that includes the formation of the district, date the district was formed, population served, original size, water supplies, contract information with Reclamation and others, and changes in land use. For agricultural districts, describe the changes in irrigated acreages, cropping patterns, and evolving irrigation methods.

**B. Location and Facilities**: Describe the district's incoming flow measurement method and locations, water conveyance and delivery system (unlined canals, lined canals, pipelines, etc.), and storage facilities (reservoirs, regulating reservoirs, etc.). Agricultural contractors should describe district outflow points, spill recovery systems, and whether the delivery system is on-demand (no lead time or scheduling necessary); scheduled (water order 24 hours in advance); rotation (farmer receives water every ten days); or other. Describe any restrictions on the contractor's water source(s) and proposed changes that will be implemented during the next five years.

**C. Topography and Soils**: Describe the topography of the district (hilly, flat, sloping to a water course, etc.). Indicate the impact of topography on water operations and management within the district. Describe major soil classifications and corresponding acreages within the district that affect the use of water (salinity or high-water table, high or low infiltration rates, etc.).

**D. Climate**: Describe the general climate of the district. Include average precipitation, maximum and minimum temperatures, average wind velocity, and frost-free days. If there are areas within the district known to have significantly different microclimates, describe how these affect water management decisions and operations. Also include climate data source(s).

**E. Natural and Cultural Resources**: Describe any known natural resources (wetlands, rivers, streams, lakes, etc.) within the district. Indicate if any of these resources were managed (past or present) by the contractor. Describe any known recreational and/or cultural resources (specifically, historic canals and structures 50 years old or more) within the district.

**F. Operating Rules and Regulations**: Attach a copy of the contractor's operating rules and regulations which describe information on water allocation policies, lead time necessary for water orders and water shut-off, policies regarding return flows and outflow leaving the district, and policies related to water transfers into or out of the district (by farmer and contractor).

**G. Water Measurement, Pricing, and Billing**: List the total number of connections/turn-outs, the number currently measured, and the percentage of water deliveries measured. List the types

and quantity of measurement devices (meters, calibrated gates, weirs, etc.), level of accuracy (along with documentation verifying the accuracy of the devices), frequency of calibration, and maintenance and reading schedule.

Describe the basis for water charges for agricultural and urban uses. If details are complex, provide an overview and reference the page of the contractor's written operating rules and regulations that provides additional detail. Be sure the following information can be easily found: basis of charges for agricultural water (by quantity, acre, crop, land assessment, other charges, etc.) and/or for urban (by customer class, quantity, flat rate, etc.).

For water use billed by quantity, describe the rate structure (declining, uniform or increasing block rate, etc.). Include the billing frequency (monthly, bimonthly, annually, etc.), a sample of each type of bill, and a description of the record management system.

**H. Water Shortage Allocation Policies**: Attach a copy of the contractor's agricultural and/or urban water shortage plan.

Describe how reduced water supplies, including hardship water, are allocated. Describe the contractor's policies that address wasteful use of water and describe enforcement methods.

**I. Evaluate Policies of Regulatory Agencies Affecting the Contractor and Identify Policies that Inhibit Good Water Management:** Evaluate policies of agencies that provide the contractor with water. Discuss possible modifications to policies and solutions for improved water management.

**Section 2: Inventory of Water Resources**

**Intent**: This section shall include a description of contractor's surface water supply, groundwater supply, other water supplies, source water quality monitoring programs, water uses within the district, outflow from the district, urban waste-water disposal, and water budget. Provide this information for either the last complete calendar year or the last complete water year prior to preparation of each five-year Plan update. Indicate which data set(s) are used for preparing the Plan.

In addition to the data set(s), the contractor may choose to submit data from a different year, or a combination of different years, that better represent average water conditions. This may be necessary if the conditions in the district in the year preceding the five-year Plan update were a deviation from the norm (i.e., the district received either below or above normal precipitation). These data are intended for planning purposes. For new plan elements, if data are not available during the preparation of this Plan, the contractor shall describe how the information will be obtained for the next Plan update.

**A. Surface Water Supply**: Describe the acre-foot amounts delivered to the contractor by each of the contractor's surface sources (includes local/water rights water) for the specified years. Describe any water quality limitations or management concerns associated with the identified water sources. Provide the amount of water received for each of the last ten years.

**B. Groundwater Supply**: Describe the general characteristics of the groundwater basin(s) that underlie the district. Provide a map that includes contractor-operated water wells, direction of groundwater flow, and managed groundwater recharge areas. Describe groundwater recharge programs (direct, indirect, or in lieu), groundwater banking programs, surface water storage programs, and other similar programs detailing the amount of project and non-project water utilized annually for such programs. If there is conjunctive use of surface and ground water, describe it. Attach a copy of the contractor's groundwater management plan or a description of the contractor's groundwater banking program.

**C. Other Water Supplies**: Identify any long-term water supplies not described above (drainage from upstream contractors, reclaimed urban waste water, transfer agreements, etc.).

**D. Source Water Quality Monitoring Practices**: If water quality problems exist, describe the water quality testing program (frequency of measuring and analyses performed) and which agencies conducted the water testing. Also, describe the contractor's role in the program.

**E. Water Uses within the District**:

*1. Agricultural*: Describe the type and acreage of crops grown in the district; include seasonal ET amounts, water required for cultural practices, and the leaching requirement for each crop. List the types of irrigation systems used for each crop.

*2. Urban*: Describe the urban water use, by customer type, within the district. Describe where applicable, the waste water collection and treatment systems, recycled water uses, and methods of disposal.

*3. Groundwater Management Plan/Banking Programs*: List the quantity of water used for planned groundwater recharge, including method of recharge and retrieval. Do not include incidental recharge, such as canal seepage or deep percolation due to excess irrigation unless the quantity recharged and the method of retrieval is specified.

*4. Transfers, Exchanges, Rescheduling, Purchases, or Sales*: Describe the source and quantity of water in any transfer, exchange, reschedule, purchase or sale in or out of the district, and for what uses. Describe any other water transactions, such as trades, wheeling, wet year/dry year exchanges, etc.

*5. Other*: Describe any other water uses.

**F. Outflow from the District**: Identify where outflow leaves the district, how it is measured, the measurement accuracy, and where the outflow goes. Describe any water quality monitoring programs for outflow water (frequency of measuring and analyses performed). Identify any constituents (selenium, pesticides, salinity, etc.) that limit reuse of the outflow water and how. Also provide a brief discussion of the district's involvement in Central Valley Regional Water Quality Control Board programs or requirements for remediating or monitoring any contaminants that would significantly degrade water quality in the receiving surface waters.

Section 3405 of the CVPIA states that all new, amended, and renewed CVP contracts after October 31, 1992, will provide that the contractor or agency be responsible for compliance with all State and Federal water quality standards applicable to surface and subsurface agricultural drainage discharge generated within its boundaries. Contractors included in the drainage problem area, as identified in "*A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990),"* should also complete Attachment C.

**G. Water Accounting**: Develop a water inventory for the contractor based on the last calendar year or the last water year prior to preparation of each five-year Plan revision. Indicate which dataset(s) is used for the inventory. If a contractor so chooses, a representative water supply year can also be included. The inventory should include the following:

*1. Quantify Contractors' Water Supplies*

a. Surface water supplies, imported and originating within the district, by month
b. Groundwater extracted by the district, by month
c. Estimated annual groundwater extracted by non-district parties (if records are not available, provide an estimate and basis for estimation)
d. Recycled water by month (water originating from a municipal waste-water treatment plant)
e. Other supplies by month

*2. Quantify Water Used*

a. Conveyance losses, including seepage, evaporation, and operational spills
b. Consumptive use by riparian vegetation
c. Applied irrigation water, crop ET, water used for leaching and cultural practices (frost protection, soil reclamation, etc.)
d. Urban water use
e. Groundwater recharge
f. Water exchanges, transfers and banking
g. Estimated deep percolation within the district
h. Flows to perched water table or saline sink
i. Total urban wastewater utilized within the system
j. Outflow water leaving the district
k. Other

*3. Overall Water Budget*

Compare total water estimated to be available for sale within the district with the total water actually sold by the district.

## Section 3: BMPs for Agricultural Contractors

**Intent**: To develop an implementation plan for agricultural BMPs that is proven to accomplish improved (more efficient) water management.

For the purposes of the Criteria, the Plan needs to describe the program that the contractor determines will best accomplish each BMP. The success of some of the practices will depend on cooperative work with other entities. There may be constraints to successful implementation of planned programs. Monitoring and updating will allow the contractor to modify planned programs that do not accomplish the BMP as designed.

### A. Critical BMPs for Agricultural Contractors

This section lists the BMPs that all contractors are to implement. Provide a description of how the BMP is being implemented and include time schedules, budgets, monitoring, and maintenance data for each BMP. The contractor must include the current year actual expenditures and a projected budget for the cost of implementing the BMPs for the three years following the Plan update.

*1. Water Measurement* - Measure the volume of water delivered by the contractor to each customer. Measurement is not required if a contractor receives only Class II water. Measure flows with devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 6 percent by volume. Three typical categories of measurement devices include: devices with totalizers, standard flow measurement devices, and non-standard but calibrated devices. Include frequency and date of last calibration.

*2. Designate the Water Conservation Coordinator* - Provide the job description and minimum qualifications. Job duties should include five-year plan preparation, implementation and annual updates. Include the coordinator's title, business address, business phone number, and business email address.

*3. Provide or Support the Availability of Water Management Services to Water Users* - Develop and conduct individual programs or cooperative programs with other contractors in regional programs. Some contractors may want to contract or arrange program delivery through consulting firms, cooperative extension, or others. Services may include, but are not limited to:

a. On-farm evaluations
   1) On-farm irrigation and drainage system evaluations using a mobile lab type assessment, and/or
   2) Timely field and crop specific water use information to the water user.

b. Normal year and real-time irrigation scheduling and crop ET information (e.g., California Irrigation Management Information System (CIMIS)).

c. Surface, ground, and drainage water quantity and quality data.

d. Agricultural water management educational programs and materials for farmers and staff, and the public (e.g., soil moisture and salinity monitoring; in-school awareness programs; Agwater software; efficient irrigation techniques, crop water budget and other approaches; program delivery via workshops, seminars, newsletters, field days and demonstrations, websites, etc.).

e. Other - provide details

*4. Pricing Structure*. Adopt a water pricing structure for contractor water users based (at least in part) on the measured quantity delivered.

*5. Evaluate and Improve Efficiencies of Contractor's Pumps*. Many contractors operate booster pumps or groundwater pumps as part of their delivery facilities. A program to evaluate and improve the efficiencies of such pumps can result in energy savings or peak load reductions, or reveal capacity limitations due to inefficient facilities. Over the long term, the contractor can reduce operational costs and improve operational efficiency.

**B. Exemptible BMPs for Agricultural Contractors**

Provide a description of how the BMP is being implemented and include time schedules, budgets, and monitoring results. Each contractor shall implement the following BMPs, unless the contractor has an approved exemption from Reclamation. The contractor is required to follow the exemption process (see Addendum A) to justify exemptions. Refer to Addendum B for example justifications for each exemptible BMP. Document the exemption in this section.

*1. Facilitate Alternative Land Use* - Facilitate alternative uses (voluntary, compensated) for lands with exceptionally high water duties, or whose irrigation contributes to significant problems such as drainage.

*2. Facilitate Use of Available Recycled Water that Otherwise Would Not be Used Beneficially, Meets all Health and Safety Criteria, and Does Not Cause Harm to Crops or Soils* - The use of recycled urban waste water for agricultural irrigation provides an opportunity for reuse of an available water supply. Reuse of urban waste water can be an important element in overall water management.

*3. Facilitate the Financing of Capital Improvements for On-Farm Irrigation Systems* - Financial aid to farmers may include cataloging available funding sources and procedures and/or obtaining funding, administering the program, and providing low-interest loans.

*4. Incentive Pricing* - Implement a pricing structure that promotes one or more of the following goals:

a) More efficient water use at the farm level
b) Conjunctive use of groundwater
c) Appropriate increase of groundwater recharge
d) Reduction in problem drainage
e) Improved management of environmental resources

f) Effective management of all water sources throughout the season by adjusting seasonal rates based on current conditions

*5. Canal Lining/Piping and Regulatory Reservoirs* -

a) Line or pipe distribution systems to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage
b) Construct regulatory reservoirs to improve distribution system delivery flexibility

*6. Increase Flexibility in Water Ordering By, and Delivery To, Water Users (within Operational Limits)* - Modify distribution facilities and controls to increase the reliability, consistency, and flexibility of water deliveries.

*7. Construct and Operate Contractor Spill and Tailwater Recovery Systems* - Construct facilities to capture and reuse district operational spills.

*8. Plan to Measure Outflow* - Measure the volume outflow with methods or devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 20 percent by volume. Identify spill locations, prioritize spill locations by quantity of spill, and determine best measurement method/cost. If outflow measurement has not yet been completed, submit funding proposal and provide the Estimated Cost and milestone schedule.

*9. Optimize Conjunctive Use* - Increase planned conjunctive use of surface and groundwater within the district. Conjunctive use usually includes a groundwater management Plan or banking program.

*10. Automate Distribution and/or Drainage System Structures* - Automation of distribution and/or drainage system structures may increase flexibility in water deliveries and increase the contractor's control over its water supplies, thus providing the opportunity to improve the efficiency of water use.

*11. Facilitate or Promote Water User Pump Testing and Evaluation* - Describe the program and number of pumps evaluated.

*12. Mapping*- Develop Geographic Information System (GIS) maps of the district's distribution system and drainage system. A comprehensive GIS database should include GPS locations of district facilities, inflow/outflow points, conveyance system, etc. as well as base datasets such as soils and hydrography. If digital mapping has not yet been completed, include the estimated cost and milestone schedule for implementing this BMP.

## Section 4: BMPs for Urban Contractors

**Intent**:
To develop an implementation plan for urban BMPs that have proven to accomplish improved (more efficient) water management.

These Criteria require contractors to implement BMPs under the CUWCC 2009 MOU. Under certain circumstances, a BMP may not be applicable to a contractor. Contractors will implement each BMP unless the contractor provides adequate documentation for an exemption. Foundational BMP 1.3, Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections, is not exemptible.

This part of the Plan identifies contractor-specific programs to accomplish the BMPs. It is understood that programs developed by wholesale agencies may not be implemented at the retail customer level, except within the contractor's retail service area. For the purposes of the Criteria, the Plan needs to describe the program that best accomplishes the BMP.

The success of some of the practices will depend on cooperative work with other entities. It is recognized that there may be constraints to successful implementation of planned programs. Monitoring and updating will allow the contractor to modify any planned programs that do not accomplish the BMP as designed.

### BMPs for Urban Contractors

This section lists the BMPs that all contractors are to implement. Provide a description of how the BMP is being implemented and include time schedules, budgets and monitoring, and maintenance data for each BMP. The contractor must include the current year actual expenditures and a projected budget for the cost of implementing the BMPs for the three years following the Plan update. Descriptions of the BMP targets and program designs are available in the Plan Guidebook and at the CUWCC website.

### Foundational BMPs

1. Utility Operations Programs
    - 1.1. Operations Practices
        - A.1) Conservation Coordinator
        - A.2) Water waste prevention
        - A.3) Wholesale agency assistance programs
    - 1.2. Water Loss Control
    - 1.3. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections
    - 1.4. Retail Conservation Pricing

2. Education Programs
    - 2.1. Public Information Programs
    - 2.2. School Education Programs

**Programmatic BMPs**

3. Residential
    - A.1) Residential assistance program
    - A.2) Landscape water survey
    - A.3) High-efficiency clothes washers (HECWs)
    - A.4) WaterSense Specification (WSS) toilets
    - A.5) WaterSense Specifications for residential development

4. Commercial, Industrial, and Institutional (CII)

5. Landscape

**Attachment A**
*Exemption Process*

**Intent**: To demonstrate in a clear and concise manner that a BMP is not cost-effective, not financially feasible, and not legally or environmentally possible for a contractor to implement. Only the BMPs in section 3B are exemptible for agricultural contractors. For urban contractors, **all BMPs are** exemptible except for Foundational BMP 1.3.

**Evaluation**: Some BMPs are not appropriate or possible for a contractor to implement. To document an exemption, the basis, rationale, and details for excluding a BMP must be provided. Such documentation must address, as appropriate, cost-effectiveness, financial feasibility, and environmental or legal constraints to BMP implementation. Urban BMP exemption requests should use the CUWCC exemption forms. All urban and agricultural exemption requests will be reviewed for completeness, accuracy, and appropriateness by either Reclamation or an independent contractor.

**Detail Expected in an Adequate BMP Exemption**

**Legal Constraints** - Due to legal constraints, the following must be detailed in order to justify a BMP exemption:

1. A list of any known laws, regulations, court decisions, or other legal constraints that make it illegal for the contractor to implement the BMP.
2. A list of the steps required to remove these constraints.
3. A description of what steps the contractor has taken to remove these constraints.
4. Documentation of efforts by the contractor to work with other entities that have the legal authority to carry out the BMP within the contractor's service area.

**Environmental Constraints** - In order to justify an exemption due to known adverse environmental impacts, the Plan must document critical environmental issues and known (qualitative and/or quantitative) negative impacts of the BMP, and an explanation of why effective mitigation of these impacts is not possible. If mitigation of the environmental impacts is possible, the practice must be implemented unless it can be exempted by another exemption category. For example, if the mitigation costs make the project economically infeasible, a discussion of the mitigation plan and necessary mitigation costs should be included as part of the economic analysis.

**Financial Constraints -** In order to adequately justify an exemption due to financial constraints, the Plan must clearly document the following:

1. The contractor’s funding needed to implement the BMP.
2. A discussion regarding why the contractor cannot finance the BMP through rate adjustments, assessments, etc.
3. A discussion of the contractor's reasonable efforts to secure funding from other entities that include, but are not limited to, lending institutions and bonding authorities, and an explanation of why these entities would not provide funding.

4. The required amount of a grant or subsidy necessary to feasibly implement the BMP if financing or partnerships could not be obtained. A benefit-cost analysis that demonstrates the costs to the contractor outweigh the benefits to the contractor over the life of the measure. The contractor must perform the analysis by comparing the present value of all benefits to the present value of all costs.

   Document the projected/estimated benefits and costs and the methodology for analysis (benefits and costs should be quantified to the extent possible). The analysis performed for each excluded BMP (from the contractor's perspective) must include, but is not limited to, the following benefits and costs:

   **Benefits**

   a) All capital costs avoided by the contractor which include, but are not limited to, the costs associated with the development of new supplies (studies, construction, labor, etc.), transportation, the required increase in storage, distribution capacity, wastewater facilities and treatment capacity, etc.
   b) Operation and maintenance (O&M) costs associated with the decrease in the production and distribution of water or the treatment and disposal of wastewater that include, but are not limited to, energy, labor, treatment, storage, drainage treatment and disposal, etc.
   c) Water purchases avoided by the contractor.
   d) Environmental costs avoided by the contractor.
   e) Environmental enhancements.
   f) Revenues from other entities that include, but are not limited to, revenue from the sale of water made available by the BMP, financial incentives received from other entities, etc.
   g) Other benefits to the contractor customers that include, but are not limited to, hydropower, improved crop yields, improved crop quality, labor savings, fertilizer savings, increased farm income, etc.

   **Costs**

   a) Capital expenditures incurred by the contractor for implementation of the BMP that include, but are not limited to, equipment, supplies, materials, construction, etc.
   b) O&M costs to plan, design, implement, enforce, and evaluate the practice.
   c) Financial incentives to customers.
   d) Costs to the environment (describe the nature of the negative impact(s) and potential losses to the environment).
   e) Other costs to the contractor.

   Several accepted benefit-cost analysis methodologies exist (e.g., California Energy Commission's Integrated Resource Planning Methodology, Generally Accepted Accounting Principles, AWMC's Net Benefit Analysis, etc.). A contractor is considered to be the best suited to evaluate their own economic situation with an appropriate methodology.

2. A discussion and quantification, to the extent possible, of other benefits associated with the implementation of the BMP that may be of interest to potential partners, but are not the direct, sole responsibility of the contractor.

## Addendum B

To establish that a BMP is not applicable (NA) to the contractor, the Plan should explain why the BMP does not apply to the contractor. This justification must be consistent with Section 1: Description of the District. Example justifications for each exemptible BMP are listed below. This list is not all inclusive.

**Exemptible BMPs for Agricultural Contractors**

1. *Facilitate alternative land use* - NA could include contractors without irrigable lands that have exceptionally high water duties or whose irrigation does not contribute to significant problems.

2. *Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not cause harm to crops or soils* - NA could include completely piped systems that do not have delivery constraints.

3. *Facilitate the financing of capital improvements for on-farm irrigation systems* - None identified.

4. *Incentive pricing* - Contractor that receives only Class II water.

5. *Canal lining/piping and regulatory reservoirs* - NA could include completely piped systems, unlined canal systems, sections which are used as part of a planned conjunctive use program, or completely piped systems that do not have delivery constraints.

6. *Increase flexibility in water ordering by, and delivery to, the water users within operational limits* - None identified.

7. *Construct and operate contractor spill and tailwater recovery systems* - NA could include completely piped systems that do not have delivery constraints.

8. *Plan to measure outflow* - NA could include no spill or tailwater leaves the district.

9. *Optimize conjunctive use* - NA could include contractors who do not overlie a useable groundwater basin and thus neither the contractor nor their customers pump or use ground water, and the contractor has no water supplies other than the contract supply.

10. *Automate canal structures* - NA could include completely piped systems which do not have delivery constraints.

11. *Facilitate or promote water user pump testing and evaluation* - NA could include districts that have no groundwater, lift or diversion pumps.

12. *Mapping -N*one identified

**Attachment C**

*Information Required of Contractors Located in a Drainage Problem Area*

The contractor's included in the drainage problem area, as identified in "A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990)," are listed by subarea below. If future editions of the drainage report revise the boundaries of a drainage problem area, or other factors used to determine which contractors are in a drainage problem area, Reclamation will revise Attachment A to conform to the current drainage report.

1. Reclamation contractors in the **Grasslands Subarea**: Broadview Water District, Central California Irrigation District, Del Puerto Water District, Firebaugh Canal Water District, Mercy Springs Water District, Pacheco Water District, Panoche Water District, San Luis Canal Company, and San Luis Water District.

2. Reclamation contractors in the **Westlands Subarea**: James Irrigation District, Tranquillity Irrigation District, and Westlands Water District.

3. Reclamation contractors in the **Tulare Subarea**: Alpaugh Irrigation District, Atwell Island Water District, Lower Tule River Irrigation District, and Pixley Irrigation District.

4. Reclamation contractors in the **Kern Subarea**: Alpaugh Irrigation District.

The contractors listed above shall describe which recommendations prescribed in "*A Management* Plan *for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990)"* have been incorporated in their water conservation programs to improve conditions in drainage problem areas. These recommendations include:

a) Source Control
b) Land Retirement
c) Drainage Water Treatment
d) Drainage Water Reuse
e) Shallow Groundwater Pumping
f) Evaporation Ponds

Provide a description and level of expenditure for each activity designed to address the recommendations of the San Joaquin Valley Drainage Program. Identify how implementation of the recommendations has or will substantially reduce deep percolation on drainage problem lands. Describe which recommendations have not been implemented and why.

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# APPENDIX B

## CCWD Major Facilities

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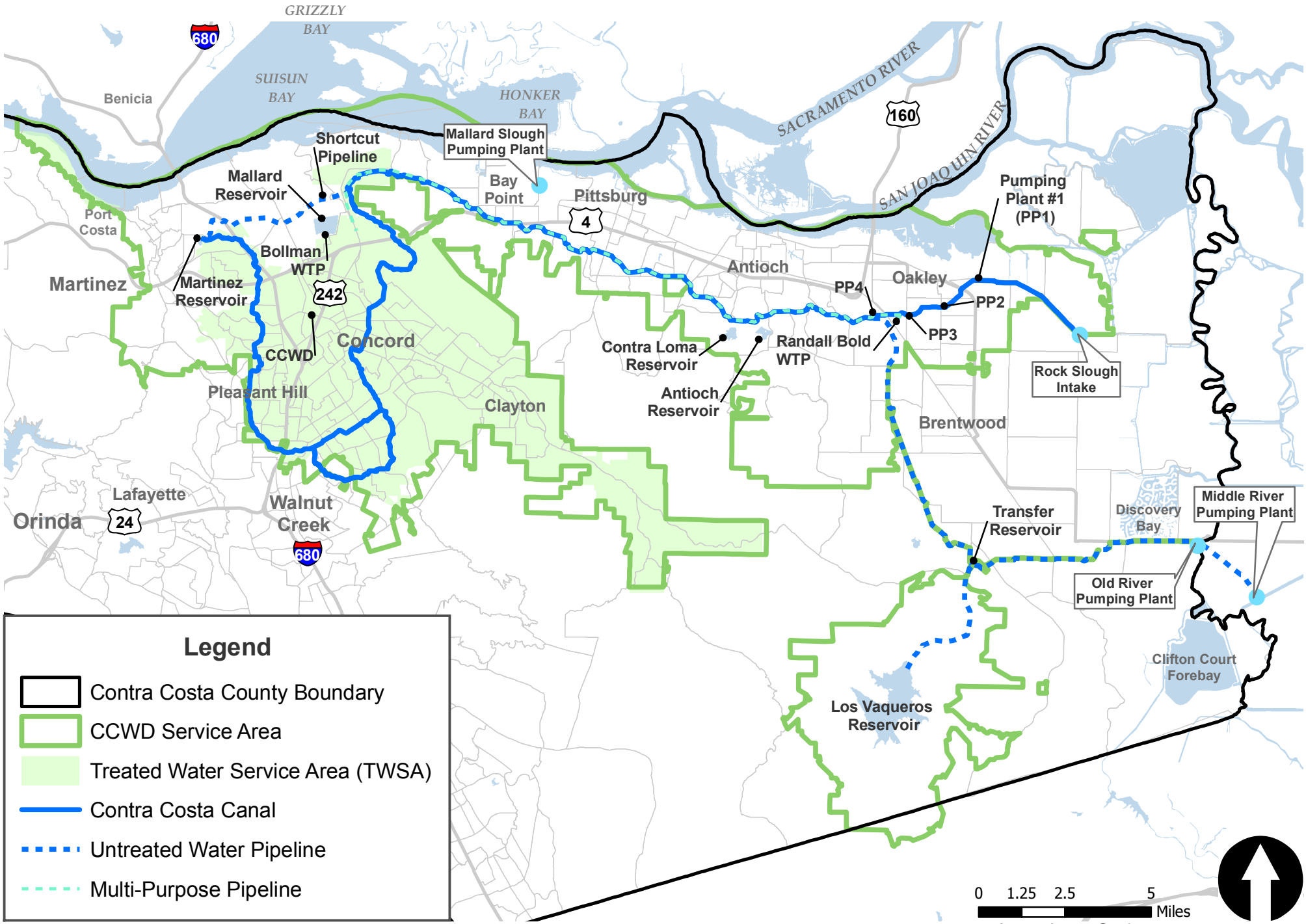
# CONTRA COSTA WATER DISTRICT
# SERVICE AREA MAP



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# APPENDIX C

## CCWD Code of Regulations – Sections 5.04.070-080, 5.12, 5.20.010-060, 5.44.010, 5.70

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shall not be liable for any loss, damage, or inconvenience to any person by reason of any shortage, reduction, interruption, or discontinuance of water service or the increase or decrease of water pressure, when the same is caused by an act of God, drought, an unavoidable accident, a shutdown, a disturbance or condition of any kind beyond the reasonable control of the District or when the same is reasonably necessary for the repair, maintenance, alteration, or extension of any facility of the District or of the Contra Costa Canal System of the United States Bureau of Reclamation. (Res. 90-84 Exh. A (part): Reg. 1(F))

**5.04.070 Water Shortages.**

The District reserves the right to fix the time and rate of flow of all deliveries of water to each of its customers and, in the event of shortage, to allocate between its customers the water supply from time to time available to the District and to establish such priorities to the available supply as the District shall consider necessary and in the public interest. (Res. 90-84 Exh. A (part): Reg. 1(G))

**5.04.075 Provision of Service for Affordable Housing**

In accordance with Water Code section 10631.1 and Government Code section 65589.7, it is the policy of the District to provide water service on to all applicants who comply with these Regulations and pay all requisite fees. In the event that new service connections are restricted by the Board of Directors, priority shall be given to applicants for water service to residential properties which include housing units affordable to lower income households, pursuant to administrative procedures developed and implemented by the General Manager. Restrictions on provision of new water service connections may be due to a declaration of a water shortage emergency condition under Water Code section 350 *et seq*., a determination by the Board of Directors based on the District's Urban Water Management Plan that sufficient water supply is not available to support the granting of all requests for new service, as provided in Government Code section 66473.7, a determination by the Board of Directors based on a written engineering report that the District does not have sufficient water treatment and/or distribution capacity to serve the needs of proposed development, or the imposition of a compliance order by the Department of Health Service prohibiting new connections. (Res. 06-18 Exh. A (part))

**5.04.080 Place of Use of Water.**

Except with the prior consent of the Board of Directors of the District ("the Board") and on such terms and conditions as the Board shall prescribe, all water furnished shall be used within the territory of the District and on land described in the application for service. (Res. 90-84 Exh. A (part): Reg. 1(H))

**5.04.090 Access to Facilities.**

By applying for or receiving water service from the District, the applicant, on behalf of the applicant and the owners, tenants and occupants of the land where the water is to be used, grants to the District, its employees and representatives, permission to enter said land at reasonable times for the purpose of installing, reading, inspecting, testing, maintaining, repairing or replacing any meter, meter box, pipe, valve, back-flow prevention device or other District facility on said land that is reasonably necessary to provide water service to said land. The owners and occupants of the land and the water users thereon shall have the duty to remove or cause to be removed any plant, structure or thing that obstructs or impairs said access. If after reasonable notice to the occupant of the land the obstruction is not removed, the District shall have the right in its discretion to remove it and to charge the costs thereby incurred and District overhead to the responsible customer of the District. (Res. 90-84 Exh. A (part): Reg. 1(I))

**5.04.100 Restrictions on Resale of Water.**

No water furnished by the District shall be resold, except:

A. Untreated (raw) water supplied to public or private water utilities under Section 5.20.010; or

B. Untreated (raw) water supplied to groups of property owners under Sections 5.20.030; or 5.20.040; or

C. Treated water that has been packaged in containers of five gallons or less; or

D. With the prior written authorization of the District. (Res. 90-84 Exh. A (part): Reg. 1(J))

**5.04.110 Unauthorized Use of Water.**

Anyone using water without having made application to the District for water service shall be held liable for the service from the date of any previous meter reading that most nearly coincides with the actual date the service was first used by such customer. (Res. 90-84 Exh. A (part))

**5.04.120 Annexation of Land to the District and Provision of Water Service to Annexed Lands.**

The annexation of lands to the District is governed by the provisions of the Cortese/Knox Local Government Reorganization Act of 1985 (California Government Code Section 56000 et seq., herein cited as the "Act"). This regulation supplements the provisions of the Act. In the event of any conflict between the provisions of the Act and this regulation, the former shall control.

The provision of water service to annexed land is governed by this regulation. Part A contains the processes for annexation of lands to the District. Part B contains the processes for obtaining water service for annexed lands from either the District or from one of its wholesale municipal customers and applies to lands that are inside or outside either the District Central Valley Project (CVP)

## Chapter 5.12

## CHARGES AND RATES-TREATED (POTABLE) WATER SERVICE

**Sections:**



### 5.12.010 Residential Single-Unit Service.

A. Applicable Service Connections.

1. A service connection shall be classified as residential single unit when any portion of the water from the connection is used to furnish treated water to a single-family dwelling (premise) unit for domestic purposes and the full service is recorded through one meter. A premise is determined per Section 5.32.020 Connections Subsection A.

B. Service and Demand Charge.

1. A charge for water service, irrespective of the quantity used, shall be applied to all residential single-unit connections to the District's treated water distribution system as follows:

| Meter Size | Charge Per Day |
|---|---|
| 5/8 inch | $0.5518 |
| ¾ inch | 0.8277 |
| *¾ inch | 0.5904 |
| 1 inch | 1.3795 |
| *1 inch | 0.5960 |
| 1.5 inch | 2.7590 |
| 2 inch | 4.4144 |
| 3 inch | 8.8288 |
| 4 inch | 13.7950 |

* Single Family Residential unit with inside sprinkler system required by local fire District. Necessity of sprinkler systems requires written confirmation from the local fire District.

**Lifeline Rates**

| Meter Size | Charge Per Day |
|---|---|
| 5/8 inch | $0.2759 |
| ¾ inch | 0.4139 |
| *¾ inch | 0.2952 |
| 1 inch | 0.6898 |
| *1 inch | 0.2980 |

* Single Family Residential unit with inside sprinkler system required by local fire District. Necessity of sprinkler systems requires written confirmation from the local fire District. (Effective 3-17-93)

2. The applicable normal rate shall be charged for all connections unless the person in whose name the service is registered applies for lifeline rates and meets all the following requirements:

a. The applicant is not less than sixty-two years of age or is receiving disability insurance benefits from the Social Security Administration; and

b. The total annual income of the applicant's household is below the very low income level for Contra Costa County as established by the Department of Housing and Urban Development; and

c. The meter size is not greater than one inch.

3. Applications for lifeline rates shall be on forms provided by the District and shall be submitted to the District's finance office. Eligibility for lifeline rates shall be conclusively determined by the Director of Finance or his/her designee.

C. Quantity Charge. For all water delivered, a charge of $2.8585 per hundred cubic feet shall be applied.

D. Energy Surcharge. A surcharge for energy shall be applied to all water delivered through each residential single-unit meter connection to the District's treated water distribution system as follows:

| Zone in Which Service Connection is Located | Hundred Cubic Feet |
|---|---|
| Zone No. 1 | $ 0.0767 |
| Zone No. 2 | 0.1514 |
| Zone No. 3 | 0.2120 |
| Zone No. 4 | 0.2763 |
| Zone No. 5 | 0.3889 |
| Zone No. 6 | 0.4497 |
| Zone No. 5E | 0.5614 |
| Zone No. 6E | 0.5614 |
| Zone No. 7 | 0.5614 |
| Zone No. 8 | 0.7545 |

E. Public Fire Protection Surcharge. A surcharge for public fire protection to defray the cost of furnishing water for fire protection shall be applied to each connection to the District's treated water distribution system as follows:

| Meter Size | Surcharge Per Day |
|---|---|
| 5/8 inch | $ 0.0323 |
| ¾ inch | 0.0323 |
| 1 inch | 0.0323 |
| 1.5 inch | 0.1615 |
| 2 inch | 0.2585 |
| 3 inch | 0.5169 |
| 4 inch | 0.8077 |

F. Backflow Prevention Surcharge. A surcharge shall be applied to each service connection with a backflow prevention device as follows:

| | Surcharge Per Day | |
|---|---|---|
| Meter Size | Double Check Valve or Air Gap System | Reduced Pressure Backflow Prevention Device |
| 5/8 inch | $ 0.0430 | $0.0656 |
| ¾ inch | 0.0644 | 0.0984 |
| 1 inch | 0.1074 | 0.1638 |
| 1.5 inch | 0.2148 | 0.3277 |
| 2 inch | 0.3436 | 0.5245 |
| 3 inch | 0.6874 | 1.0487 |
| 4 inch | 1.0740 | 1.6387 |

G. Residential Lifeline Surcharge. A surcharge of $0.0032 per day to defray the cost of providing the lifeline rate to low income senior citizens shall be applied to each connection to the District's treated water distribution system. Customers who are billed under Section 5.12.010(B)(2), Lifeline Rates for Service and Demand Charges, will not be billed the surcharge. Res. 11-03 Exh. A (part); Res. 09-01 Exh. A (part); Res. 04-03 Exh. A (part); (Res. 03-05 Exh. A (part); (Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 99-4 Exh. A (part); Res. 98-2 § 2 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exh. A (part); Res. 93-12 § 1, Exh. A; Res. 91-56 § 2, Exh. B (part); Res. 91-18 Exh. A (part); Res. 90-84 Exh. A (part); Res. 90-33; Reg. 4§1

**5.12.020 Residential Multiple-Unit Service.**

A. Applicable Service Connections. A service connection shall be classified as residential multiple unit when any portion of the water from the connection is used to furnish treated water to two or more dwelling units for domestic purposes and all service is provided through one service connection.

B. Service and Demand Charges.

1. A service charge of $0.0390 per day shall be paid for water service, irrespective of the quantity used, for all residential multiple-unit connections to the District's treated water distribution system.

2. A service charge of $0.2187 per dwelling unit per day shall be paid for water service, irrespective of the quantity used, for all residential multiple-unit connections to the District's treated water distribution system.

C. Quantity Charge. For all water delivered, a charge of $2.8585 per hundred cubic feet shall be applied.

D. Energy Surcharge. A surcharge for energy shall be applied to all water delivered through each residential multiple-unit meter connection to the District's treated water distribution system as follows:

| Zone in Which Service Connection is Located | Surcharge Per Hundred Cubic Feet |
|---|---|
| Zone No. 1 | $ 0.0767 |
| Zone No. 2 | 0.1514 |
| Zone No. 3 | 0.2120 |
| Zone No. 4 | 0.2763 |
| Zone No. 5 | 0.3889 |
| Zone No. 6 | 0.4497 |
| Zone No. 5E | 0.5614 |
| Zone No. 6E | 0.5614 |
| Zone No. 7 | 0.5614 |
| Zone No. 8 | 0.7545 |

E. Public Fire Protection Surcharge. A surcharge of $0.0355 per dwelling unit per day shall be applied for public fire protection in order to defray the cost of furnishing water for fire protection.

F. Backflow Prevention Surcharge. A surcharge shall be applied to each service connection with a backflow prevention device as follows:

| | Surcharge Per Day | |
|---|---|---|
| Meter Size | Double Check Valve or Air Gap System | Reduced Pressure Backflow Prevention Device |
| 5/8 inch | $ 0.0430 | $0.0656 |
| ¾ inch | 0.0644 | 0.0984 |
| 1 inch | 0.1074 | 0.1638 |
| 1.5 inch | 0.2148 | 0.3277 |
| 2 inch | 0.3436 | 0.5245 |
| 3 inch | 0.6874 | 1.0487 |
| 4 inch | 1.0740 | 1.6387 |
| 6 inch | 2.1479 | 3.2770 |
| 8 inch | 3.8701 | 5.9023 |
| 10 inch | 6.2294 | 9.5093 |
| 12 inch | 9.2450 | 14.1040 |
| Dual 1.5 inch | 0.4296 | 0.6556 |
| Duel 2 inch | 0.6874 | 1.0487 |

G. Residential Lifeline Surcharge. A surcharge of $0.0032 per day to defray the cost of providing the lifeline rate to low income senior citizens shall be applied to each connection to the District's treated water distribution system. Res. 11-03 Exh. A (part); Res. 09-01 Exh A. (part); Res. 04-03 Exh. A (part); (Res. 03-05 Exh. A (part); (Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 99-4 Exh. A (part); Res. 98-2 § 2 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exh. A (part); Res. 91-56 § 2 Exh. B (part); Res. 91-18 Exh. A (part); Res. 90-84 Exh. A (part); Reg. 4 § 2)

**5.12.030 Commercial Service.**

A. Applicable Service Connections. A service connection shall be classified as commercial if the connection provides treated water service to a retail store, restaurant, office building, service outlet, or other commercial enterprise.

B. Service and Demand Charge. A charge for water service, irrespective of the quantity used, shall be applied to all commercial connections to the District's treated water distribution system as follows:

| Meter Size | Charge Per Day |
|---|---|
| 5/8 inch | $0.5518 |
| ¾ inch | 0.8277 |
| 1 inch | 1.3795 |
| 1.5 inch | 2.7590 |
| 2 inch | 4.4144 |
| 3 inch | 8.8288 |
| 4 inch | 13.7950 |
| 6 inch | 27.5900 |
| 8 inch | 49.6620 |
| 10 inch | 80.0110 |
| 12 inch | 118.6370 |
| Dual 1.5 inch | 5.5180 |
| Dual 2 inch | 8.8288 |

C. Quantity Charge. For all water delivered, a charge of $2.8585 per hundred cubic feet shall be applied.

D. Energy Surcharge. A surcharge for energy shall be applied for all water delivered through each commercial meter connection to the District's treated water distribution system as follows:

| Zone in Which Service Connection is Located | Surcharge Per Hundred Cubic Feet |
|---|---|
| Zone No. 1 | $ 0.0767 |
| Zone No. 2 | 0.1514 |
| Zone No. 3 | 0.2120 |
| Zone No. 4 | 0.2763 |
| Zone No. 5 | 0.3889 |
| Zone No. 6 | 0.4497 |
| Zone No. 5E | 0.5614 |
| Zone No. 6E | 0.5614 |
| Zone No. 7 | 0.5614 |
| Zone No. 8 | 0.7545 |

E. Public Fire Protection Surcharge. A surcharge for public fire protection to defray the cost of furnishing water for fire protection shall be applied to each connection to the District's treated water distribution system as follows:

| Meter Size | Surcharge Per Day |
|---|---|
| 5/8 inch | $ 0.0323 |
| ¾ inch | 0.0485 |
| 1 inch | 0.0808 |
| 1.5 inch | 0.1615 |
| 2 inch | 0.2585 |
| 3 inch | 0.5169 |
| 4 inch | 0.8077 |
| 6 inch | 1.6154 |
| 8 inch | 2.9070 |
| 10 inch | 4.6848 |
| 12 inch | 6.9445 |
| Dual 1.5 inch | 0.3231 |
| Dual 2 inch | 0.5169 |

F. Backflow Prevention Surcharge. A surcharge shall be applied to each service connection with a backflow prevention device as follows:

| Meter Size | Double Check Valve or Air Gap System | Reduced Pressure Backflow Prevention |
|---|---|---|
| 5/8 inch | $ 0.0430 | $0.0656 |
| ¾ inch | 0.0644 | 0.0984 |
| 1 inch | 0.1074 | 0.1638 |
| 1.5 inch | 0.2148 | 0.3277 |
| 2 inch | 0.3436 | 0.5245 |
| 3 inch | 0.6874 | 1.0487 |
| 4 inch | 1.0740 | 1.6387 |
| 6 inch | 2.1479 | 3.2770 |
| 8 inch | 3.8701 | 5.9023 |
| 10 inch | 6.2294 | 9.5093 |
| 12 inch | 9.2450 | 14.1040 |
| Dual 1.5 inch | 0.4296 | 0.6556 |
| Duel 2 inch | 0.6874 | 1.0487 |

G. Residential Lifeline Surcharge. A surcharge of $0.0032 per day to defray the cost of providing the lifeline rate to low income senior citizens shall be applied to each connection to the District's treated water distribution system. Res. 11-03 Exh. A (part); Res. 09-01 Exh. A (part); Res. 04-03 Exh. A (part); (Res. 03-05 Exh. A (part); (Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 99-4 Exh. A (part); Res. 98-2 § 2 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exh. A (part); Res. 91-56 § 2 Exh. B (part); Res. 91-18 Exh. A (part); Res. 90-84 Exh. A (part); Reg. 4 § 3)

**5.12.040 Industrial Service.**

A. Applicable Service Connections. A service connection shall be classified as industrial if the connection provides treated water service to a manufacturing or processing operation with a demonstrated average water use greater than 500 hundred cubic feet per month.

B. Service and Demand Charge. A charge for water service, irrespective of the quantity used, shall be applied to all industrial connections to the District's treated water distribution system as follows:

| Meter Size | Surcharge Per Day |
|---|---|
| 5/8 inch | $0.5518 |
| ¾ inch | 0.8277 |
| 1 inch | 1.3795 |
| 1.5 inch | 2.7590 |
| 2 inch | 4.4144 |
| 3 inch | 8.8288 |
| 4 inch | 13.7950 |
| 6 inch | 27.5900 |
| 8 inch | 49.6620 |
| 10 inch | 80.0110 |
| 12 inch | 118.6370 |
| Dual 1.5 inch | 5.5180 |
| Dual 2 inch | 8.8288 |

C. Quantity Charge. For all water delivered, a charge of $2.8585 per hundred cubic feet shall be applied.

D. Energy Surcharge. A surcharge for energy shall be applied to all water delivered through each commercial meter connection to the District's treated water distribution system as follows:

| Zone in Which Service Connection is Located | Surcharge Per Hundred Cubic Feet |
|---|---|
| Zone No. 1 | $ 0.0767 |
| Zone No. 2 | 0.1514 |
| Zone No. 3 | 0.2120 |
| Zone No. 4 | 0.2763 |
| Zone No. 5 | 0.3889 |
| Zone No. 6 | 0.4497 |
| Zone No. 5E | 0.5614 |
| Zone No. 6E | 0.5614 |
| Zone No. 7 | 0.5614 |
| Zone No. 8 | 0.7545 |

E Public Fire Protection Surcharge. A surcharge for public fire protection to defray the cost of furnishing water for fire protection shall be applied to each connection to the District's treated water distribution system as follows:

| Meter Size | Surcharge Per Day |
|---|---|
| 5/8 inch | $ 0.0323 |
| ¾ inch | 0.0485 |
| 1 inch | 0.0808 |
| 1.5 inch | 0.1615 |
| 2 inch | 0.2585 |
| 3 inch | 0.5169 |
| 4 inch | 0.8077 |
| 6 inch | 1.6154 |
| 8 inch | 2.9070 |
| 10 inch | 4.6848 |
| 12 inch | 6.9445 |
| Dual 1.5 inch | 0.3231 |
| Dual 2 inch | 0.5169 |

F. Backflow Prevention Surcharge. A surcharge shall be applied to each service connection with a backflow prevention device as follows:

| | Surcharge Per Day | |
|---|---|---|
| Meter Size | Double Check Valve or Air Gap System | Reduced Pressure Backflow Prevention Device |
| 5/8 inch | $ 0.0430 | $0.0656 |
| ¾ inch | 0.0644 | 0.0984 |
| 1 inch | 0.1074 | 0.1638 |
| 1.5 inch | 0.2148 | 0.3277 |
| 2 inch | 0.3436 | 0.5245 |
| 3 inch | 0.6874 | 1.0487 |
| 4 inch | 1.0740 | 1.6387 |
| 6 inch | 2.1479 | 3.2770 |
| 8 inch | 3.8701 | 5.9023 |
| 10 inch | 6.2294 | 9.5093 |
| 12 inch | 9.2450 | 14.1040 |
| Dual 1.5 inch | 0.4296 | 0.6556 |
| Duel 2 inch | 0.6874 | 1.0487 |

G. Residential Lifeline Surcharge. A surcharge of $0.0032 per day to defray the cost of providing the lifeline rate to low income senior citizens shall be applied to each connection to the District's treated water distribution system. Res. 11-03 Exh. A(part); Res. 09-01 Exh. A (part); Res. 04-03 Exh. A (part); (Res. 03-05 Exh. A (part); (Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 99-4 Exh. A (part); Res. 98-2 § 2 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exh. A (part); Res. 91-56 § 2 Exh. B (part); Res. 91-18 Exh. A (part); Res. 90-84 Exh. A (part); Reg. 4 § 4)

### 5.12.050 Public Authority Service

A. Applicable Service Connections. A service connection shall be classified as public authority if the connection provides treated water service to a building or structure owned and operated by a federal, state, county, city, or other local public authority. This includes water service to the public fire department, public libraries, and military agencies.

B. Service and Demand Charge. A charge for water service, irrespective of the quantity used, shall be applied to all public authority connections to the District's treated water distribution system as follows:

| Meter Size | Charge Per Day |
|---|---|
| 5/8 inch | $0.5518 |
| ¾ inch | 0.8277 |
| 1 inch | 1.3795 |
| 1.5 inch | 2.7590 |
| 2 inch | 4.4144 |
| 3 inch | 8.8288 |
| 4 inch | 13.7950 |
| 6 inch | 27.5900 |
| 8 inch | 49.6620 |
| 10 inch | 80.0110 |
| 12 inch | 118.6370 |
| Dual 1.5 inch | 5.5180 |
| Dual 2 inch | 8.8288 |

C. Quantity Charge. For all water delivered, a charge of $2.8585 per hundred cubic feet shall be applied.

A. Energy Surcharge. A surcharge for energy shall be applied to all water delivered through each public authority meter connection to the District's treated water distribution system as follows:

| Zone in Which Service Connection is Located | Surcharge Per Hundred Cubic Feet |
|---|---|
| Zone No. 1 | $ 0.0767 |
| Zone No. 2 | 0.1514 |
| Zone No. 3 | 0.2120 |
| Zone No. 4 | 0.2763 |
| Zone No. 5 | 0.3889 |
| Zone No. 6 | 0.4497 |
| Zone No. 5E | 0.5614 |
| Zone No. 6E | 0.5614 |
| Zone No. 7 | 0.5614 |
| Zone No. 8 | 0.7545 |

E. Public Fire Protection Surcharge. A surcharge for public fire protection to defray the cost of furnishing water for fire protection shall be applied to each connection to the District's treated water distribution system as follows:

| Meter Size | Surcharge Per Day |
|---|---|
| 5/8 inch | $ 0.0323 |
| ¾ inch | 0.0485 |
| 1 inch | 0.0808 |
| 1.5 inch | 0.1615 |
| 2 inch | 0.2585 |
| 3 inch | 0.5169 |
| 4 inch | 0.8077 |
| 6 inch | 1.6154 |
| 8 inch | 2.9070 |
| 10 inch | 4.6848 |
| 12 inch | 6.9445 |
| Dual 1.5 inch | 0.3231 |
| Dual 2 inch | 0.5169 |

F. Backflow Prevention Surcharge. A surcharge shall be applied to each service connection with a backflow prevention device as follows:

| | Surcharge Per Day | |
|---|---|---|
| Meter Size | Double Check Valve or Air Gap System | Reduced Pressure Backflow Prevention Device |
| 5/8 inch | $ 0.0430 | $0.0656 |
| ¾ inch | 0.0644 | 0.0984 |
| 1 inch | 0.1074 | 0.1638 |
| 1.5 inch | 0.2148 | 0.3277 |
| 2 inch | 0.3436 | 0.5245 |
| 3 inch | 0.6874 | 1.0487 |
| 4 inch | 1.0740 | 1.6387 |
| 6 inch | 2.1479 | 3.2770 |
| 8 inch | 3.8701 | 5.9023 |
| 10 inch | 6.2294 | 9.5093 |
| 12 inch | 9.2450 | 14.1040 |
| Dual 1.5 inch | 0.4296 | 0.6556 |
| Dual 2 inch | 0.6874 | 1.0487 |

G. Residential Lifeline Surcharge. A surcharge of $0.0032 per day to defray the cost of providing the lifeline rate to low income senior citizens shall be applied to each connection to the District's treated water distribution system.

H. Educational Entities or State Agencies. Educational entities or state agencies will be charged the same nondiscriminatory rates, fees and charges as comparable nonpublic users pursuant to Government Code section 54999.1(f). Upon a request of an educational entity or state agency for a determination of whether any rate, fee or charge complies with Government Code section 54999.1(f), such determination shall be made by the General Manager. Should the General Manager determine that a rate, fee or charge should be adjusted, the amount of adjustment shall also be negotiated on behalf of the District by the General Manager, who shall recommend that the Board adopt an adjustment to such rate, fee or charge for the requesting educational entity or state agency that complies with the provisions of Government Code 54999.3. Res. 11-03 Exh. A (part);Res. 09-01 Exh. A (part); Res. 04-03 Exh. A (part); (Res. 03-05 Exh. A (part); (Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 99-4 Exh. A (part); Res. 98-2 § 2 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exh. A (part); Res. 91-56 § 2 Exh. B (part); Res. 91-18 Exh. A (part); Res. 90-84 Exh. A (part); Reg. 4 § 5); Res 06-02 Exh. A (part)

**5.12.060 Residential Irrigation Service.**

A. Applicable Service Connections. A service connection shall be classified as residential irrigation if the connection is used solely for treated water irrigation

purposes on parcels of land with one or more residential dwelling units.

B. Service and Demand Charge. A charge for water service, irrespective of the quantity used, shall be applied to all residential irrigation connections to the District's treated water distribution system as follows:

| Meter Size | Charge Per Day |
|---|---|
| 5/8 inch | $0.5518 |
| ¾ inch | 0.8277 |
| 1 inch | 1.3795 |
| 1.5 inch | 2.7590 |
| 2 inch | 4.4144 |
| 3 inch | 8.8288 |
| 4 inch | 13.7950 |
| 6 inch | 27.5900 |
| 8 inch | 49.6620 |
| 10 inch | 80.0110 |
| 12 inch | 118.6370 |
| Dual 1.5 inch | 5.5180 |
| Dual 2 inch | 8.8288 |

C. Quantity Charge. For all water delivered, a charge of $2.8585 per hundred cubic feet shall be applied.

D. Energy Surcharge. A surcharge for energy shall be applied to all water delivered through each residential single-unit meter connection to the District's treated water distribution system as follows:

| Zone in Which Service Connection is Located | Surcharge Per Hundred Cubic Feet |
|---|---|
| Zone No. 1 | $ 0.0767 |
| Zone No. 2 | 0.1514 |
| Zone No. 3 | 0.2120 |
| Zone No. 4 | 0.2763 |
| Zone No. 5 | 0.3889 |
| Zone No. 6 | 0.4497 |
| Zone No. 5E | 0.5614 |
| Zone No. 6E | 0.5614 |
| Zone No. 7 | 0.5614 |
| Zone No. 8 | 0.7545 |

B. Backflow Prevention Surcharge. A surcharge shall be applied to each service connection with a backflow prevention device as follows:

| eter Size | Surcharge Per Day: Double Check Valve or Air Gap System | Surcharge Per Day: Reduced Pressure Backflow Prevention Device |
|---|---|---|
| 5/8 inch | $ 0.0430 | $ 0.0656 |
| ¾ inch | 0.0644 | 0.0984 |
| 1 inch | 0.1074 | 0.1638 |
| 1.5 inch | 0.2148 | 0.3277 |
| 2 inch | 0.3436 | 0.5245 |
| 3 inch | 0.6874 | 1.0487 |
| 4 inch | 1.0740 | 1.6387 |
| 6 inch | 2.1479 | 3.2770 |
| 8 inch | 3.8701 | 5.9023 |
| 10 inch | 6.2294 | 9.5093 |
| 12 inch | 9.2450 | 14.1040 |
| Dual 1.5 inch | 0.4296 | 0.6556 |
| Dual 2 inch | 0.6874 | 1.0487 |

F. Residential Lifeline Surcharge. A surcharge of $0.0032 per day to defray the cost of providing the lifeline rate to low income senior citizens shall be applied to each connection to the District's treated water distribution system. Res. 11-03 Exh. A (part); Res. 09-01 Exh A (part); Res. 04-03 Exh. A (part); (Res. 03-05 Exh. A (part); (Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 99-4 Exh. A (part); Res. 98-2 § 2 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exh. A (part); Res. 91-56 § 2 Exh. B (part); Res. 91-18 Exh. A (part); Res. 90-84 Exh. A (part); Reg. 4 § 6)

### 5.12.070 Commercial and Industrial Irrigation Service.

A. Applicable Service Connections. A service connection shall be classified as commercial or industrial irrigation if the connection is used solely for treated water irrigation purposes on parcels with commercial or industrial enterprises.

B. Service and Demand Charge. A charge for water service, irrespective of the quantity used, shall be applied to all commercial or industrial irrigation connections to the District's treated water distribution system as follows:

| Meter Size | Charge Per Day |
|---|---|
| 5/8 inch | $0.5518 |
| ¾ inch | 0.8277 |
| 1 inch | 1.3795 |
| 1.5 inch | 2.7590 |
| 2 inch | 4.4144 |
| 3 inch | 8.8288 |
| 4 inch | 13.7950 |
| 6 inch | 27.5900 |
| 8 inch | 49.6620 |
| 10 inch | 80.0110 |
| 12 inch | 118.6370 |
| Dual 1.5 inch | 5.5180 |

| | |
|---|---|
| Dual 2 inch | 8.8288 |

C. Quantity Charge. For all water delivered, a charge of $2.8585 per hundred cubic feet shall be applied.

D. Energy Surcharge. A surcharge for energy shall be applied to all water delivered through each residential single-unit meter connection to the District's treated water distribution system as follows:

| Zone in Which Service Connection is Located | Surcharge Per Hundred Cubic Feet |
|---|---|
| Zone No. 1 | $ 0.0767 |
| Zone No. 2 | 0.1514 |
| Zone No. 3 | 0.2120 |
| Zone No. 4 | 0.2763 |
| Zone No. 5 | 0.3889 |
| Zone No. 6 | 0.4497 |
| Zone No. 5E | 0.5614 |
| Zone No. 6E | 0.5614 |
| Zone No. 7 | 0.5614 |
| Zone No. 8 | 0.7545 |

E. Backflow Prevention Surcharge. A surcharge shall be applied to each service connection with a backflow prevention device as follows:

| | Surcharge Per Day | |
|---|---|---|
| eter Size | Double Check Valve or Air Gap System | Reduced Pressure Backflow Prevention Device |
| 5/8 inch | $ 0.0430 | $ 0.0656 |
| ¾ inch | 0.0644 | 0.0984 |
| 1 inch | 0.1074 | 0.1638 |
| 1.5 inch | 0.2148 | 0.3277 |
| 2 inch | 0.3436 | 0.5245 |
| 3 inch | 0.6874 | 1.0487 |
| 4 inch | 1.0740 | 1.6387 |
| 6 inch | 2.1479 | 3.2770 |
| 8 inch | 3.8701 | 5.9023 |
| 10 inch | 6.2294 | 9.5093 |
| 12 inch | 9.2450 | 14.1040 |
| Dual 1.5 inch | 0.4296 | 0.6556 |
| Dual 2 inch | 0.6874 | 1.0487 |

F. Residential Lifeline Surcharge. A surcharge of $0.0032 per day to defray the cost of providing the lifeline rate to low income senior citizens shall be applied to each connection to the District's treated water distribution system. Res. 11-03 Exh A (part); Res. 09-01 Exh A (part); Res. 04-03 Exh. A (part); Res. 03-05 Exh. A (part); Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 99-4 Exh. A (part); Res. 98-2 § 2 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exh. A (part); Res. 91-56 § 2 Exh. B (part); Res. 91-18 Exh. A (part); Res. 90-84 Exh. A (part); Reg. 4 § 7)

**5.12.080 Public Authority Irrigation Service.**

A. Applicable Service Connections. A service connection shall be classified as public authority irrigation if the connection is used solely for treated water irrigation purposes on federal, state, city and other local government or public agency properties. Public water service to parks, playgrounds, and street medians shall be included in this class of service.

B. Service and Demand Charge. A charge for water service, irrespective of the quantity used, shall be applied to all commercial or industrial irrigation connections to the District's treated water distribution system as follows:

| Meter Size | Charge Per Day |
|---|---|
| 5/8 inch | $0.5518 |
| ¾ inch | 0.8277 |
| 1 inch | 1.3795 |
| 1.5 inch | 2.7590 |
| 2 inch | 4.4144 |
| 3 inch | 8.8288 |
| 4 inch | 13.7950 |
| 6 inch | 27.5900 |
| 8 inch | 49.6620 |
| 10 inch | 80.0110 |
| 12 inch | 118.6370 |
| Dual 1.5 inch | 5.5180 |
| Dual 2 inch | 8.8288 |

C. Quantity Charge. For all water delivered, a charge of $2.8585 per hundred cubic feet shall be applied.

D. Energy Surcharge. A surcharge for energy shall be applied to all water delivered through each residential single-unit meter connection to the District's treated water distribution system as follows:

| Zone in Which Service Connection is Located | Surcharge Per Hundred Cubic Feet |
|---|---|
| Zone No. 1 | $ 0.0767 |
| Zone No. 2 | 0.1514 |
| Zone No. 3 | 0.2120 |
| Zone No. 4 | 0.2763 |
| Zone No. 5 | 0.3889 |
| Zone No. 6 | 0.4497 |
| Zone No. 5E | 0.5614 |
| Zone No. 6E | 0.5614 |
| Zone No. 7 | 0.5614 |
| Zone No. 8 | 0.7545 |

E. Backflow Prevention Surcharge. A surcharge shall be applied to each service connection with a backflow prevention device as follows:

| | Surcharge Per Day | |
|---|---|---|
| **Meter Size** | **Double Check Valve or Air Gap System** | **Reduced Pressure Backflow Prevention Device** |
| 5/8 inch | $ 0.0430 | $0.0656 |
| ¾ inch | 0.0644 | 0.0984 |
| 1 inch | 0.1074 | 0.1638 |
| 1.5 inch | 0.2148 | 0.3277 |
| 2 inch | 0.3436 | 0.5245 |
| 3 inch | 0.6874 | 1.0487 |
| 4 inch | 1.0740 | 1.6387 |
| 6 inch | 2.1479 | 3.2770 |
| 8 inch | 3.8701 | 5.9023 |
| 10 inch | 6.2294 | 9.5093 |
| 12 inch | 9.2450 | 14.1040 |
| Dual 1.5 inch | 0.4296 | 0.6556 |
| Duel 2 inch | 0.6874 | 1.0487 |

F. Residential Lifeline Surcharge. A surcharge of $0.0032 per day to defray the cost of providing the lifeline rate to low income senior citizens shall be applied to each connection to the District's treated water distribution system.

G. Educational Entities or State Agencies. Educational entities or state agencies will be charged the same nondiscriminatory rates, fees and charges as comparable nonpublic users pursuant to Government Code section 54999.1(f). Upon a request of an educational entity or state agency for a determination of whether any rate, fee or charge complies with Government Code section 54999.1(f), such determination shall be made by the General Manager. Should the General Manager determine that a rate, fee or charge should be adjusted, the amount of adjustment shall also be negotiated on behalf of the District by the General Manager, who shall recommend that the Board adopt an adjustment to such rate, fee or charge for the requesting educational entity or state agency that complies with the provisions of Government Code 54999.3. (Res. 11-03 Exh A (part); (Res. 06-02 Exh A (part)Res. 04-03 Exh. A (part); (Res. 03-05 Exh. A (part); (Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 99-4 Exh. A (part); Res. 98-2 § 2 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exh. A (part); Res. 91-56 § 2 Exh. B (part); Res. 91-18 Exh. A (part); Res. 90-84 Exh. A (part); Reg. 4 § 8)

**5.12.090 Private Fire Protection Service.**

A. Applicable Service Connections. A service connection shall be classified as private fire protection if the connection is used solely for standby service for a privately owned fire protection system.

B. Service and Demand Charge. A charge for water availability and emergency service shall be applied to all private fire system connections to the District's treated water distribution system as follows:

| **Detector Size** | **Charge Per Day** |
|---|---|
| 2 inch | $0.0204 |
| 3 inch | 0.0404 |
| 4 inch | 0.0632 |
| 6 inch | 0.1261 |
| 8 inch | 0.2270 |
| 10 inch | 0.3662 |
| 12 inch | 0.5308 |

C. Backflow Prevention Surcharge. A flat rate surcharge of $0.6874 per day shall be applied to each service connection with a double check valve backflow prevention device and $1.0487 per day shall be applied to each service with a reduced pressure backflow prevention device.. (Res. 11-03 Exh. A (part); (Res. 09-01 Exh. A (part); Res. 03-05 Exh. A (part); (Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 99-4 Exh. A (part); Res. 98-2 § 2 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exh. A (part); Res. 91-56 § 2 Exh. B (part); Res. 91-18 Exh. A (part); Res. 90-84 Exh. A (part); Reg. 4 § 9)

**5.12.100 Temporary Service.**

A. Applicable Service Connections and Considerations. A service connection shall be classified as temporary if the connection is made to a District fire hydrant or other temporary point of access and is determined by the District to be for temporary purposes.

1. Facilities Reserve Charges. When the District determines that the duration of a proposed service will be temporary, it may furnish service on a temporary basis without payment of a Facilities Reserve Charge. The Facilities Reserve Charge shall be paid only for service for human consumption or domestic use and will be based on the District's estimate of the normal meter size of the place where the water is used. If such service is discontinued within one year, the Facilities Reserve Charge will be refunded without interest. If the service is continued for longer than one year, the Facilities Reserve Charge may be credited to any Facilities Reserve Charge thereafter imposed on the place where the water is used.

2. Installation and Removal Charges-Security Deposits. Applicants for temporary service will pay the District's estimate of the cost of installing and removing the service connection and a reasonable security deposit for the meter.

B. Service Through Fire Hydrants.

1. Conditions of Service. Service will be furnished through fire hydrants only if the District finds that circumstances exist, which make it impractical to furnish service through a normal connection. The District may designate the particular hydrant or hydrants at which service will be furnished. Water will be furnished for use

outside Improvement District No. 1 only on specific authorization of the Board of Directors for reasons of public health or safety or cases involving severe economic hardship.

2. Service for Human Consumption and Domestic Use. Water for human consumption or domestic use will be delivered from fire hydrants only for use at locations to which it is not feasible to extend the District's distribution system. Feasibility shall be reviewed and determined by the District annually. Each person transporting water from fire hydrants for human consumption shall furnish proof that such person holds all required licenses and permits and is in compliance with all health regulations of all federal, state, and local governmental agencies having jurisdiction.

3. Metering. Portable meters furnished by the District will measure all water delivered through fire hydrants.

4. Applications. Applications for service from fire hydrants shall be made on forms furnished by the District.

C. Service and Demand Charge.

1. A charge for water service, irrespective of the quantity used, shall be applied to temporary connections to the District's treated water distribution system as follows:

| Meter Size | Charge Per Day |
|---|---|
| 5/8 inch | $ 0.5518 |
| ¾ inch | 0.8277 |
| 1 inch | 1.3795 |
| 1.5 inch | 2.7590 |
| 2 inch | 4.4144 |
| 3 inch | 8.8288 |
| 4 inch | 13.7950 |
| 6 inch | 27.5900 |
| 8 inch | 49.6620 |
| 10 inch | 80.0110 |
| 12 inch | 118.6370 |
| Dual 1.5 inch | 5.5180 |
| Dual 2 inch | 8.8288 |

* Service used exclusively for residential human consumption and domestic use shall be billed at the 5/8-inch meter size rate.

D. Quantity Charge. For all water delivered, a charge of $2.8585 per hundred cubic feet shall be applied.

E. Energy Surcharge. A surcharge of $0.5614 per hundred cubic feet for energy shall be applied to all water delivered through each temporary connection to the District's treated water distribution system irrespective of the zone in which the temporary service connection is located.

F. Public Fire Protection Surcharge. A surcharge for public fire protection to defray the cost of furnishing water for fire protection shall be applied to each connection to the District's treated water distribution system as follows:

| Meter Size | Surcharge Per Day |
|---|---|
| 5/8 inch | $ 0.0323 |
| ¾ inch | 0.0485 |
| 1 inch | 0.0808 |
| 1.5 inch | 0.1615 |
| 2 inch | 0.2585 |
| 3 inch | 0.5169 |
| 4 inch | 0.8077 |
| 6 inch | 1.6154 |
| 8 inch | 2.9070 |
| 10 inch | 4.6848 |
| 12 inch | 6.9445 |
| Dual 1.5 inch | 0.3231 |
| Dual 2 inch | 0.5169 |

* Service used exclusively for residential human consumption and domestic use shall be billed at the 5/8-inch meter size rate.

G. Backflow Prevention Surcharge. A surcharge shall be applied to each temporary service connection with a backflow prevention device as follows:

| | Surcharge Per Day | |
|---|---|---|
| eter Size | Double Check Valve or Air Gap System | Reduced Pressure Backflow Prevention Device* |
| 5/8 inch | $ 0.0430 | $ 0.0656 |
| ¾ inch | 0.0644 | 0.0984 |
| 1 inch | 0.1074 | 0.1638 |
| 1.5 inch | 0.2148 | 0.3277 |
| 2 inch | 0.3436 | 0.5245 |
| 3 inch | 0.6874 | 1.0487 |
| 4 inch | 1.0740 | 1.6387 |
| 6 inch | 2.1479 | 3.2770 |
| 8 inch | 3.8701 | 5.9023 |
| 10 inch | 6.2294 | 9.5093 |
| 12 inch | 9.2450 | 14.1040 |
| Dual 1.5 inch | 0.4296 | 0.6556 |
| Dual 2 inch | 0.6874 | 1.0487 |

* Service used exclusively for residential human consumption and domestic use shall be billed at the 5/8-inch meter size rate.

Res. 11-03 Exh. A (part); Res. 09-01 Exh. A (part); Res. 04-03 Exh. A (part); (Res. 03-05 Exh. A (part); (Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 99-4 Exh. A (part); Res. 98-2 § 2 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exh. A (part); Res. 91-56 § 2 Exh. B (part); Res. 91-18 Exh. A (part); Res. 90-84 Exh. A (part); Reg. 4 § 10)

**5.12.110 Wholesale Treated (potable) Water Service.**

A. Applicable Service Connections: A service connection shall be classified as wholesale treated water service if the connection provides treated (potable) water

service to a publicly owned or investor-owned utility, or to another person, for resale purposes.

B. Wholesale Treated (potable) Water Charges and Rates: Notwithstanding the provisions of this Chapter set forth above (consisting of Sections 5.12.010 through and including 5.12.100), the District may, from time to time, enter into agreements with publicly owned or investor-owned utilities, or with other persons, for the sale of wholesale treated (potable) water. The methodology and calculation of wholesale treated water charges and rates shall be set forth in each such agreement, and shall, to the degree feasible, use the same cost components and criteria as those used to compute charges and rates for retail treated (potable) water service. (Res. 98-2 § 2 (part))

## Chapter 5.20

## CHARGES AND RATES - UNTREATED (RAW) WATER SERVICE

**Sections:**



### 5.20.010 Wholesale Municipal Service.

A. Applicable Service Connections. A service connection shall be classified as wholesale municipal if the connection provides raw water service to a municipality or other public agency.

B. Monthly Service Charges. A monthly service charge of $165.15 shall be applied for each connection to the District's system.

C. Quantity Charge. A charge of $1.6951 per thousand gallons of use shall be applied to service connections.

D. Demand Charges - Recording Meter. Customers having a service connection with a recording meter shall pay the following demand charges:

1. Maximum day demand charge of $2.0130 per gallon per minute that shall be applied on a monthly basis to the highest measured excess of maximum day use over average daily use. Maximum day use means the highest measured flow in gallons per minute over any twenty-four-hour period. Average daily use means the average flow in gallons per minute over the 12-month period ending with the billing month during which the maximum day occurred. "Highest measured excess of maximum day use over average daily use" shall be ascertained at each billing period. The highest measured excess shall be that which occurs during the period after service was commenced but not longer than the most recent thirty-six months of service.

2. Maximum hour demand charge of $1.6800 per gallon per minute that shall be applied on a monthly basis to the highest measured excess of maximum hour use over maximum day use. Maximum hour use means the highest measured flow in gallons per minute over any hour. Maximum day use shall be the same as that then currently used for computation of the maximum day demand charge. "Highest measured excess of maximum hour use" shall be ascertained at each billing period. The highest measured excess shall be that which occurs during the period after service was commenced but not longer than the most recent thirty-six months of service.

E. Demand Charge – Non-recording Meter. Customers having a service connection with a non-recording meter shall pay a monthly demand charge of $1.4640 per gallon per minute that shall be applied on a monthly basis to the customers' maximum monthly use in gallons per minute. Maximum monthly use means the highest measured flow in gallons per minute occurring in any month during the period after service was commenced but not longer than the most recent thirty-six months of service.

F. A facilities component applies to wholesale municipal customers who issue new or larger meters. The amount of the facilities component shall be as set forth in the tables presented below in subsection 5.20.010 F.1. The facilities component shall be effective immediately, but shall become operative on the respective dates set forth in such tables. The table that is applicable to a new or larger meter issued by a wholesale municipal customer shall be determined by the period in which the new or larger meter is issued, and the applicable column within each table shall be determined by the Service Area in which the new or larger meter is located.

1. For each new meter issued by a wholesale municipal customer within each service area during the previous month, such customer shall remit to the District on a monthly basis, no later than fifteen days following the end of the month, the amount specified in the applicable table below:

| Meter Size | Amount in Service Area A** | Amount in Service Area B*** | Amount in Service Area C**** |
|---|---|---|---|
| 5/8 inch | $ 4,873 | $ 5,850 | $ 4,121 |
| ¾ inch | 7,310 | 8,776 | 6,181 |
| ¾ and 1 inch* | 4,873 | 5,850 | 4,121 |
| 1 inch | 12,183 | 14,626 | 10,302 |
| 1-1/2 inch | 24,366 | 29,252 | 20,605 |
| 2 inch | 38,985 | 46,804 | 32,967 |
| 3 inch | 77,970 | 93,607 | 65,934 |
| 4 inch | 121,829 | 146,261 | 103,023 |
| 6 inch | 243,658 | 292,522 | 206,045 |
| 8 inch | 438,584 | 526,540 | 370,881 |
| 10 inch | 706,607 | 848,315 | 597,531 |
| 12 inch | 1,047,728 | 1,257,846 | 885,994 |
| Dual 1-1/2 inch | 48,732 | 58,504 | 41,209 |
| Dual 2 inch | 77,970 | 93,607 | 65,934 |

* This amount is applicable to single-family residential units that could otherwise be served through a 5/8 inch meter, but are required by the local fire protection District or fire department to have an inside sprinkler system. Written confirmation from the local fire protection District or fire department is required.

** Except for those meters to which the first note (*) is applicable, these amounts are 95 percent of an amount determined not to exceed the estimated reasonable cost of providing service to the new connection through the District's untreated (raw) water system.

*** Except for those meters to which the first note (*) is applicable, these amounts are 95 percent of an amount determined not to exceed the estimated reasonable cost of providing service to the new connection through the District's untreated (raw) water system.

**** Except for those meters to which the first note (*) is applicable, these amounts are 95 percent of an amount determined not to exceed the estimated reasonable cost of providing service to the new connection through the District's untreated (raw) water system.

Beginning on February 1, 1998, each wholesale municipal customer who is required to pay a facilities component in the amount set forth above in Subsection 5.20.010 F.1 shall distribute, to each person or entity requesting issuance of a new meter, a form provided by the District requesting information sufficient to enable the District to determine whether such person or entity shall be entitled to a credit, called the "land levy tax credit," in an amount that will reflect the present value of the prior land levy tax payments made for the property to be served by such new meter. Each wholesale municipal customer shall collect such forms, completed by the person or entity requesting issuance of a new meter, and forward them to the District with payment of the facilities component set forth above in Subsection 5.20.010 F.1.

Upon written request by persons or entities who have completed the forms, the District shall determine whether sufficient information has been presented to demonstrate that such person or entity is entitled to the land levy tax credit. The information to be presented by such customer shall, at a minimum, be sufficient to enable the District to determine (1) when the property to be served by each new meter issued by that wholesale municipal customer was annexed to the District, and (2) the acreage to be served by each new meter so issued. If sufficient information has been presented, such person or entity shall be entitled to a land levy tax credit. The District shall present to such person or entity a written determination of the amount of the land levy credit, if any, for which sufficient information has been provided, and the amount specified in such written determination shall be paid by the District to such person or entity within 60 days after the written determination is presented.

The land levy tax credit varies depending upon when each particular property was annexed into the District in accordance with the following schedule, which sets forth the cumulative amount of the land levy tax credit for each acre to be served by the new meter.

| **Fiscal Year of Annexation** | **Cumulative Land Levy Tax Credit per Acre Served** |
|---|---|
| 1976-77 | $59 |
| 1977-78 | $55 |
| 1978-79 | $52 |
| 1979-80 | $49 |
| 1980-81 | $46 |
| 1981-82 | $44 |
| 1982-83 | $43 |
| 1983-84 | $41 |
| 1984-85 | $38 |
| 1985-86 | $35 |
| 1986-87 | $32 |
| 1987-88 | $29 |
| 1988-89 | $26 |
| 1989-90 | $23 |
| 1990-91 | $20 |
| 1991-92 | $16 |
| 1992-93 | $13 |
| 1993-94 | $10 |
| 1994-95 | $ 8 |
| 1995-96 | $ 5 |
| 1996-97 | $ 2 |

The amounts set forth in the preceding table shall be prorated based upon the actual amount of land served by each individual meter, provided that the determination may, at the District's discretion, be performed for all or some portion of the meters issued by the wholesale municipal customer during the previous month. The land levy tax credit applicable for years following fiscal year 1997-98 shall be determined by the General Manager, using the same cost components and criteria used to compute the amounts of the credit set forth in the preceding table.

2. For each larger meter issued by a wholesale municipal customer within the specified Service Area during the previous month, such customer shall remit to the District on a monthly basis, no later than fifteen days following the end of the month, the difference between the respective amounts set forth in the applicable table (presented above in subsection 5.20.010 F.1) for the new meter and for the meter being replaced, above, less any applicable credit or credits. The land levy tax credit shall be applicable only if no prior land levy tax credit was provided for the property to be served by the larger meter; in such case the amount of the credit shall be determined pursuant to the land levy tax table for the pertinent acreage and year of annexation. The amount of the Facilities Reserve Charge Credit shall be the difference between the per-connection credit applicable for the new meter and the per-connection credit applicable to the size of meter being replaced, as set forth on the preceding table.

3. The purpose of this component is to pay a portion of the estimated reasonable cost of providing service through the District's untreated (raw) water

system to the wholesale municipal customer for the new connection, including expenditures to create, finance, and preserve the major capital improvements which now comprise the District's raw water system and those improvements which are expected to be added to that system. (Res 11-03 Exh. A (part); (Res. 09-01 Exh. b (part); Res. 04-03 Exh. A (part); Res. 03-30 Exh. A (part); (Res. 03-05 Exh. A (part); Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 99-38 Exhibit C; Res. 98-2 § 3 (part); Res. 97-32 Exhibit C; 97-3 (part); Res. 96-13 Exhibit B; Res. 95-55 (part); Res. 95-9 Exhibit B; Res. 95-6 Exhibit B (part); Res. 93-24 Exhibit A (part); Res. 91-56 § 3, Exhibit C (part); Res. 90-84 Exhibit A (part); Reg. 5 § 1)

**5.20.020 Industrial Service.**

A. Applicable Service Connections. A service connection shall be classified as industrial if the connection provides untreated water service to an industrial connection for use other than irrigation purposes.

B. Monthly Service Charges. A monthly service charge of $165.15 shall be applied to each connection to the District's system.

C. Quantity Charge. A charge of $1.6951 per thousand gallons of use shall be applied to service connections.

D. Demand Charges - Recording Meter. Customers having a service connection with a recording meter shall pay the following demand charges:

1. Maximum day demand charge of $1.6064 per gallon per minute that shall be applied on a monthly basis to the highest measured excess of maximum day use over average daily use. Maximum day use means the highest measured flow in gallons per minute over any twenty-four-hour period. Average daily use means the average flow in gallons per minute over the twelve-month period ending with the billing month during which the maximum day occurred. "Highest measured excess of maximum day use over average daily use" shall be ascertained at each billing period. The highest measured excess shall be that which occurs during the period after service was commenced but not longer than the most recent thirty-six months of service.

2. Maximum hour demand charge of $1.7709 per gallon per minute that shall be applied on a monthly basis to the highest measured excess of maximum hour use over maximum day use. Maximum hour use means the highest measured flow in gallons per minute over any hour. Maximum day use shall be the same as that then currently used for computation of the maximum day demand charge. "Highest measured excess of maximum hour use" shall be ascertained at each billing period. The highest measured excess shall be that which occurs during the period after service was commenced but not longer than the most recent thirty-six months of service.

E. Demand Charge - Non-recording Meter. Customers having a service connection with a non-recording meter shall pay a monthly demand charge of $0.5767 per gallon per minute that shall be applied on a monthly basis to the customers' maximum monthly use in gallons per minute. Maximum monthly use means the highest measured flow in gallons per minute occurring in any month during the period after service was commenced but not longer than the most recent thirty-six months of service. (Res. 11-03 Exh A (part));Res. 09-01 Exh. A (part); Res. 04-03 Exh. A (part); (Res. 03-05 Exh. A (part); Res.02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 98-2 § 3 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exhibit B (part); Res. 91-56 § 3, Exhibit C (part); Res. 90-84 Exhibit A (part); Reg. 5 § 2)

**5.20.030 Landscape Irrigation Service.**

A. Applicable Service Connections. A service connection shall be classified as landscape irrigation if the connection provides untreated water service to a connection used exclusively for non-agricultural landscape purposes. Service provided exclusively for dust control and fire service purposes shall be classified as landscape irrigation.

B. Monthly Service Charges. A monthly service of $23.21 charge shall be applied to each metered connection to the District's system.

C. Quantity Charge. A charge of $1.6951 per thousand gallons of use shall be applied for all metered service connections.

D. Monthly Demand Charge. For each metered connection, a charge of $2.1802 shall be applied per gpm of the maximum monthly use occurring since the effective date service is commenced but not longer than the most recent thirty-six months of service.

E. Unmetered Service. For each unmetered service connection, an annual charge of $87.51 per 0.05 acres but not less than $175.01 shall be paid based upon the area of land to which unmetered raw water landscape irrigation service is furnished (rounded up to the nearest 0.01 acres).

The annual rate for initial year of service will be prorated for the number of months from and including the month in which the flat rate service application is accepted by the District to the end of the irrigation season for that year. An irrigation season is defined as April 1 through and including November 30 of each calendar year.

F. Area of Land Served. For the purposes of determining the annual rate, the area of the land to which the unmetered raw water landscape irrigation service is furnished shall be deemed to be the irrigated area of a parcel of land served by the District with raw water for the purpose of irrigation. The District will determine the amount of land being irrigated with raw water as part of

the application process for unmetered raw water landscape irrigation service. Should a customer request that the District update its determination of the irrigated area of a parcel of land being served by the District, the District will, upon receipt of the customer's written application and the customer's payment of a fee of $24.00 determine the area of the land within the parcel to which the District provides unmetered raw water landscape irrigation service. Res. 11-03 Exh. A (part); Res. 09-01 Exh. A (part); Res. 04-03 Exh. A (part); Res 03-10 Exh. A (part); (Res. 03-05 Exh. A (part); Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 98-2 § 3 (part); Res. 97-3 (part); Res. 95-8 Exhibit A; Res. 91-56 § 3, Exhibit C (part); Res. 90-84 Exhibit A (part); Reg. 5 § 3)

**5.20.040 Agricultural Irrigation Service.**

A. Applicable Service Connections. A service connection shall be classified as agricultural irrigation if the connection provides untreated water service to a connection used exclusively for commercial production of food or fiber crops or watering livestock on a parcel of land not less than two acres in area.

B. Annual Service Charges. For service connections used exclusively for livestock purposes, an annual charge of $52.50 shall be applied. For service connections used for agricultural irrigation purposes, an annual service charge of $19.79 shall be applied per acre or fraction thereof irrigated, but not less than $51.27.

C. Quantity Charge. A charge of $93.66 per acre-foot of use shall be applied for all water delivered. If the quantity is not metered, it shall be estimated by the District. Res. 11-03 Exh A. (part) Res. 09-01 Exh A. (part); Res. 04-03 Exh. A (part); (Res. 03-05 Exh. A (part); Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 91-56 § 3, Exhibit C (part); Res. 90-84 Exhibit A (part); Reg. 5 § 4)

**5.20.050 Temporary Service.**

A. Applicable Service Connections. A service connection shall be classified as temporary service if the connection provides untreated water service to a connection determined by the District to be temporary in nature.

B. Monthly Service Charges. A monthly service charge of $22.59 shall be applied for each connection to the District's system.

C. Quantity Charge. A charge of $1.6951 per thousand gallons of use shall be applied for all service connections.

D. Monthly Demand Charge. For each connection, a charge of $0.5559 shall be applied for each gallon per minute of maximum monthly use occurring since the effective date service is commenced but not longer than the most recent thirty-six months of service and not less than 10 gpm.

E. Payment. Charges for temporary service shall be paid in advance on the basis of the District's estimate of the quantity to be used. Water used in excess of such estimate shall be paid for on receipt of invoice. Should it be determined by the District on termination of service that actual use was less than estimated, the District shall refund the amount paid for such difference. (Res.11-03 Exh. A (part); (Res. 09-01 Exh. A (part); Res. 04-03 Exh. A (part); (Res. 03-05 Exh. A (part); Res. 02-01 Exh. A (part); Res. 01-04 Exh. A (part); Res. 00-01 Exh. A (part); Res. 98-2 § 3 (part); Res. 97-3 (part); Res. 95-55 (part); Res. 95-6 Exhibit B (part); Res. 91-56 § 3, Exhibit C (part); Res. 90-84 Exhibit A (part); Reg. 5 § 5)

**5.20.060 Surcharge for Service from Lateral Pipeline**

A. An annual surcharge in addition to the charges imposed by Sections 5.20.010 through 5.20.040 shall be applied to each service through a lateral pipeline from the Contra Costa Canal operated by the District for the purpose of recovering a portion of the capital cost thereof reimbursable to the United States Bureau of Reclamation. The surcharge shall be based on the design capacity of the customer's turnout as determined by the District and expressed in tenths of a cubic foot per second multiplied by the amount for each lateral as set forth below:

| Lateral at Milepost (Amount per 1/10 cu. ft./sec) | Amount Per Tenth of a Cubic Foot (Per Second) |
|---|---|
| Milepost 5.3 | $ 31.00 |
| Milepost 6.2 | 23.00 |
| Milepost 7.1 | 40.00 |
| Milepost 7.3 | 21.00 |
| Milepost 9.1 | 14.00 |
| Milepost 14.0 | 90.00 |
| Milepost 25.6 | 47.00 |
| Milepost 36.6 | 24.00 |
| Milepost Y-2.6 | 27.00 |

B. In addition, all above laterals will have a minimum annual charge of three dollars. (Res. 02-04 Exh. A (part); Res. 95-6 Exh. B (part); Res. 91-56 § 3, Exh. C (part); Res. 90-84 Exh. A (part); Reg 5 §6)

**5.20.070 Standby Service.**

A. Applicable Service Connections. A service connection shall be classified as standby service if the connection provides untreated water as a standby or water availability service for uses that do not regularly recur such as fire fighting.

B. Annual Service Charge. An annual charge based on the area of land to which service is furnished of $241.68 per acre or fraction thereof shall be applied for standby service. Res. 11-03 Exh. A (part); Res. 91-56 § 3, Exhibit C (part); Res. 90-84 Exhibit A (part); Res. 90-36 Reg. 5 § 7)

# Chapter 5.44

# WATER CONSERVATION

**Sections:**



## 5.44.010 Prevention of Waste.

If the District finds that a customer is wasting water by failing to repair a leak in the customer's water system, by permitting water to run off the customer's premises, or by failing to put water received from the District to reasonable and beneficial use, the District shall notify the customer to stop the waste. If the customer fails to take prompt, reasonable action to stop the waste, the District may in its discretion suspend delivery of water to the customer or install a device to restrict the flow of water to the customer until the District determines that there will be no further waste of water by the customer. (Res. 90-84 Exh. A (part): Reg. 11(A))

## 5.44.020 Encouraged.

The District encourages the installation of water-conserving landscaping and water-saving devices in plumbing and water-using appliances. (Res. 90-84 Exh. A (part): Reg. 11(B))

## Chapter 5.70

## WHEELING OF WATER THROUGH DISTRICT FACILITIES

**Sections:**



### 5.70.010 General.

Under the provisions of Section 1810 et seq. Of California Water Code, a bona fide transferor of water may use water facilities of a local agency which have unused capacity, for the period of time when such capacity is available, if fair compensation is paid for that use and if statutorily specified conditions are met. This chapter is intended to set forth the terms and conditions under which the District will consider entering into contracts for individual wheeling transactions in response to requests from persons or public agencies seeking to use the unused capacity of all or a portion of the Contra Costa Water District's conveyance system (conveyance system), including but not limited to pumping plants, canals, pipelines, reservoirs and appurtenant facilities, for the transfer of water. (Res. 99-2 Exh. A (part))

### 5.70.020 Requests for Use of Unused Conveyance Capacity.

Any person or any public agency (meaning any city, county, district, other local authority, or public body of or within this state) which has a contract for the sale or purchase of water which is conditioned upon the acquisition of conveyance facility capacity to convey that water may request the right to use up to seventy percent of the unused capacity of the conveyance system. All requests for the right to use the conveyance system shall be considered by the District's Board of Directors. In order to be considered by the District, each such request shall be in writing and shall include:

A. A copy of the agreement or contract for the transfer of water for which unused conveyance system capacity is required. The request shall specify the source and the amount of water sought to be conveyed, with the volume expressed in acre-feet and the rate expressed in cubic feet per second on an annual, monthly, and daily average and peak basis, and on an hourly peak basis. The time period or periods for which permission to use conveyance system capacity is sought shall also be expressed in detail. If the request is for use of less than the entire conveyance system and all of its related facilities, the request shall specify the portion or portions of the conveyance system it seeks to use. If District approval of the request would require the construction or installation of any facilities, these shall be described in detail, including the purpose, nature, and location of such facilities.

B. A detailed description of the quality of the water sought to be conveyed. If the requesting party believes that treatment of the transferred water will be required to avoid diminution of the quality of the water which would otherwise be in the conveyance system, the request shall include details of the nature and location of the proposed treatment techniques or methodologies which it proposes to employ to protect the water quality interests of the District. If the requesting party will treat the transferred water before it is put to beneficial use, the location and capacity of the treatment facilities, and the treatment technology to be used, shall be described in detail in the request.

C. An acknowledgment by the requesting party that unused conveyance system capacity will be available only at those times and in those amounts which the District, in its sole discretion, determines. The request shall include the further acknowledgment that because of the manner in which the District's conveyance system and the Los Vaqueros Reservoir have been integrated in District water supply operations, the availability of unused conveyance systems capacity at any time may be a function of the periodic operational considerations for both facilities, as well as for the District's Bollman Treatment Plant and the Randall Bold Treatment Plant.

D. An acknowledgment that the paramount purpose for which the conveyance system is to be used is for the District to convey water to its present and future wholesale and retail water customers. The request shall also specifically acknowledge that any permission which may be granted for the right to use the conveyance shall be expressly subject and subordinate to the right of the District to fully utilize the conveyance system capacity for the benefit of its customers if required for District water system purposes or in the event of an emergency, as defined in Water Code Sec. 1811 (b), and which includes a sudden occurrence such as a storm, flood, fire, or an unexpected equipment outage impairing the ability of the District or its customers to make or receive water deliveries. (Res. 99-2 Exh. A (part))

**5.70.030 General Manager's Report and Recommendation and Board Findings.**

The District's Board of Directors shall receive and consider a written report and recommendation from the General Manager regarding the request, including all engineering, economic, environmental and other relevant factors. Prior to authorizing District staff to negotiate with the requesting party regarding terms and conditions of a contract for the requested use of the District's conveyance system, and based upon its consideration of the request, of appropriate environmental documentation provided by the requesting party, and of the General Manager's report and recommendation, the board shall find and determine:

A. That the commingling of the water proposed to be transferred will not result in a diminution of the beneficial uses of the conveyance system and related facilities for District purposes;

B. That there will be no diminution of the quality of water in the District's conveyance system as a result of the transfer, and that if necessary and in order to prevent any such diminution, the transferor shall, as a condition of its contract with the District and at its sole expense, provide for treatment of the water to be transferred in order to guarantee that the quality of the transferred water will be substantially the same quality as that which would be in the conveyance system if no transfer occurred, so that there will be no diminution in the quality of raw or treated water served to customers by the District;

C. That the requesting party has provided adequate assurance to the District, including determinations by the appropriate regulatory agencies, that the proposed use of the District's conveyance system can be made without injuring any legal user of water, and without unreasonably affecting fish, wildlife, or other instream beneficial uses, and without unreasonably affecting the overall economy or the environment of the county from which the water is being transferred; and

D. That the proposed transfer will not adversely affect the water supply, water quality, water service, or economic interests of present and future District wholesale and retail customers, for whose benefit the District retains the paramount right to use of the District's entire conveyance system for water transmission and distribution purposes. (Res. 99-2 Exh. A (part))

**5.70.040 Contract Terms and Conditions.**

Any contract for use of the unused capacity of the District's conveyance system shall include the following terms and conditions:

A. A detailed description of the purpose and place of the use or uses to which the transferred water will be put, and identification of the source or sources of water for these uses if or when transferred water or conveyance system capacity are not available.

1. If the request is by a wholesale municipal customer of the District, the contract shall describe the area to be served, the present and future customers intended to be served with transferred water, and present and anticipated water demands. The contract shall also include the requesting party's plan for serving water to this area and these customers in the event that sufficient transferred water or unused conveyance system capacity are not available for any period of time, including but not limited to the use of capacity by the District to meet the increased water demands of its current and future customers. To the extent that the requesting party's plan includes reliance on the District for all or any portion of the water which will be required to meet all or any portion of the requesting party's present or future demands, the contract shall include the requesting party's specific acknowledgment of and agreement to pay the transfer capacity availability charge described in Section 5.70.040(B)(3), as well as all other reasonable costs related to the wheeling transaction.

2. If the request is by any person or public agency other than a wholesale municipal raw water customer, including a raw water customer of the District, or a person or entity which is not a District customer, the contract shall describe the area to be served, the purpose of the beneficial use or uses proposed to be made with the transferred water, the current and historic source or sources of water used to serve these uses, and the anticipated water demand during the period of the transfer. The contract shall also include the requesting party's plan for obtaining water to serve the area and the use or uses in question in the event that sufficient transferred water or unused District conveyance system capacity are not available for any period of time, including but not limited to the use of capacity by the District to meet the increased water demands of its current and future customers. To the extent that the requesting party's plan includes reliance on the District for all or any portion of the water required to meet all or any portion of the requesting party's demands, the contract shall include the requesting party's specific acknowledgment of and agreement to pay the transfer capacity availability charge described in Section 5.70.040(B)(3), as well as all other reasonable costs related to the wheeling transaction.

B. The charges to be paid by any party whose request to use available unused District conveyance

system capacity is approved by the District shall include the following:

1. The reasonable costs incurred by the District related to the wheeling transaction, including the actual cost of all staff time and the costs of consultants or counsel for analysis of, assistance with, or administration of the transaction, and all costs related to the environmental documentation and any permits or approvals required for or in connection with the wheeling transaction.

2. An allocated share of reasonable capital, operations, maintenance, and replacement costs of the District's conveyance system, including power costs, which are reasonably related to the wheeling transaction. Because unused conveyance system capacity is a direct function of the manner in which Los Vaqueros Reservoir and the conveyance system are operationally integrated, the reasonable costs shall include an appropriate allocated share of Los Vaqueros Project debt service, capital, operations, maintenance, and replacement costs.

3. If the requesting party will rely on the District for water in the event transferred water or unused conveyance system capacity is not available, the contract will provide for the payment of a transfer capacity availability charge, which shall represent the reasonable cost to the District to maintain the capacity to provide water to make up for the transferred water when it is not available for any other reason. This capacity charge shall consist of an allocated share of reasonable capital, maintenance and replacement costs of the facilities in which capacity has been constructed and must be maintained by the District to meet the demand which will be created when transferred water or unused District conveyance system capacity are not available to the requesting party, and which capacity therefore will not be available for use by the District to meet the needs of other District customers.

C. All environmental documentation, permits, and approvals for the proposed wheeling transaction shall be the responsibility of the party making the request for the right to use available unused District conveyance system capacity. If the wheeling transaction is part of a larger project for which another public agency is the lead agency under the California Environmental Quality Act (CEQA), the District shall serve as a responsible agency for environmental documentation regarding the decision of the board of directors on the request and as to the availability of unused District conveyance system capacity. If the party making the request to the District is a public agency, then the requesting party shall be the lead agency regarding CEQA. If the requesting party is a private entity, and the wheeling transaction is not part of a larger project for which CEQA compliance is required, the District will be lead agency. Any permits or approvals required from other governmental agencies, including consideration by the United States Bureau of Reclamation, review or consultation under the Federal or the California Endangered Species Act, or processing by the State Water Resources Control Board shall be the responsibility of the requesting party. (Res. 99-2 Exh. A (part))

**5.70.050 Wheeling to Assist in Times of Emergency.**

In the event of an emergency, as defined in Water Code Section 1811 (b), which is declared by an appropriate governmental agency and which can be wholly or partially alleviated by making temporary use of the conveyance system to transfer water, the General Manager may make the findings and determinations set forth in Section 5.70.030 and may thereafter approve a request for temporary use of the conveyance system for up to forty-five days. Permission to use the conveyance system due to an emergency for more than forty-five days may only be granted by the Board of Directors. Prior to approval of temporary use, the General Manager shall review and consider all of the factors described in Section 5.70.040(A). An agreement shall be required, and shall provide for the District to receive fair compensation for the temporary use, including the elements set forth in Section 5.70.040(B). Regulatory approvals required for the temporary use shall be the responsibility of the party requesting the right to use the conveyance system. (Res. 99-2 Exh. A (part))

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# APPENDIX D

## Reclamation Approval Letter

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# United States Department of the Interior

BUREAU OF RECLAMATION
South-Central California Area Office
Tracy Office (CVP)
RR 1 Box 35
Byron CA 94514-9614

IN REPLY
REFER TO:
TO-446
WTR-4.00

JUL 27 1995

JUL 1995
Received
Walter J. Bishop
General Manager

RECEIVED
AUG 01 1995
RUTH M. HOBBS
CONSTRUCTION DEPT.

Mr. Walter J. Bishop
Contra Costa Water District
PO Box H20
Concord, California 94524

Subject: Amendatory Contract No. I75r-3401 Between the United States and Contra Costa Water District Providing for Water Service and Facilities Repayment

Dear Mr. Bishop:

Your Customer Measurement Report dated November 26, 1994, was submitted to comply with Article 5A(a) and (b) of the subject amendatory contract. The report provides substantial compliance with Article 5A of the subject amendatory contract and with BMP #A-1 of the USBR Water Conservation Plan and satisfies reporting requirements of the contract.

Also, the reporting modifications submitted with your letter of February 8, 1995, to comply with the new amendatory contract provisions, have been reviewed and approved and are in compliance with the contract provisions.

If you have any questions, please contact Marge Kresha of my staff at (209) 836-6259.

Sincerely,

Buddy J. Smith

Buddy J. Smith
Supervisory Repayment Specialist

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# APPENDIX E

## Amended Ordinance 09-01, an Ordinance of the Board of Directors of Contra Costa Water District Authorizing Drought Management Program Regulations

## and

## Water Shortage Contingency Plan

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# AMENDED ORDINANCE 09-01

## AN ORDINANCE OF THE BOARD OF DIRECTORS OF CONTRA COSTA WATER DISTRICT AUTHORIZING DROUGHT MANAGEMENT PROGRAM REGULATIONS

WHEREAS, the Contra Costa Water District ("District") is a County Water District organized and existing pursuant to the County Water District Law, Division 12 of the California Water Code beginning with Section 30000, and is empowered thereunder to provide untreated and treated water service to its customers in northern, central and eastern Contra Costa County; and

WHEREAS, Article X, Section 2 of the California Constitution declares that waters of the State are to be put to beneficial use, that waste, unreasonable use, or unreasonable methods of use of water be prevented, and the water be conserved for the public welfare, and further declares that it is self-executing; and

WHEREAS, the District is authorized pursuant to Sections 31024, 31026, 31027, 31028, 31029, and 31035 of the County Water District Law, to establish and enforce rules and regulations for the sale, distribution, and use of water; to enact rules and regulations to restrict the use of water during any water shortage condition caused by drought or other threatened or existing water shortage, and to prohibit the wastage of District water or use of District water during such periods for any purpose other than household uses or such other restricted uses as may be determined to be necessary by the District, and may prohibit use of such water during such periods for specific uses which the District may from time to time find to be non-essential; and

WHEREAS, District Regulations 5.04.020, 5.04.030, 5.04.060, and 5.04.070 are generally applicable to all District water service customers, and expressly provide for the District to adopt rules and regulations regarding the use of water delivered by the District, the prevention of waste or unreasonable use during times of water shortage, and compliance with District rules and regulations; and

WHEREAS, California is facing a significant water crisis resulting from three consecutive dry years, the severity of the shortage on 2009 water supplies will depend on the amount of precipitation and snow pack levels the balance of this winter, on June 4, 2008 the Governor formally declared a condition of statewide drought and encouraged local water agencies to promote water conservation, and on February 27, 2009 the Governor proclaimed a state of emergency due to drought conditions and requested urban water users to immediately increase their water conservation activities to reduce their individual water use by 20 percent; and

WHEREAS, on March 4, 2009 the District's Board of Directors made the findings required under Water Code Sections 31026 and 31028, adopted Resolution No. 09-03, a copy of which is attached to this ordinance as Exhibit A and incorporated herein,

declaring that a water shortage condition now exists within the District, and directed the General Manager to present a proposed ordinance for consideration and first reading by the Board on March 18, 2009; and

WHEREAS, as of March 4, 2009, the date of adoption of Resolution No. 09-03, and based on current and historic water supply availability documented in the April 1, 2009 Docket regarding the Drought Management Program, and the associated Drought Management Program staff report provided as Attachment 2 to the Docket, and incorporated herein, the District projects that its water supplies will be severely impacted in 2009 as a result of current drought conditions.

WHEREAS, all written comments concerning the proposed Drought Management Program prior to or at the April 1, 2009 Public Hearing, all written responses thereto provided by the General Manager or his designee, all oral comments received by the Board of Directors on March 18, 2009, and all written or oral comments received at the April 1, 2009 Public Hearing have been fully considered by the Board of Directors.

NOW THEREFORE BE IT ORDAINED by the Board of Directors of the Contra Costa Water District as follows:

1. The rules and regulations attached hereto as Exhibit B and incorporated herein are necessary to conserve water, promote effective water supply planning, assure reasonable and beneficial use of water, prevent waste and unreasonable use of water, and prevent unreasonable methods of use of water within the District, and said rules and regulations are necessary to assure that sufficient supplies of water will be available to meet the needs of, and to protect the health and safety of, the District's customers and other members of the public.

2. The rules and regulations adopted as part of this ordinance shall be implemented in accordance with the procedures set forth in applicable law.

3. If any provision of this ordinance, including the rules and regulations attached hereto as Exhibit B and incorporated herein, or any part thereof, is for any reason held to be *ultra vires*, invalid, unenforceable, or unconstitutional, the remaining provisions shall not be affected but shall remain in full force and effect, and to this end the provisions of this ordinance are severable.

4. This ordinance shall take effect immediately after its adoption, pursuant to Water Code Section 31027. A summary of this ordinance will be published in a newspaper of general circulation within the District at least five days prior to its adoption, and a summary of the adopted ordinance will be published in a newspaper of general circulation within the District within fifteen days following the Board of Directors adoption action. This ordinance shall remain in full force

and effect until the Board of Directors acts by resolution to declare that the water shortage condition within the District has ended.

5. The General Manager is hereby authorized and directed to cause the rules and regulations established hereby to be inserted in Title 5 of the Contra Costa Water District Code of Regulations, to implement the immediate enforcement thereof, and to provide for their implementation throughout the period of any water shortage condition declared by a resolution of the Board of Directors to exist within the District.

6. Pursuant to Water Code Section 31027, modifications to the rules and regulations adopted hereby may be made by amendment to this ordinance.

* * * * * * *

The foregoing Ordinance was duly and regularly adopted at a meeting thereof held on April 1, 2009, by the Board of Directors of the Contra Costa Water District, by the following vote of the Board:

AYES: Boatmun, Wandry, Anello, Burgh, Campbell

NOES: None

ABSTAIN: None

ABSENT: None

Joseph L. Campbell, President

ATTEST:

Sharon L. Burris
District Secretary

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# CONTRA COSTA WATER DISTRICT

# URBAN WATER MANAGEMENT PLAN

**June 2011**


**Board of Directors**

Joseph L. Campbell, President
Karl L. Wandry, Vice President
Bette Boatmun
Lisa M. Borba
John A. Burgh

**General Manager**
Jerry Brown

**Contributing Staff and User Group Members**
Kimberly Lin, Associate Engineer
Wayne Niehus, Rate and Financial Analyst
Chris Dundon, Water Conservation Supervisor
Greg Gartrell, Assistant General Manager
Jeff Quimby, Principal Engineer
Emily Corwin, Assistant Engineer

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## Appendices

## SECTION 4: Water Shortage Contingency Plan

> *10632. The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:*

This chapter contains CCWD's Water Shortage Contingency Plan (Shortage Plan) that addresses the water management practices required during a drought or other interruption of water supplies. The Shortage Plan helps CCWD consider impacts of short-term supply deficiency including financial hardship on both the community and CCWD, and deterioration of customer relations. CCWD uses shortage planning to anticipate drought conditions and to prepare for catastrophic interruptions in water supply. As the District's conservation program is implemented and long-term firm conservation savings are realized, the drought contingency plan required as part of the UWMP will need to be coordinated with updates to the FWSS.

## Step One. Stages of Action

*10632 (a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.*

### Demand Reduction Stages and Goals

This section discusses the projected supply shortfall as it is used to trigger the adoption of a stage appropriate to the severity of the water shortage. To manage a water supply shortfall condition, four demand reduction stages have been defined. The total demand reduction goal for each stage increases from less than 10 percent up to 50 percent of normal demand from Stage I to Stage IV. Stages I and II involve voluntary customer demand reduction measures and Stages III and IV impose mandatory measures including allotments and excess use charges.

The water supply reliability goal adopted in the FWSS is to meet 100 percent of demand in normal years, and at least 85 percent of demand during a drought. Stages I and II may be implemented in response to drought conditions to obtain up to a 20 percent reduction in demand. Stages III and IV are expected to be implemented in response to a catastrophic interruption in supply such as an earthquake or other emergency. Table 4-1 summarizes the four stages.

**TABLE 4-1. DEMAND REDUCTION STAGES AND GOALS**

| Stage | Supply Shortage Stage | Description | Total Available Supply |
|---|---|---|---|
| I | Up to 10% | Water Alert | 90% |
| II | 10 - 20% | Water Warning | 80-90% |
| III | 20 - 35% | Water Emergency | 65-80% |
| IV | 30 - 50% | Water Crisis | Public Health & Safety |

Water supply shortage is the difference between demand and the sum of the reduced CVP allocation and additional secure sources of supply. The District's CVP allocation is defined in the CVP water service contract and the M&I Water Shortage Policy. The M&I Water Shortage Policy was developed by the United States Bureau of Reclamation to (1) define water shortage terms and conditions applicable to all CVP M&I contractors, as appropriate; (2) establish CVP water supply levels that would sustain urban areas during droughts, and during severe or continuing droughts would assist the M&I contractors in their efforts to protect public health and safety; and (3) provide information to M&I contractors for development of drought contingency plans. The current M&I Water Shortage Policy provides for a minimum shortage allocation of 75 percent of adjusted historical use until irrigation allocations fall below 25 percent. In addition, the United States Bureau of Reclamation will deliver CVP water to CCWD at not less than a public health and safety water supply level, provided CVP water is available, if the Governor declares an emergency due to water shortage or if an emergency exists due to water shortage. CCWD's CVP allocation during a minimum public health and safety condition shall be sufficient to satisfy public health and safety requirements and was determined by CCWD to be 65% of normal demand.

**Example Customer Reduction Goals**

Sample customer class reduction goals under the various supply shortage stages are shown in Table 4-2. These allotments are provided as an example of how to achieve the overall desired reduction goal while acknowledging the constraints various customer classes may have in effecting short-term demand reduction. Alternative allocations may be considered at the time a given stage is implemented. The District recognizes that reductions for commercial and industrial customers can have significant economic impacts. Therefore, it is proposed to keep requested reductions to commercial and industrial customers lower than for residential and irrigation customer classes. It was also recognized that multi-family residential water users have primarily indoor water use and cannot reduce their water use as much as the single-family residences, which typically have nearly half of their water use for outdoor uses. The use of increments of five in choosing the reduction goals facilitates CCWD in communicating its reduction goals to its customers.

| TABLE 4-2. EXAMPLE CUSTOMER REDUCTION GOALS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Stage I Up to 10%[a] | | Stage II 10-20% | | Stage III 20-35% | | Stage IV 35-50% | | Maximum[b] 50% | |
| Water Use Sectors | Current Sales[c] (AF) | % of Total Sales | Goal (%) | Sales (AF) | Goal (%) | Sales (AF) | Goal (%) | Sales (AF) | Goal (%) | Sales (AF) | Goal (%) | Sales (AF) |
| **Untreated Water Service** | | | | | | | | | | | | |
| Municipal | 42,450 | 35% | 10% | 38,205 | 15% | 36,083 | 30% | 29,715 | 45% | 23,348 | 50% | 21,225 |
| Major Industrial | 41,440 | 34% | 5% | 39,368 | 5% | 39,368 | 10% | 37,296 | 15% | 35,224 | 45% | 22,792 |
| Irrigation | 1,992 | 2% | 15% | 1,693 | 30% | 1,394 | 75% | 498 | 90% | 199 | 100% | 0 |
| Agriculture | 204 | 0% | 10% | 184 | 15% | 173 | 25% | 153 | 40% | 122 | 50% | 102 |
| Subtotal | 86,086 | 70% | | 79,450 | | 77,018 | | 67,662 | | 58,893 | | 44,119 |
| | | | | | | | | | | | | |
| **Treated Water Service** | | | | | | | | | | | | |
| Single-family residential | 20,850 | 17% | 5% | 19,808 | 20% | 16,680 | 30% | 14,595 | 45% | 11,468 | 50% | 10,425 |
| Multi-family residential | 6,120 | 5% | 5% | 5,814 | 15% | 5,202 | 25% | 4,590 | 40% | 3,672 | 50% | 3,060 |
| Irrigation | 4,120 | 3% | 15% | 3,502 | 30% | 2,884 | 75% | 1,030 | 90% | 412 | 100% | 0 |
| Commercial | 4,270 | 3% | 5% | 4,057 | 10% | 3,843 | 10% | 3,843 | 15% | 3,630 | 50% | 2,135 |
| Industrial | 110 | 0.1% | 5% | 105 | 5% | 105 | 10% | 99 | 15% | 94 | 40% | 66 |
| Public Authority | 1,020 | 1% | 5% | 969 | 10% | 918 | 20% | 816 | 30% | 714 | 50% | 510 |
| Private Fire Protection | 0 | 0.0% | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 |
| Temporary Service | 80 | 0.1% | 0% | 80 | 0% | 80 | 100% | 0 | 100% | 0 | 100% | 0 |
| Municipal | 170 | 0.1% | 5% | 162 | 15% | 145 | 25% | 128 | 40% | 102 | 50% | 85 |
| Subtotal | 36,740 | 30% | | 34,497 | | 29,857 | | 25,101 | | 20,092 | | 16,281 |
| | | | | | | | | | | | | |
| **Total** | 122,826 | 100% | 7% | 113,947 | 13% | 106,875 | 24% | 92,763 | 36% | 78,985 | 51% | 60,400 |

a) Range in overall reduction goal to be achieved for a given supply reduction stage. A stage's overall reduction goal equals the water supply shortage remaining after supplemental supplies are obtained.

b) The Urban Water Management Planning Act requires the UWMP to consider the reductions necessary to achieve a maximum reduction of 50 percent. Stages III and IV are not expected to be experienced as a result of drought, but rather in response to an emergency situation.

c) 2005 water sales were used to represent current sales to normalize for the effects of the recent drought and economic downturn.

## Demand Reduction Triggering Mechanisms

A water reduction stage is implemented if a water supply shortfall is forecasted for the upcoming year. The estimate of the supply shortfall is only a rough guess, even as late in the water year as March. Although criteria are described in CCWD's water supply contract to determine CCWD's water allotment, these criteria define CCWD's water supply allotment relative to a historical use. Historical use is defined by the M&I Water Shortage Policy as the average quantity of CVP water put to beneficial use within the service area during the last three years of water deliveries, unconstrained by the availability of CVP water. The M&I Water Shortage Policy also recognizes that certain circumstances may require adjustment of the historical use such as

growth, extraordinary water conservation measures, or use of non-CVP water supplies. The level of supply shortfall is expressed as a percent of the normally occurring demand that would need to be reduced to meet the available supplies. Available supplies include CVP, ECCID, and other dry-year purchases. This percent reduction is matched to the total reduction goal shown in Table 4-1 to select the appropriate stage.

Additional factors to be considered in implementing a water reduction stage include the following:

- Time and circumstances permitting, the stages should be stepped through without skipping stages. This avoids drastic and sometimes unnecessary actions that may cause problems for CCWD including loss of customer confidence, financial shortfall, and difficulties implementing the emergency water reduction program.

- Customer response to the current stage may either require CCWD to implement the next stage or remain at a current stage. The stages allow CCWD to note the customer's response to less severe stages before implementing the stricter stages.

- Predictions of demand and supply are not always accurate. To help determine if the water reduction program is achieving expected results, demands should be monitored monthly during Stage I, weekly during Stage II, and daily during Stages III and IV.

Again, the estimate of the water supply shortage is rough and a contingency should be made to err on the side of achieving a more than adequate water reduction level. Tables 4-3 through 4-6 identify the demand reduction goals for each user class and lists suggested CCWD actions and enforcement methods for each stage.

**TABLE 4-3. STAGE I – WATER ALERT**
Up to 10 Percent Shortage[a]

| CCWD Actions | Water Reduction Goals (% of last non-drought year use) | Penalties |
|---|---|---|
| • Develop Voluntary Drought Management Program (DMP).<br>• Develop and implement a DMP Communications Plan. Plan to include key messages, methods of outreach, media press releases, schedule and budget. Plan will explain drought situation to the public and municipal customers and describe other stages and forecast future actions.<br>• Conduct municipal customer outreach and education with a goal of clearly communicating the District's DMP and encouraging consistency throughout the District's service area.<br>• Conduct conservation program outreach. Outreach will target specific customer sectors and provide technical information on ways to conserve water, and would include educational brochures, bill inserts, direct mail, etc.<br>• Develop and adopt regulations restricting water waste consistent with Stage I reduction goal as necessary. | Treated Water Voluntary % Reductions:<br>Single Family 5 – 15%<br>Multi Family 5 – 10%<br>Commercial 0 – 5%<br>Industrial 0 – 5%<br>Public Authority 5 – 10%<br>Irrigation 10- 15%<br>Municipal 5 – 10%<br><br>Untreated Water Voluntary % Reductions:<br>Municipal 5 – 10%<br>Industrial 0 – 5%<br>Irrigation 10 – 15%<br>Agricultural 5 – 15% | Water Waste Penalties:<br><br>1. Educational letter |

a) Water supply shortage defined as the difference between demand and the sum of the reduced Bureau allotment and additional secure sources of supply.

**TABLE 4-4. STAGE II SHORTAGE – WATER WARNING**
10-20 Percent Shortage[a]

| CCWD Actions | Water Reduction Goals (% of last non-drought year use) | Penalties |
|---|---|---|
| • Adopt Ordinance declaring a water shortage condition<br>• Develop Drought Management Program (DMP) including water allotment levels for each customer class to meet District reduction goals. DMP will focus on reducing water waste and outside water use and assisting customers to meet specific reduction goals. Excess use charges may be considered.<br>• Develop standard operating procedure for water allotment appeals.<br>• Develop DMP logistical plan including customer service and conservation staffing and equipment needs, budget and schedule.<br>• Program billing system to provide customers with allotments and reduction goals.<br>• Develop and implement DMP Communications Plan as described in Stage I. In addition, Plan will include developing guides for each customer class describing significant water use reductions.<br>• Conduct outreach to municipal customers (as described in Stage I). Increase outreach to large industrial customers, landscape customers, public authorities, and others as necessary. Outreach will provide customer-specific tools to monitor, manage, and reduce water use.<br>• Develop procedure for accepting or denying new service requests.<br>• Lobby for passage of drought ordinances by appropriate governmental agencies.<br>• Identify recycled water stations available for construction water throughout District service area.<br>• Monitor production weekly against desired reduction goals.<br>• Develop and adopt regulations restricting water waste consistent with Stage II reduction goal. | <u>Treated Water Voluntary % Reductions:</u><br>Single Family 15 - 25%<br>Multi Family 10 - 20%<br>Commercial 5 - 10%<br>Industrial 5%<br>Public Authority 10 - 20%<br>Irrigation 35%<br>Municipal 10 - 20%<br><u>Raw Water Voluntary % Reductions:</u><br>Municipal 10 - 20%<br>Industrial 5%<br>Irrigation 30%<br>Agricultural 15 - 25% | <u>Water Waste Penalties:</u><br>1. Educational letter<br>2. Possibly implement excess use charges for customers not meeting reduction goals and significant water wasters. |

a) Water supply shortage defined as the difference between demand and the sum of the reduced Bureau allotment and additional secure sources of supply.

**TABLE 4-5. STAGE III SHORTAGE – WATER EMERGENCY**
20-35 Percent Shortage – Mandatory Reductions[a]

| CCWD Actions | Water Reduction Goals (% of last non-drought year use) | Penalties |
|---|---|---|
| • Adopt Ordinance declaring a water shortage condition<br>• Develop Drought Management Program (DMP) as described in Stage II. Program will include excess use charges.<br>• Develop standard operating procedure for water allotment appeals. Require all homes and businesses to have high-efficiency showerheads, toilets and efficient landscape watering before granting increased allotments.<br>• Develop DMP logistical plan as listed in Stage II<br>• Program billing system as listed in Stage II<br>• Develop and implement DMP Communication Plan as described in Stage II<br>• Develop and implement outreach to municipal and other customer classes as described in Stage II<br>• Develop and implement more stringent procedure for accepting or denying new service requests<br>• Lobby for passage of drought ordinances by appropriate governmental agencies.<br>• Identify recycled water stations available for construction water throughout District service area.<br>• Monitor production daily against necessary reductions.<br>• Develop and adopt regulations restricting water waste consistent with Stage III reduction goal such as:<br>- main flushing allowed only for emergencies<br>- cars washed only with buckets or hoses equipped with shut off valves<br>- manage water use to stay within allotment<br>- day-of-week water restrictions<br>- consider suspending all untreated water flat-rate (unmetered) accounts<br>- prohibit filling of lakes and pools | Treated Water Mandatory % Reductions:<br>Single Family 25 - 40%<br>Multi Family 20 - 30%<br>Commercial 10 - 20%<br>Industrial 10%<br>Public Authority 20 - 30%<br>Irrigation 75%<br>Municipal 20 - 30%<br><br>Raw Water Mandatory % Reductions:<br>Municipal 20 - 30%<br>Industrial 10%<br>Irrigation 75%<br>Agriculture 25 - 40% | Water Waste Penalties:<br><br>1. Excess use charges<br>2. Flow restrictors<br>3. Fines |

a) Water supply shortage defined as the difference between demand and the sum of the reduced Bureau allotment and additional secure sources of supply.

**TABLE 4-6. STAGE IV SHORTAGE – WATER CRISIS**
30-50 Percent Shortage – Mandatory Reductions[a]

| CCWD Actions | Water Reduction Goals (% of last non-drought year use) | Penalties |
|---|---|---|
| • All of the Stage III steps intensified<br>• All public water uses not required for health and safety prohibited unless using tank truck water supplies or recycled wastewater<br>• Prohibit new connections | Treated Water Mandatory % Reductions:<br>Single Family 40 - 50%<br>Multi Family 30 - 50%<br>Commercial 30 - 50%<br>Industrial 10 - 35%<br>Public Authority 30 - 50%<br>Irrigation 90-100%<br>Municipal 30 - 50%<br><br>Raw Water Mandatory % Reductions:<br>Municipal 30 - 50%<br>Industrial 10 - 35%<br>Irrigation 90-100%<br>Agricultural 40 - 50% | Water Waste Penalties:<br><br>1. Excess use charges<br>2. Flow restrictors<br>3. Fines |

a) Water supply shortage defined as the difference between demand and the sum of the reduced Bureau allotment and additional secure sources of supply.

## Water Allotment Methods

This section presents suggested water allotment methods for each customer type. A key element of this step is involvement of the public in order to create a program that the community understands, contributes to, and supports.

Water allotments are not required for Stage I since it is voluntary. Stage II may require the use of allotments depending on the overall reduction goal, and Stages III and IV will require water allotments.

The allotment methods discussed here, except the flat allocation, use "base-year consumption" for each user to calculate each customer's water allotment. The base-year consumption is an estimate of a customer's normal, non-drought water consumption for each billing period. Previous years' consumption may not reflect current demand because of previous drought and economic conditions; therefore, base-year consumption may be determined using the water use from the prior year or an average water use from several years prior. The more accurate the base-year consumption is, the more equitable the drought water allotments will be.

### Single Family and Multi-Family Residential Accounts

The three allocation methods to be considered to achieve a 10 to 50 percent mandatory reduction are:

- Percent reduction
- Flat allocation
- Hybrid flat allocation/percent reduction

Table 4-7 summarizes the advantages and disadvantages of the three allocation method options for single and multi-family residential customers.

**TABLE 4-7. ALLOTMENT METHOD OPTIONS SINGLE-FAMILY AND MULTI-FAMILY RESIDENTIAL ACCOUNTS**

| Allotment Method | Advantages | Disadvantages |
|---|---|---|
| **Percent Reduction** | • Easy to determine and administer | • Penalizes conservers and rewards water wasters<br>• May not provide health and safety requirements in extreme shortages<br>• Undermines water conservation efforts and encourages water wasting during non-shortage periods<br>• Base bi-monthly consumption must be determined for each customer |
| **Flat Allotment** | • Easy to determine and administer<br>• Effective for periods of extreme shortage (Stage IV)<br>• Base-year consumption for each customer is not needed | • Not equitable<br>• Does not recognize customer water use characteristics |
| **Hybrid Percent Reduction/Flat Allotment** | • More equitable to customers than percent reduction and flat allotment as it only reduces non-health and safety water use<br>• Flexible – suitable for all stages<br>• Provides customers greatest control<br>• May minimize customer complaints and appeals | • More complicated to develop and program into billing system than the simple percent reduction.<br>• More complicated to explain to customers<br>• Base bi-monthly consumption must be determined for each customer |

Percent Reduction**:** The allocation is calculated by reducing the user's base-year water use for each billing period by a specific percentage. The percentage reduction is the same for all the users within the customer class. Advantages of this method include the ease of its administration and understanding and its effectiveness in reducing water use in a water crisis (Stage IV). The method has several disadvantages. It fails to ensure that basic health and safety requirements are met, and it penalizes conservers and benefits water wasters. The percent reduction can also undermine the District's water conservation efforts by encouraging customers to waste water during non-drought times. Because this method penalizes conservers and rewards inefficient water users, it is considered the most inequitable method for the residential user class.

Flat Allocation**:** The flat allocation method provides the same allotment of water to all residential customers, regardless of past water use. The advantages are that it is simple to understand and administer, and it ensures that health and safety requirements are met. Also, base-year water use for each customer is not required. This method may be appropriate for late Stage III and for Stage IV drought plans because it evenly allocates the minimal amount of water available to all

of the users. The major disadvantage of the flat allocation method is that it can abruptly impose severe reductions on households with four or more people and/or homes with substantial landscaping while residences with three or fewer people and/or homes with small landscapes are relatively unaffected. This inequity causes public complaints that can potentially overburden District staff. This method may not be appropriate for late Stage II or early Stage III plans because of the inappropriately severe reductions imposed on a substantial portion of the user class.

Hybrid Flat Allotment/Percent Reduction**:** The "hybrid" method provides health and safety water equally for all customers and then reduces non-essential water on a fixed or sliding scale. Customers who historically use very high amounts of water would be asked to reduce more than those that use less historically. Advantages of the hybrid method are that it provides health and safety water to all customers and appears to be the most equitable between large and small water users. The major disadvantage of the hybrid method is that it is difficult to explain to customers and is more difficult to program into the water billing system.

**Dedicated Irrigation Accounts**

The customer classes that exclusively use water for irrigation are the treated water Residential, Commercial and Public Authority dedicated irrigation accounts, and the untreated water metered and un-metered irrigation accounts. For the metered accounts, the two water allocation method options that may be considered for the irrigation user classes are:

- Percent Reduction
- Water Budget Based Allocation

Percent Reduction**:** A water allocation is calculated by reducing the user's base-year water use, for each billing period, by a specific percentage. The percentage reduction is the same for all the customers in this customer class. The advantages stem from its simplicity: the method is easy to administer and understand. The major disadvantage of the percent reduction is it penalizes conservers and benefits water wasters. The percent reduction can undermine the District's water conservation efforts by encouraging customers to waste water during non-drought times. Properties that historically manage their landscape water efficiently are unable to maintain their landscapes without damage, whereas historically wasteful customers will reduce and have little impact to their landscape quality.

Water Budget Based Allocation: Accounts with dedicated irrigation meters are provided individual water allocations that are determined by a calculation using the property's landscape acreage and local historical weather data. The weather data comes from the California Irrigation Management Information System (CIMIS) weather data service, and the landscape acreage information comes from the District's existing Landscape Water Budget Conservation Program. By utilizing this existing information, the District can develop site-specific allocations for each account. The primary advantage of this method is that it is equitable between all properties. This method is fair to those properties that have historically managed their water efficiently. Sites that have historically wasted water will be required to reduce more to stay within their allocation. The disadvantage of this method is it is more difficult to explain to customers. However, many landscape professionals prefer this method as it is more equitable.

**Flat Rate Irrigation Accounts**

During Stage II, flat rate irrigation accounts could be required to cut a specific percentage or be required to water only on specific days of the week. Alternatively, for Stage III and IV all flat rate irrigation services could be suspended.

**Commercial Accounts**

Commercial businesses are a significant source of jobs and revenue for Contra Costa County. Therefore, the required reductions for commercial accounts are less than for residential and landscape accounts to minimize impacts to the local economy. However, some reduction is required under each stage. The commercial customer class covers a variety of water users. The users vary from laundries and linen supplies to restaurants and health care facilities, and from car washes to hotels and retail stores. Each user has significantly different quantities and uses of water. Therefore, because of this large variation, the percent reduction appears to be the most viable water allocation method. In addition to the percent reduction, commercial customers can be required to demonstrate they are using water efficiently before they are allowed an increase to their allotment. Every effort must be made by CCWD to help the various businesses reduce their water use and minimize economic hardship. There exists an essential water use for each business that, when not met, creates undue economic hardship for that business. CCWD must attempt to assess a business's essential water use when reviewing an appeal. In a Stage III response, a business's essential water use may be considered as similar to the health and safety requirement for residential users. However, in a Stage IV (water crisis), a business's essential water use is secondary to the residential health and safety requirement as shown in Table 4-2.

Educational materials are available from the State Department of Water Resources for the Commercial Service customers to help them reduce their water use. Note that, to appeal for more water, the business must show proof of an attempt to reduce their water use before their appeal can be considered. This may be effective in eliminating the number of "casual" appeals and ensuring that an effort has been made to reduce water use.

**Industrial Accounts**

Industries use approximately one-third of CCWD's total water use. The industries served by CCWD are a significant source of jobs and revenue for Contra Costa County and the State of California. Driven by the incentives to reduce costs and the risks of production losses, some industries have aggressively pursued water conservation practices for over twenty years. As a result, significant water conservation has been achieved and further water reduction may be more difficult and much more expensive. A Stage II reduction (10 to 20 percent overall) may be achievable by applying a 0 to 5 percent reduction to the industrial users and imposing larger reductions on other user classes. However, overall reductions for Stage III and IV (20 to 50 percent) may require industries to reduce use by more than 10 percent and risk production shutdown. A percent allocation calculated on a case-by-case basis may be the most equitable allocation method and is feasible because of the small number of industrial customers. As an option to installing costly additional conservation upgrades or loss of production, industries may be charged a fee to help reduce water use in other user classes. This "mitigation fee" may be

used by CCWD to install low flow toilets, fix leaks for schools, or any other water conservation effort. An effective program would set each fee sufficient to reduce water use in other classes by the amount allocated to a given industrial customer.

**Public Authority**

The Public Authority user class includes schools and public and government buildings. The percent reduction allocation method is the only method considered here because of the customers' varied water uses.

**Municipal**

CCWD provides untreated and treated water to five municipal customers. The percent reduction method is the only method considered here because of the varied water uses within the municipal customers' service areas. Each municipal customer has its own shortage plan and will determine how the overall supply shortage is to be accommodated by its various customer classes.

**Agricultural**

The agricultural user class could be dealt with in two ways: their allocation could be in proportion to the CVP Agricultural Water allocation (which is likely to considerably less than the M&I level) or they can be treated as any other customer. It is proposed that this class be allocated water in the same proportion as municipal customers. Overall agricultural water use within CCWD is small and would mean only a minor change in allocations to others.

**Water Allotment Appeals**

A committee is formed to assess, approve, or deny appeals to water allotments provided under the District's Drought Management Program. The appeal committee formed in 2009 included five members. The sections represented included Customer Service and Conservation. The total number of water allocation appeals received as of January 31, 2011 was 7,079. Of these 1,344 were denied and the remaining 5,735 were approved. The allotment appeal process that was distributed to all customers during the 2009 Drought Management Program included four acceptable reasons for variance:

- Medical requirements
- Health and safety
- Number of household members increased from base years (2005-2007).
- Any irrigation/landscape circumstance changes from base years (2005-2007)

## Step Two. Three-Year Minimum Water Supply

*10632 (b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.*

This section provides an estimate of the minimum water supply available during each of the next three water years under drought and minimum health and safety conditions.

### Drought Conditions

The District's primary supply is CVP water obtained under contract with the United States Bureau of Reclamation. The M&I Water Shortage Policy defines the reliability of the District's CVP supply and provides for a minimum shortage allocation of 75 percent of adjusted historical use until irrigation allocations fall below 25 percent. Under drought conditions, the District's CVP supply is assumed to be 75 percent of historical use.

The District's agreement with ECCID provides up to 8,200 acre-feet (current demand is 6,000 acre-feet) for service in the areas common to both Districts. An additional 4,000 acre-feet is available in drought years through groundwater exchange.

The District's Mallard Slough and customer (Industrial and City of Antioch) supplies from the San Joaquin River are typically not available in drought years due to poor water quality.

### Health and Safety Requirements

Table 4-8 indicates per capita health and safety requirements based on commonly accepted estimates of interior residential water use. In Stage I and II shortages, customers may adjust either interior or outdoor water use in order to meet the voluntary reduction goal. The health and safety allotment is based on four people and a per capita use of 55 gallons per day (average of conserving and non-conserving fixtures).

**TABLE 4-8. PER CAPITA HEALTH AND SAFETY WATER QUANTITY CALCULATIONS**

| | Conserving Fixtures | | Non-Conserving Fixtures | |
|---|---|---|---|---|
| Toilets | 5 flushes x 1.6 gpf | 8.0 | 5 flushes x 5.5 gpf | 27.5 |
| Shower | 5 min x 2.0 gpm | 10.0 | 5 min x 4.0 gpm | 20.0 |
| Washing Machine | 11.5 gpcd | 11.5 | 12.5 gpcd | 12.5 |
| Kitchen | 4 | 4.0 | 4 gpcd | 4.0 |
| Other | 4 | 4.0 | 4 gpcd | 4.0 |
| Total (gpcd) | | 37.5 | | 68.0 |

Source: DWR

Due to the importance of gasoline and diesel fuel manufacturing to the State's economy, CCWD's minimum public health and safety amount includes an allocation to these key

industries. A curtailment of petroleum fuel production would have severe economic impacts to the State. CCWD's minimum public health and safety allocation from the CVP is 65% of normal demand, which includes a 10% reduction to key industries, minimum interior residential water allocations (55 gpcd), necessary institutional and commercial uses, fire protection, and average system losses.

The District's minimum supply during the next three years under drought and minimum health and safety conditions is shown in Table 4-9.

**TABLE 4-9. SUPPLY RELIABILITY DURING THE NEXT THREE YEARS**

| Source | Normal (af/yr) | Minimum Supply | | | | | |
|---|---|---|---|---|---|---|---|
| | | Year 1 (af/yr) | | Year 2 (af/yr) | | Year 3 (af/yr) | |
| | | Drought | H&S | Drought | H&S | Drought | H&S |
| CVP [a] | 170,000 | 127,500 | 110,500 | 128,775 | 111,605 | 130,100 | 112,700 |
| ECCID | 6,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Industrial Diversions | 10,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mallard Slough | 3,100 | 0 | 0 | 0 | 0 | 0 | 0 |
| Antioch Diversions | 6,700 | 0 | 0 | 0 | 0 | 0 | 0 |
| Groundwater | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| LV Supply | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Recycled Water | 8,500 | 8,500 | 8,500 | 8,500 | 8,500 | 8,500 | 8,500 |
| Total | 217,300 | 159,000 | 142,000 | 160,275 | 143,105 | 161,600 | 144,200 |

a) Minimum CVP supply under Drought conditions assumed to be 75% of historical use based on the M&I Water Shortage Policy. Minimum CVP supply under minimum Health and Safety (H&S) conditions is assumed to be 65% of historical use. Historical use is assumed to increase at 1% per year over the next three years.

## Step Three. Catastrophic Supply Interruption Plan

*10632 (c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.*

CCWD is prepared to address major water shortage emergencies such as a catastrophic supply interruption. Emergency response procedures are described in the Emergency Operations Plan. In addition, the Seismic Reliability and Improvement and Los Vaqueros Projects have been implemented to minimize damage and service interruptions resulting from a regional power outage, earthquakes, or other disaster that results in disruptions to CCWD's supplies. This section describes these projects in more detail and other short-term supply options available to CCWD during an emergency.

### Emergency Operations Plan

In order to protect the public welfare in the event of an emergency, it is essential that the District respond in an expeditious and coordinated manner. CCWD's Emergency Operations Plan (EOP) provides a framework for directing District-wide responses to a broad scope of emergency situations associated with natural disasters, power outages, or other disasters. It supplements existing operational plans and emergency procedures and reflects CCWD's emergency operations policy.

CCWD coordinates with Contra Costa County, its political subdivisions, and other water districts and utilities within the State to plan for the effective mobilization and utilization of available resources during disasters. During emergencies, CCWD may request mutual aid response through the State Office of Emergency Services. Upon request by the County, State, or other public authority, and when feasible, CCWD may provide personnel, supplies, and equipment resources to other agencies.

Table 4-10 summarizes the actions CCWD has taken to prepare for a water shortage emergency.

| TABLE 4-10. PREPARATION ACTIONS FOR A CATASTROPHE | |
|---|---|
| **Examples of Actions** | **Source** |
| Determine what constitutes a proclamation of a water shortage emergency. | UWMP |
| Stretch existing water storage. | UWMP |
| Obtain additional water supplies. | UWMP, FWSS |
| Develop alternative water supplies. | FWSS |
| Determine where the funding will come from. | Budget, CIP |
| Contact and coordinate with other agencies. | EOP |
| Create an Emergency Response Team/Coordinator. | EOP |
| Create a catastrophe preparedness plan. | EOP |
| Put employees/contractors on-call. | EOP |
| Develop methods to communicate with the public. | EOP |
| Develop methods to prepare for water quality interruptions. | EOP, LVP, LVE |
| Increase seismic reliability of conveyance and distribution systems | SRIP, CIP |
| Increase emergency storage | LVP, TWMP, LVE |

Acronyms used in this table:
UWMP - CCWD Urban Water Management Plan
FWSS - CCWD Future Water Supply Study
CIP - CCWD Ten Year Capital Improvement Program
EOP - CCWD Emergency Operations Plan
SRIP – Seismic Reliability Improvement Project
LVP – Los Vaqueros Project
TWMP – Treated Water Master Plan
LVE – Los Vaqueros Expansion Project

### Seismic Reliability and Improvement Project

In 1997, CCWD completed a Seismic Reliability and Improvements Study of the reliability and capacity of its water distribution facilities. As a result of the study, CCWD has completed three major capital projects that improve the capacity and reliability of the untreated water system to meet future demands, as well as to meet potential fire flow needs following a major earthquake or other disaster. These projects are: Raw Water Seismic Improvement Project, which reinforced seven areas of seismic vulnerability along the Contra Costa Canal; the Mallard Slough Pump Station project, which replaced the existing 65-year-old Mallard Slough intake at Bay Point; and the Multi-Purpose Pipeline (MPP), which is a 22-mile long pipeline to supplement the capacity of the Contra Costa Canal. Additionally, CCWD has implemented projects that improve the reliability of its treated water system, including the Fault Crossings Connections project, which installed connections at three locations where large treated water transmission pipelines cross the Concord fault; the Emergency Generators project, which provided six permanent and two portable backup generators at critical pump stations in CCWD's treated water distribution system; and the Seismic Isolation Valves project, which installed five isolation valves at key treated water reservoirs.

The MPP conveys treated water from the Randall-Bold Water Treatment Plant in Oakley to CCWD's existing water distribution system in Concord, near the Bollman Water Treatment Plant. Under normal operations, the MPP delivers treated water from east to west, to the

District's treated water customers. In an emergency, the MPP could also carry water in the reverse direction (from west to east), transporting treated water eastward from the Bollman Water Treatment Plant to customers in eastern Contra Costa County. The MPP also has several emergency connections to the Canal. If the Canal is damaged during an earthquake or requires maintenance, water could be diverted from the MPP to the Canal around damaged or closed sections using the emergency connections. The MPP serves multiple purposes and greatly improves the existing Canal system reliability for delivery during emergencies.

**Los Vaqueros Reservoir**

CCWD's Los Vaqueros Reservoir provides 100,000 acre-feet of offstream storage to improve water quality and to provide emergency storage for customers of CCWD. A large portion of the reservoir is reserved for emergency purposes. The reservoir provides up to 70,000 acre-feet of emergency supply in wet years and up to 44,000 acre-feet in dry years. The Los Vaqueros Reservoir provides a minimum of 3 to 6 months of emergency storage that may be utilized during a catastrophic interruption of CCWD's Delta supplies.

Construction of CCWD's Los Vaqueros Expansion (LVE) Project began in 2011, with an anticipated project completion in early 2012. The LVE Project will expand the existing Los Vaqueros Reservoir capacity from 100,000 acre-feet to 160,000 acre-feet, providing 60,000 acre-feet of additional storage for CCWD customers. When full, the reservoir provides enough storage for approximately 14 to 28 months of normal use, if necessary.

**Short-term Supplemental Supply Options**

The FWSS and Implementation Plan were undertaken to strengthen the reliability of supplies for existing customers and to bridge the gap between water supplies and projected demands. The Implementation Plan includes the purchase of water transfers in incremental blocks to meet 100 percent of demand in normal years and at least 85 percent of demand in drought conditions. Additional short-term supplies may be required in response to an emergency or catastrophic interruption of the District's supply. Potential supplemental supplies include spot market water transfers, increased use of groundwater, and increased water recycling. The legal and time constraints, availability, costs, and relative amounts of water determine how and if the supplemental source would be pursued.

Water transfers (through the State Water Bank), increased water recycling, and increased groundwater pumping were used in the drought of 1986 to 1992. CCWD purchased 6,717 acre-feet and 10,000 acre-feet from the State Water Bank in 1991 and 1992, respectively. During the summer of 1991, as a response to drought emergency, approximately 400 acre-feet of recycled water was distributed to Shell and Tosco (now Tesoro) refineries for cooling tower water. A truck fill station was built to provide recycled water for construction uses. Since then, additional recycled water facilities have been constructed by DDSD and CCCSD for non-potable demands including industrial cooling and irrigation supplies. Utilization of the recycled water facilities could be maximized in response to an emergency.

In response to recent drought conditions, CCWD implemented a dry-year water transfer with ECCID in 2007 to 2009. The current agreement between the two districts allows CCWD to purchase up to 4,000 acre-feet per year of groundwater via exchange when the CVP is in shortage situation.

Groundwater resources in Contra Costa County are limited. Outside of the District, only Byron-Bethany Irrigation District, ECCID, and the City of Brentwood have the ability to produce significant amounts of groundwater (approximately 5,000 acre-feet annually each). The potential to increase groundwater pumping in eastern Contra Costa County would be explored in the event of an emergency.

# APPENDIX F

## Resolution No. 93-23, Water Waste Prohibition with the Area Served by the District

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RESOLUTION NO. 93-23

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CONTRA COSTA WATER DISTRICT ENACTING WATER WASTE PROHIBITIONS WITHIN THE AREA SERVED BY THIS DISTRICT

BE IT RESOLVED by the Board of Directors of the Contra Costa Water District that all water supplied by the District's shall be put to reasonable beneficial use. Therefore, the following uses of water supplied by the District have been determined to be wasteful and are prohibited:

1. The use of water in a decorative fountain or pool that does not recycle water.
2. Washing paved or other hard-surfaced areas, including sidewalks, walkways, driveways, patios and parking areas.
3. Outside watering that results in flooding or excessive runoff in a gutter, drain, patio, driveway, walkway or street.
4. Flushing sewers or hydrants, or washing streets except for emergencies, protection of public health or safety, or essential operations.
5. Using potable water for construction except if no other water supply is available.
6. The use of nonrecirculating systems in all new conveyer car wash and commercial laundry systems.
7. The use of single pass cooling systems in new connections.
8. The failure to repair a controllable leak of water.

* * * * * * * * *

The foregoing Resolution was duly and regularly adopted at a meeting held on the 5th day of May, 1993 by the Board of Directors of the Contra Costa Water District by the following vote of the Board:

AYES: Boatmun, Campbell, Pellegrini, Butler

NOES: Freitas

ABSENT: None

Ronald E. Butler, President

ATTEST:

Janice B. Booker
District Secretary

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# APPENDIX G

## CCWD Annual Water Quality Report (2010)

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A REPORT ON YOUR

# *Drinking Water*

## ANNUAL WATER QUALITY REPORT

FROM THE
CONTRA COSTA WATER DISTRICT,
THE CITIES OF
ANTIOCH, MARTINEZ & PITTSBURG,
& THE DIABLO WATER DISTRICT IN OAKLEY

2010 CALENDAR YEAR

## To Our Customers:

This report answers questions you may have about your tap water. It is prepared with water quality data collected over the year 2010. It contains information about the quality of water delivered by the Contra Costa Water District (CCWD), the cities of Antioch, Martinez and Pittsburg, and the Diablo Water District (DWD) in Oakley.

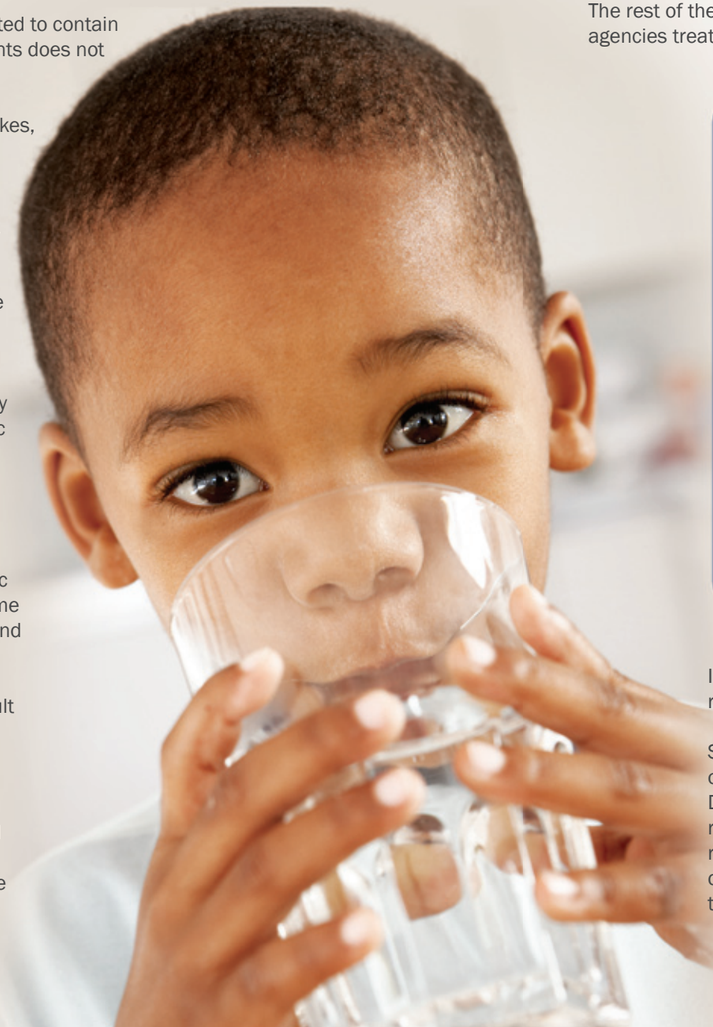
Your tap water is clean and safe to drink because your water provider protects its water sources and uses state-of-the-art treatment technology. **In 2010, the treated drinking water delivered to your home met all drinking water standards set by the state and federal governments.** For testing results, see the table on pages 3-4.

For more information about the tap water in your community, please call:

CCWD: Jean Zacher – (925) 688-8091
City of Antioch: Lori Sarti – (925) 779-7024
City of Martinez: Alan Pellegrini – (925) 372-3587
City of Pittsburg: Ana Corti – (925) 252-6916
Diablo Water District (Oakley): Paul Urenda – (925) 625-2112
For Golden State Water Company (Bay Point): information – (925) 458-3112
For City of Brentwood information: Eric Brennan – (925) 516-6000

## The California Department of Public Health wants you to know:

All drinking water, including bottled water, in all communities may be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.



The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. It can also pick up substances resulting from animal or human activity. Contaminants that may be present in source water before it is treated include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides, which may come from a variety of sources, such as agriculture, urban stormwater runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals that are byproducts of industrial processes and can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems.
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) and the California Department of Public Health prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Limits are also established by the U.S. Food and Drug Administration for contaminants in bottled water that must provide the same protection for public health.



Some people may be more vulnerable to contaminants in drinking water than the general population. People with compromised immune systems, such as cancer patients undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

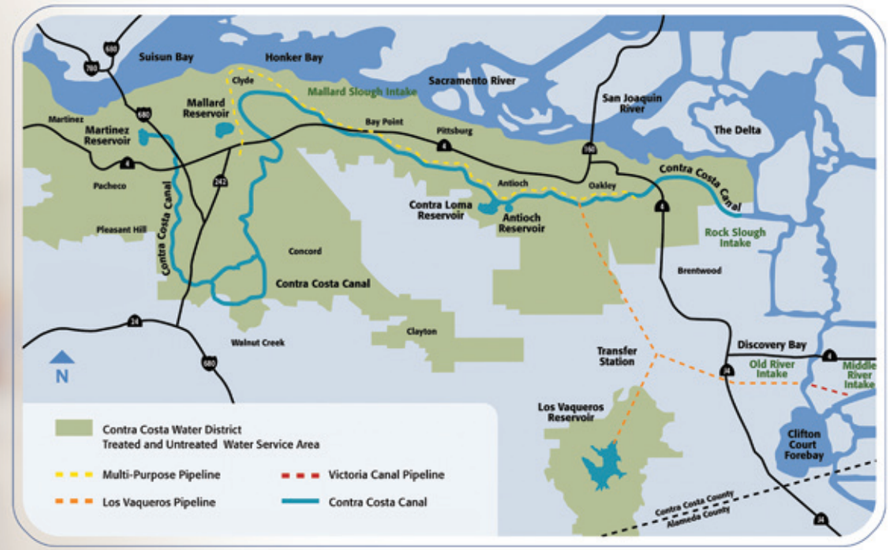
For more information about contaminants and potential health effects, or for EPA and Centers for Disease Control guidelines on ways to lessen the risk of infection, call the EPA's Safe Drinking Water Hotline at: 1-800-426-4791 • www.epa.gov/safewater/

## *The Source* of your water

The primary source of water for 500,000 residents in Central and Eastern Contra Costa County is the Sacramento-San Joaquin Delta. Delta water starts its journey to homes and businesses when the Contra Costa Water District (CCWD) pumps it from four intakes: Rock Slough near Oakley, Old River near Discovery Bay, Middle River on Victoria Island, and Mallard Slough in Bay Point. This untreated water is pumped into the Contra Costa Canal and the Los Vaqueros Pipeline and conveyed to treatment plants and reservoirs located throughout Eastern and Central Contra Costa County. The City of Antioch also pumps water from the San Joaquin River. The Diablo Water District, the City of Pittsburg, the Golden State Water Company in Bay Point and the City of Brentwood have groundwater supplies in addition to Delta water pumped by CCWD.

About half of the water pumped by CCWD is treated by CCWD and delivered to homes and businesses in Clayton, Clyde, Concord, Pacheco, Port Costa, and parts of Pleasant Hill, Martinez and Walnut Creek. CCWD also sells treated water to the Golden State Water Company in Bay Point and the cities of Antioch and Brentwood.

The rest of the water pumped by CCWD is sold as untreated water to the cities of Antioch, Martinez and Pittsburg. These three agencies treat, distribute and bill for the water themselves.




In the Diablo Water District (DWD) service area, which includes Oakley and a small part of Brentwood, residents receive water that is treated at a plant jointly owned by DWD and CCWD. DWD distributes and bills for the water.

Sanitary surveys of the watershed that provides your water are conducted every three to five years. CCWD and the City of Antioch have both conducted sanitary surveys, with updates in 2007 and 2010. These surveys identified that the Delta could be affected by contamination from industrial and municipal wastewater discharges, urban runoff, highway runoff, agricultural runoff, pesticides, grazing animals, concentrated animal facilities, wild animals, mine runoff, recreational activities, traffic accidents/spills, saltwater intrusion, geologic hazards, and solid and hazardous waste disposal facilities. The surveys concluded that potential contamination is regularly mitigated by the natural flushing of the Delta, controls at the contamination sources, and existing water treatment practices.

## UNDERSTANDING THE TABLE

In the following tables, you will find detailed information about water that comes from your tap. Your water is regularly tested for more than 120 chemicals and other substances, as well as radioactivity. The table lists only the substances that were detected.

## DEFINITIONS

**Public Health Goal (PHG):** The level of contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

*PHGs, MCLGs and MRDLGs are nonmandatory goals based solely on public health considerations using the most recent scientific research available. When these goals are set, the technological and economical feasibility of reaching these goals is not considered.*

**Maximum Contaminant Level (MCL):** The highest level of a contaminant allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically or technologically feasible.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

**Primary Drinking Water Standard:** MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**Secondary Drinking Water Standards:** Secondary MCLs are set for contaminants that affect the odor, taste or appearance of water.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**Treated Water:** Water that has been filtered and treated.

**Regulatory Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Untreated Water:** Water before it has been filtered and treated.

**Unregulated Contaminant Monitoring Rule (UCMR):** A federal rule that requires monitoring for contaminants that are "unregulated." Unregulated contaminants are those that do not yet have a drinking water standard set by the U.S. Environmental Protection Agency. The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard.

**1** Randall-Bold Water Treatment Plant is a regular source of water for CCWD, DWD and the Golden State Water Company in Bay Point. It is also an as-needed source of water for Antioch and Brentwood, and an emergency water source for Pittsburg.

**2** Result is outside the stated range due to the running annual average calculation that takes into account data from the previous year.

**3** California Department of Public Health considers 50 pCi/L to be the level of concern for beta particles.

**4** Analyzed in 2009.



# TREATED WATER TEST RESULTS

| | | | | CONTRA COSTA WATER DISTRICT | | DIABLO WATER DISTRICT | | RANDALL-BOLD WTP[1] | | CCWD/ BRENTWOOD WTP | | CITY OF ANTIOCH | | CITY OF PITTSBURG | | CITY OF MARTINEZ | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PRIMARY DRINKING WATER STANDARDS** | **PHG** | **MCLG** | **MCL** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **MAJOR SOURCE IN DRINKING WATER** |
| Aluminum (µg/L) | 600 | n/a | 1,000 | ND | n/a | ND | n/a | ND | n/a | ND | n/a | ND | ND | ND–90 | ND | ND | ND | Erosion of natural deposits; residue from surface water treatment processes |
| Arsenic (µg/L) | 0.004 | n/a | 10 | ND | n/a | ND | n/a | ND | n/a | ND | n/a | ND | ND | 2.5 | n/a | ND | ND | Erosion of natural deposits; runoff from orchards |
| Barium (mg/L) | 2 | n/a | 1 | ND | n/a | ND | n/a | ND | n/a | ND | n/a | ND | n/a | ND–0.14 | ND | ND | n/a | Erosion of natural deposits |
| Fluoride (mg/L) | 1 | n/a | 2 | 0.66–1.1 | 0.86 | 0.63–0.89 | 0.82 | 0.77–1.0 | 0.87 | ND–0.18 | ND | 0.72–1.3 | 0.90 | 0.69–0.95 | 0.80 | 0.69–1.0 | 0.84 | Water additive that promotes strong teeth; erosion of natural deposits |
| Nitrate as $NO_3$ (mg/L) | 45 | n/a | 45 | ND | ND | ND–5.2 | 2.2 | ND–5.4 | ND | ND | ND | ND | ND | 3.7 | n/a | ND | ND | Runoff and leaching from fertilizer use; erosion of natural deposits |
| | | | | Maximum Value | Lowest Monthly % of Samples That Meets Requirements | Maximum Value | Lowest Monthly % of Samples That Meets Requirements | Maximum Value | Lowest Monthly % of Samples That Meets Requirements | Maximum Value | Lowest Monthly % of Samples That Meets Requirements | Maximum Value | Lowest Monthly % of Samples That Meets Requirements | Maximum Value | Lowest Monthly % of Samples That Meets Requirements | Maximum Value | Lowest Monthly % of Samples That Meets Requirements | |
| Turbidity (NTU) (At Treatment Plant) | n/a | 0 | TT | 0.10 | 100% | NR | NR | 0.24 | 100% | 0.14 | 100% | 0.17 | 100% | 0.27 | 100% | 0.10 | 100% | Soil runoff |
| | | | | Range of All Distribution Sites Tested | Highest Quarterly RAA | Range of All Distribution Sites Tested | Highest Quarterly RAA | Range of All Distribution Sites Tested | Highest Quarterly RAA | Range of All Distribution Sites Tested | Highest Quarterly RAA | Range of All Distribution Sites Tested | Highest Quarterly RAA | Range of All Distribution Sites Tested | Highest Quarterly RAA | Range of All Distribution Sites Tested | Highest Quarterly RAA | |
| Bromate (µg/L) | 0.1 | n/a | 10 | ND | ND | NR | NR | ND | ND | ND–8 | ND | NR | NR | NR | NR | ND–14 | NR | By-product of drinking water disinfection |
| Chloramines as $Cl_2$ (mg/L) expressed as non-mandatory goals and levels [MRDLG and MRDL] | | 4 | 4 | ND–3.4 | 1.6 | 0.35–3.3 | 2.6 | n/a | n/a | n/a | n/a | 0.1–2.9 | 1.7 | ND–3.3 | 1.5 | ND–1.8 | 1.0 | Drinking water disinfectant added for treatment |
| Haloacetic acids (µg/L) | n/a | n/a | 60 | ND–11.8 | 4.6 | ND–15.1 | 5.7 | n/a | n/a | n/a | n/a | ND–8.7 | 7.5 | ND–17 | 10.4 | ND–6.2 | 2.0 | By-product of drinking water disinfection |
| Total trihalomethanes (µg/L) | n/a | n/a | 80 | 5.9–63.4 | 22.8 | 14.0–23.5 | 24.4[2] | n/a | n/a | n/a | n/a | 34–64 | 53.9 | 8.3–41 | 25.2 | 1.8–30 | 12.9 | By-product of drinking water disinfection |
| **MICROBIOLOGICAL STANDARDS** | **PHG** | **MCLG** | **MCL** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **MAJOR SOURCE IN DRINKING WATER** |
| Total coliform | n/a | 0 | >5% of monthly samples | ND–1.1% | 0.28% | ND–2.0% | 0.17% | n/a | n/a | n/a | n/a | ND | ND | ND | ND | ND | ND | Naturally present in the environment |
| **LEAD/COPPER STUDY** | **PHG** | **MCLG** | **Action Limit** | **# of Sites Tested/ # Exceeding Action Limit** | **90th Percentile** | **# of Sites Tested/ # Exceeding Action Limit** | **90th Percentile** | **# of Sites Tested/ # Exceeding Action Limit** | **90th Percentile** | **# of Sites Tested/ # Exceeding Action Limit** | **90th Percentile** | **# of Sites Tested/ # Exceeding Action Limit** | **90th Percentile** | **# of Sites Tested/ # Exceeding Action Limit** | **90th Percentile** | **# of Sites Tested/ # Exceeding Action Limit** | **90th Percentile** | **MAJOR SOURCE IN DRINKING WATER** |
| EPA lead study (µg/L) | 0.2 | n/a | 15 | 61/0 | ND | 36/0 | ND | n/a | n/a | n/a | n/a | 57/1 | ND | 32/0 | ND | 64/0 | ND | Internal corrosion of household plumbing |
| EPA copper study (mg/L) | 0.3 | n/a | 1.3 | 61/0 | 0.14 | 36/0 | 0.21 | n/a | n/a | n/a | n/a | 57/0 | 0.06 | 32/0 | ND | 64/0 | ND | Internal corrosion of household plumbing |
| | | | DATE OF STUDY: | August 2010 | | July 2010 | | n/a | | n/a | | September 2009 | | August 2009 | | June 2009 | | |
| **RADIOCHEMISTRY** | **PHG** | **MCLG** | **MCL** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | |
| Total alpha (pCi/L) | n/a | 0 | 15 | ND–3.1 | ND | ND–3.1 | ND | ND–3.1 | ND | ND–3.1 | ND | ND–3.1 | ND | ND | n/a | ND–3.1 | ND | |
| Total beta (pCi/L) | n/a | 0 | 50[3] | ND–5.8 | ND | ND–5.8 | ND | ND–5.8 | ND | ND–5.8 | ND | ND–5.8 | ND | ND–5.8 | n/a | ND–5.8 | ND | |
| Uranium (pCi/L) | 0.5 | n/a | 20 | ND | ND | 2.7 | n/a | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | |
| **SECONDARY DRINKING WATER STANDARDS** | **PHG** | **MCLG** | **MCL** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **MAJOR SOURCE IN DRINKING WATER** |
| Aluminum (µg/L) | 600 | n/a | 200 | ND | n/a | ND | n/a | ND | n/a | ND | n/a | ND | ND | ND–90 | ND | ND | ND | Erosion of natural deposits; residue from surface water treatment processes |
| Chloride (mg/L) | n/a | n/a | 500 | 39–95 | 60 | 31–100 | 60 | 20–120 | 51 | 18–201 | 87 | 22–148 | 68 | 47–147 | 79 | 25–99 | 62 | Seawater influence; runoff/leaching of natural deposits |
| Color (units) | n/a | n/a | 15 units | ND | n/a | 5 | n/a | 5 | n/a | ND | n/a | ND | ND | ND | ND | ND | ND | Naturally occurring organic materials |
| Odor-threshold (units) | n/a | n/a | 3 units | NR | NR | NR | NR | NR | NR | NR | NR | ND–2 | ND | 1.3–2.0 | 1.6 | 1.0–3.0 | 2.0 | Naturally occurring organic materials |
| Specific conductance (µS/cm) | n/a | n/a | 1,600 | 355–552 | 470 | 398–685 | 570 | 264–608 | 445 | 241–933 | 528 | 390–520 | 455 | 403–653 | 543 | 280–620 | 450 | Seawater influence; substances that form ions when in water |
| Sulfate (mg/L) | n/a | n/a | 500 | 58–78 | 69 | 65–98 | 86 | 44–76 | 65 | 40–82 | 58 | 44–47 | 46 | 11–290 | 62 | 35–53 | 44 | Runoff and leaching of natural deposits |
| Total dissolved solids (mg/L) | n/a | n/a | 1,000 | NR | NR | NR | NR | NR | NR | NR | NR | 210–290 | 250 | 226–419 | 320 | 150–340 | 245 | Runoff and leaching of natural deposits |
| Turbidity (NTU) (distribution system) | n/a | n/a | 5 | 0.05–0.73 | 0.14 | 0.08–1.7 | 0.14 | n/a | n/a | n/a | n/a | 0.04–0.13 | 0.07 | 0.05–0.90 | 0.16 | 0.05–0.33 | 0.11 | Soil runoff |
| **GENERAL WATER QUALITY PARAMETERS** | **PHG** | **MCLG** | **MCL** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | |
| Alkalinity (mg/L) | n/a | n/a | n/a | 47–69 | 60 | 71–115 | 92 | 35–88 | 64 | 43–73 | 55 | 52–109 | 79 | 77–158 | 114 | 59–80 | 70 | |
| Ammonia (mg/L) | n/a | n/a | n/a | ND | n/a | 0.2 | n/a | 0.2 | n/a | 0.5 | n/a | NR | NR | ND–0.52 | 0.19 | ND | ND | |
| Bromide (mg/L) | n/a | n/a | n/a | ND–0.25 | 0.14 | ND–0.23 | 0.14 | ND–0.22 | 0.11 | ND–0.34 | 0.13 | NR | NR | NR | NR | 0.08–0.32 | 0.21 | |
| Calcium (mg/L) | n/a | n/a | n/a | 17–24 | 22 | 23–38 | 31 | 13–29 | 22 | 13–23 | 18 | 12–29 | 20 | NR | NR | 13–21 | 17 | |
| Corrosivity (SI) | n/a | n/a | non-corrosive | –0.46–+0.48 | +0.24 | –0.14–+0.56 | +0.12 | –1.0–+0.77 | +0.07 | –0.30–+0.35 | +0.09 | +0.48–+0.73 | +0.61 | NR | NR | +0.14–+0.78 | +0.47 | |
| Hardness (mg/L) | n/a | n/a | n/a | 80–120 | 99 | 98–165 | 136 | 60–126 | 99 | 56–132 | 91 | 46–124 | 91 | 100–170 | 135 | 63–110 | 87 | |
| Magnesium (mg/L) | n/a | n/a | n/a | 9–13 | 12 | 11–18 | 15 | 6–22 | 12 | 6–19 | 12 | 11–13 | 12 | NR | NR | 7.6–15 | 11 | |
| pH | n/a | n/a | n/a | 7.9–8.6 | 8.4 | 8.0–8.4 | 8.1 | 7.6–8.8 | 8.3 | 8.2–8.8 | 8.5 | 8.0–9.1 | 8.6 | 8.0–8.8 | 8.5 | 7.5–9.0 | 8.9 | |
| Potassium (mg/L) | n/a | n/a | n/a | 2.0–4.1 | 2.9 | 1.6–4.3 | 2.7 | 1.5–4.5 | 2.7 | 1.5–5.1 | 2.6 | 2.4–2.6 | 2.5 | NR | NR | 1.6–3.5 | 2.6 | |
| Sodium (mg/L) | n/a | n/a | n/a | 39–70 | 53 | 41–74 | 59 | 30–70 | 49 | 26–124 | 64 | 42–56 | 49 | 31–96 | 51 | 31–74 | 53 | |
| **UCMR SCREENING SURVEY MONITORING** | **PHG** | **MCLG** | **Notification Level** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | **RANGE** | **AVERAGE** | |
| *N*-Nitroso-dimethylamine (mg/L) | 3 | n/a | 10 | ND–5.3[4] | 3.3[4] | NR | NR | NR | NR | NR | NR | NR | NR | ND–14[4] | 6.6[4] | NR | NR | |

### ABBREVIATIONS

| | |
|---|---|
| **AL =** | Action limit |
| **CCWD =** | Contra Costa Water District |
| **mg/L =** | Milligrams per liter (parts per million) |
| **n/a =** | Not applicable |
| **ND =** | Not detected |
| **NR =** | Not required |
| **NTU =** | Nephelometric Turbity Units |
| **pCi/L =** | Picocuries per liter (a measure of radioactivity) |
| **RAA =** | Running annual average |
| **SI =** | Saturation index (a measure of corrosivity) |
| **WTP =** | Water treatment plant |
| **µg/L =** | Micrograms per liter (parts per billion) |
| **µS/cm =** | Microsiemens per centimeter (a measure of conductivity) |

# Water Quality Notifications:

**Cryptosporidium:**
In a few instances, Cryptosporidium was detected in untreated water before it entered a treatment plant. Cryptosporidium is a common microbial pathogen found in surface water throughout the United States. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. To address Cryptosporidium, your drinking water is treated to the requirements of the State of California's Cryptosporidium Action Plan. In addition, water treated at plants owned by Contra Costa Water District, Diablo Water District and the City of Martinez is treated with ozone, potentially the most effective disinfectant available. Ingestion of Cryptosporidium may cause an abdominal infection with nausea, diarrhea and abdominal cramps. Most healthy people can overcome the disease in a few weeks. People with compromised immune systems could develop a life-threatening illness if they ingest Cryptosporidium, and they should talk to their doctors about avoiding infection. Cryptosporidium must be ingested to cause illness, and it can be spread through means other than drinking water.

**Lead:**
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Your drinking water provider is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or www.epa.gov/safewater/lead.

**Fluoride:**
To prevent tooth decay, fluoride is added to your drinking water. This is a long-standing practice that has improved public health over many years. The California Department of Public Health is a good source of information about fluoridation. Information can be found at www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx.



# Source Water Assessments

**Source water assessments are one-time studies conducted to determine how susceptible a water supply is to contamination.**

**Contra Costa Water District**
In June 2002 and May 2003, source water assessments were conducted for CCWD's water sources. These sources include the Delta intakes on Old River, Rock Slough and Mallard Slough, as well as the Los Vaqueros, Contra Loma, Mallard and Martinez reservoirs and the Contra Costa Canal (sampled at Clyde).

The assessments were based on a review of data collected from 1996 through 2001, as well as a review of the activities and facilities located at or near each source. In summary:

- The District's Delta sources were found to be most vulnerable to the effects of saltwater intrusion, agricultural drainage, recreational boating, and regulated point discharges.
- The District's reservoirs were found to be most vulnerable to the effects of associated recreation, roads and parking lots, and watershed runoff.
- The Contra Costa Canal traverses rural, municipal and industrial areas. It was found to be most vulnerable to gas stations, chemical/petroleum processing/storage, septic systems, historic landfills and military institutions.

For more information, contact Jessica Edwards-Brandt at (925) 688-8183.

**City of Antioch**
In April 2003, a source water assessment was conducted for the Antioch Municipal Reservoir and the San Joaquin River intake of the City of Antioch water system.

The following water sources were found to be most vulnerable to the following activities NOT associated with contaminants in the water supply:

**Antioch Municipal Reservoir:** Sewer collection systems
**San Joaquin River:** Chemical/petroleum processing storage, wastewater treatment plants and disposal facilities.

The following water sources were found to be most vulnerable to the following activities associated with contaminants in the water supply:

**San Joaquin River:** Saltwater intrusion.
Water from the San Joaquin River is not always acceptable due to saltwater intrusion. Historically, as major diversions began and the freshwater flows into the Delta decreased, saline bay waters have moved further upstream, replacing the fresh water. When chloride levels in the river exceed 250 milligrams per liter, the City stops pumping until chloride levels decrease.

You may request a summary of the assessment by contacting Betty Graham, California Department of Public Health at (510) 620-3454.

**City of Pittsburg**
In November 2001, a source water assessment was conducted for the City of Pittsburg's Rossmoor Well. In July 2009, a source water assessment was conducted for the Bodega Well.

The following water sources were found to be most vulnerable to the following activities NOT associated with any detected contaminants in the water supply:

**Bodega Well:** Residential sewer collection systems, abandoned military installation (Camp Stoneman) and illegal activities (drug labs).

**Rossmoor Well:** Grazing, sewer collection systems, utility stations, maintenance areas.

You may request a summary of the assessment by contacting Betty Graham, California Department of Public Health at (510) 620-3454.

**Diablo Water District (Oakley)**
In April 2005, a source water assessment was conducted for the Diablo Water District's Glen Park Well. The source is considered to be most vulnerable to the following activities NOT associated with contaminants in the water supply: historic waste dumps/landfills, septic systems – high density (>1/acre).

You may request a summary of the assessment by contacting Paul Urenda at (925) 625-2112.

CONTRA COSTA WATER DISTRICT

P.O. BOX H2O
CONCORD, CA 94524

# ANNUAL WATER QUALITY REPORT

## How to Get Involved in the Quality of Your Water:

**Contra Costa Water District:** The Board of Directors meets in regular session at 6:30 p.m. on the first and third Wednesday of each month. Meetings are held in the Board Room at the Contra Costa Water District Center, 1331 Concord Ave., Concord. For meeting agendas, contact the District Secretary at **(925) 688-8024** or log on to **www.ccwater.com**.

**City of Martinez:** The Martinez City Council meets in regular session at 7 p.m. on the first and third Wednesday of each month. Meetings are held in Council Chambers at 525 Henrietta Street, Martinez. For meeting agendas, contact the Deputy City Clerk at **(925) 372-3512** or log on to **www.cityofmartinez.org**.

**City of Pittsburg:** The Pittsburg City Council meets in regular session at 7 p.m. on the first and third Monday of each month. Meetings are held in Council Chambers at 65 Civic Drive, Pittsburg. For meeting agendas, call **(925) 252-4850** or log on to **www.ci.pittsburg.ca.us**.

**City of Antioch:** The Antioch City Council meets in regular session at 7 p.m. on the second and fourth Tuesday of each month. Meetings are held in Council Chambers at Third and H streets, Antioch. For meeting agendas, contact the City Clerk at **(925) 779-7009** or log on to **www.ci.antioch.ca.us**.

**Diablo Water District (Oakley):** The Board of Directors meets in regular session at 7:30 p.m. on the fourth Wednesday of each month. Meetings are held at 2107 Main Street, Oakley. For meeting agendas, contact DWD at **(925) 625-3798** or log on to **www.diablowater.org**.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

此报告包含有关您的饮用水的重要信息。请人帮您翻译出来，或请看懂此报告的人将内容说给您听。

این گزارش شامل اطلاعات مهمي درمورد اب اشاميدني شما ميباشد. از شخصي بخواهيد که به شما ترجمه کنند و يا با شخصي که اين موضوع را ميفهمند صحبت بکنيد.

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

This report contains important information about your drinking water. Have someone translate it for you, or speak with someone who understands it.

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# APPENDIX H

## CCWD BMP Reports (FY09, FY10 and 10-Year)

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| BMP Data Report: FY10 | Antioch |
|---|---|
| July 1, 2009 to June 30, 2010 | |
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | 62 |
| Number of MF Residential INDOOR Surveys conducted | 28 |
| Number of SF Showerheads provided | 98 |
| Number of SF Aerators provided | 144 |
| Number of MF Showerheads provided | 100 |
| Number of MF Aerators provided | 100 |
| Number of Residential Washer Rebates (tier 3) | 694 |
| Number of Residential Washer Rebates (tier 2) | 59 |
| Number of SF HET Rebates | 752 |
| Number of MF HET Rebates | 23 |
| New Development Standards (# of new SF accounts) | 0 |
| New Development Standards (# of new MF dwellings) | 0 |
| Landscape | |
| Number of Mixed use CII or MF landscape audits conducted | 0 |
| Number of dedicated irrigation account landscape audits conducted | 0 |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | 0 |
| Annual Total Water Budget for accounts with Water Budgets | 0 |
| Annual Total Water Use for accounts with Water Budgets | 0 |
| Number of SF SMART Controller Rebates (# of stations) | 21 |
| Number of SF SMART Controller Rebates (# of clocks | 2 |
| Number of CII/ MF SMART Controller Rebates (# of stations) | 230 |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | 6 |
| Total Smart Timer REBATE DOLLARS Provided | 9725 |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 0 |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | 0 |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | 0 |
| Number of CII/MF Master Valves | 0 |
| Number of CII/MF Sub Meters | 0 |
| Number of CII/MF Flow Meters | 0 |
| Number of CII/ MF Rain sensors | 0 |
| Number of CII/MF Pressure Compensating Screens | 0 |
| Number of CII/MF Check Valves | 0 |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | 0 |
| Number of SF Cash for Grass Rebates | 4 |
| Total SF Cash for Grass Rebate Dollars Provided in Year | 1437 |
| Number of CII/ MF Cash for Grass Rebates | 0 |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | 0 |
| Fall Back Watering Campaign | 0 |
| Commercial | |
| Number of CII audits completed | 0 |
| Number of Commercial Washer Rebates (Laundromat or Common Laundry Facility) | 0 |
| Number of CII HET Rebates | 19 |
| Number of CII Urinal Rebates | 0 |
| Number of CII Pre-Rinse Spray Nozzles provided | 0 |
| Number of CII Conductivity Meters | 0 |
| Number of CII Restaurant Food Steamer Retrofits | 0 |
| Number of CII Restaurant Dishwasher Retrofits | 0 |
| New Development Standards (# of new CII accounts) | 0 |

| BMP Data Report: FY10<br><br>July 1, 2009 to June 30, 2010 | Bay Point (GSW) |
|---|---|
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | 2 |
| Number of MF Residential INDOOR Surveys conducted | 0 |
| Number of SF Showerheads provided | 16 |
| Number of SF Aerators provided | 22 |
| Number of MF Showerheads provided | 50 |
| Number of MF Aerators provided | 0 |
| Number of Residential Washer Rebates (tier 3) | 108 |
| Number of Residential Washer Rebates (tier 2) | 10 |
| Number of SF HET Rebates | 160 |
| Number of MF HET Rebates | 3 |
| New Development Standards (# of new SF accounts) | 0 |
| New Development Standards (# of new MF dwellings) | 0 |
| Landscape | |
| Number of Mixed use CII or MF landscape audits conducted | 0 |
| Number of dedicated irrigation account landscape audits conducted | 0 |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | 0 |
| Annual Total Water Budget for accounts with Water Budgets | 0 |
| Annual Total Water Use for accounts with Water Budgets | 0 |
| Number of SF SMART Controller Rebates (# of stations) | 0 |
| Number of SF SMART Controller Rebates (# of clocks | 0 |
| Number of CII/ MF SMART Controller Rebates (# of stations) | 54 |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | 3 |
| Total Smart Timer REBATE DOLLARS Provided | 2160 |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 11 |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | 555 |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | 555 |
| Number of CII/MF Master Valves | 0 |
| Number of CII/MF Sub Meters | 0 |
| Number of CII/MF Flow Meters | 1 |
| Number of CII/ MF Rain sensors | 0 |
| Number of CII/MF Pressure Compensating Screens | 0 |
| Number of CII/MF Check Valves | 0 |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | $ 6,305.26 |
| Number of SF Cash for Grass Rebates | 1 |
| Total SF Cash for Grass Rebate Dollars Provided in Year | $ 174.00 |
| Number of CII/ MF Cash for Grass Rebates | 0 |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | $ - |
| Fall Back Watering Campaign | 0 |
| Commercial | |
| Number of CII audits completed | 0 |
| Number of Commercial Washer Rebates (Laundromat or Common Laundry Facility) | 0 |
| Number of CII HET Rebates | 1 |
| Number of CII Urinal Rebates | 0 |
| Number of CII Pre-Rinse Spray Nozzles provided | 0 |
| Number of CII Conductivity Meters | 0 |
| Number of CII Restaurant Food Steamer Retrofits | 0 |
| Number of CII Restaurant Dishwasher Retrofits | 0 |
| New Development Standards (# of new CII accounts) | 0 |

| BMP Data Report: FY10<br><br>July 1, 2009 to June 30, 2010 | Brentwood |
|---|---|
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | 2 |
| Number of MF Residential INDOOR Surveys conducted | 0 |
| Number of SF Showerheads provided | 3 |
| Number of SF Aerators provided | 4 |
| Number of MF Showerheads provided | 0 |
| Number of MF Aerators provided | 0 |
| Number of Residential Washer Rebates (tier 3) | 53 |
| Number of Residential Washer Rebates (tier 2) | 5 |
| Number of SF HET Rebates | 0 |
| Number of MF HET Rebates | 0 |
| New Development Standards (# of new SF accounts) | 0 |
| New Development Standards (# of new MF dwellings) | 0 |
| Landscape | |
| Number of Mixed use CII or MF landscape audits conducted | 0 |
| Number of dedicated irrigation account landscape audits conducted | 0 |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | 0 |
| Annual Total Water Budget for accounts with Water Budgets | 0 |
| Annual Total Water Use for accounts with Water Budgets | 0 |
| Number of SF SMART Controller Rebates (# of stations) | 0 |
| Number of SF SMART Controller Rebates (# of clocks | 0 |
| Number of CII/ MF SMART Controller Rebates (# of stations) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | 0 |
| Total Smart Timer REBATE DOLLARS Provided | 0 |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 0 |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | 0 |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | 0 |
| Number of CII/MF Master Valves | 0 |
| Number of CII/MF Sub Meters | 0 |
| Number of CII/MF Flow Meters | 0 |
| Number of CII/ MF Rain sensors | 0 |
| Number of CII/MF Pressure Compensating Screens | 0 |
| Number of CII/MF Check Valves | 0 |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | 0 |
| Number of SF Cash for Grass Rebates | 0 |
| Total SF Cash for Grass Rebate Dollars Provided in Year | 0 |
| Number of CII/ MF Cash for Grass Rebates | 0 |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | 0 |
| Fall Back Watering Campaign | 0 |
| Commercial | |
| Number of CII audits completed | 0 |
| Number of Commercial Washer Rebates (Laundromat or Common Laundry Facility) | 0 |
| Number of CII HET Rebates | 0 |
| Number of CII Urinal Rebates | 0 |
| Number of CII Pre-Rinse Spray Nozzles provided | 0 |
| Number of CII Conductivity Meters | 0 |
| Number of CII Restaurant Food Steamer Retrofits | 0 |
| Number of CII Restaurant Dishwasher Retrofits | 0 |
| New Development Standards (# of new CII accounts) | 0 |

| BMP Data Report: FY10 | Martinez (RWSA) |
|---|---|
| July 1, 2009 to June 30, 2010 | |
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | 3 |
| Number of MF Residential INDOOR Surveys conducted | 14 |
| Number of SF Showerheads provided | 104 |
| Number of SF Aerators provided | 217 |
| Number of MF Showerheads provided | 0 |
| Number of MF Aerators provided | 24 |
| Number of Residential Washer Rebates (tier 3) | 302 |
| Number of Residential Washer Rebates (tier 2) | 21 |
| Number of SF HET Rebates | 208 |
| Number of MF HET Rebates | 79 |
| New Development Standards (# of new SF accounts) | 0 |
| New Development Standards (# of new MF dwellings) | 0 |
| Landscape | |
| Number of Mixed use CII or MF landscape audits conducted | 0 |
| Number of dedicated irrigation account landscape audits conducted | 0 |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | 0 |
| Annual Total Water Budget for accounts with Water Budgets | 0 |
| Annual Total Water Use for accounts with Water Budgets | 0 |
| Number of SF SMART Controller Rebates (# of stations) | 28 |
| Number of SF SMART Controller Rebates (# of clocks | 3 |
| Number of CII/ MF SMART Controller Rebates (# of stations) | 45 |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | 2 |
| Total Smart Timer REBATE DOLLARS Provided | $ 1,731.74 |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 0 |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | 409 |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | 228 |
| Number of CII/MF Master Valves | 0 |
| Number of CII/MF Sub Meters | 0 |
| Number of CII/MF Flow Meters | 0 |
| Number of CII/ MF Rain sensors | 0 |
| Number of CII/MF Pressure Compensating Screens | 0 |
| Number of CII/MF Check Valves | 94 |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | $ 2,246.92 |
| Number of SF Cash for Grass Rebates | 7 |
| Total SF Cash for Grass Rebate Dollars Provided in Year | $ 2,770.00 |
| Number of CII/ MF Cash for Grass Rebates | 0 |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | 0 |
| Fall Back Watering Campaign | 0 |
| Commercial | |
| Number of CII audits completed | 0 |
| Number of Commercial Washer Rebates (Laundromat or Common Laundry Facility) | 0 |
| Number of CII HET Rebates | 5 |
| Number of CII Urinal Rebates | 0 |
| Number of CII Pre-Rinse Spray Nozzles provided | 0 |
| Number of CII Conductivity Meters | 0 |
| Number of CII Restaurant Food Steamer Retrofits | 0 |
| Number of CII Restaurant Dishwasher Retrofits | 0 |
| New Development Standards (# of new CII accounts) | 0 |

| BMP Data Report: FY10 | Oakley (DWD) |
|---|---|
| July 1, 2009 to June 30, 2010 | |
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | 5 |
| Number of MF Residential INDOOR Surveys conducted | 0 |
| Number of SF Showerheads provided | 6 |
| Number of SF Aerators provided | 13 |
| Number of MF Showerheads provided | 0 |
| Number of MF Aerators provided | 0 |
| Number of Residential Washer Rebates (tier 3) | 225 |
| Number of Residential Washer Rebates (tier 2) | 9 |
| Number of SF HET Rebates | 214 |
| Number of MF HET Rebates | 15 |
| New Development Standards (# of new SF accounts) | 0 |
| New Development Standards (# of new MF dwellings) | 0 |
| Landscape | |
| Number of Mixed use CII or MF landscape audits conducted | 0 |
| Number of dedicated irrigation account landscape audits conducted | 0 |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | 0 |
| Annual Total Water Budget for accounts with Water Budgets | 0 |
| Annual Total Water Use for accounts with Water Budgets | 0 |
| Number of SF SMART Controller Rebates (# of stations) | 0 |
| Number of SF SMART Controller Rebates (# of clocks | 0 |
| Number of CII/ MF SMART Controller Rebates (# of stations) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | 0 |
| Total Smart Timer REBATE DOLLARS Provided | 0 |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 0 |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | 0 |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | 0 |
| Number of CII/MF Master Valves | 0 |
| Number of CII/MF Sub Meters | 0 |
| Number of CII/MF Flow Meters | 0 |
| Number of CII/ MF Rain sensors | 0 |
| Number of CII/MF Pressure Compensating Screens | 0 |
| Number of CII/MF Check Valves | 0 |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | 0 |
| Number of SF Cash for Grass Rebates | 2 |
| Total SF Cash for Grass Rebate Dollars Provided in Year | $ 627.00 |
| Number of CII/ MF Cash for Grass Rebates | 0 |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | 0 |
| Fall Back Watering Campaign | 0 |
| Commercial | |
| Number of CII audits completed | 9 |
| Number of Commercial Washer Rebates (Laundromat or Common Laundry Facility) | 0 |
| Number of CII HET Rebates | 0 |
| Number of CII Urinal Rebates | 0 |
| Number of CII Pre-Rinse Spray Nozzles provided | 0 |
| Number of CII Conductivity Meters | 0 |
| Number of CII Restaurant Food Steamer Retrofits | 0 |
| Number of CII Restaurant Dishwasher Retrofits | 0 |
| New Development Standards (# of new CII accounts) | 0 |

| BMP Data Report: FY10 | Pittsburg |
|---|---|
| July 1, 2009 to June 30, 2010 | |
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | 32 |
| Number of MF Residential INDOOR Surveys conducted | 0 |
| Number of SF Showerheads provided | 166 |
| Number of SF Aerators provided | 80 |
| Number of MF Showerheads provided | 0 |
| Number of MF Aerators provided | 0 |
| Number of Residential Washer Rebates (tier 3) | 429 |
| Number of Residential Washer Rebates (tier 2) | 30 |
| Number of SF HET Rebates | 465 |
| Number of MF HET Rebates | 34 |
| New Development Standards (# of new SF accounts) | 0 |
| New Development Standards (# of new MF dwellings) | 0 |
| Landscape | |
| Number of Mixed use CII or MF landscape audits conducted | 1 |
| Number of dedicated irrigation account landscape audits conducted | 0 |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | 0 |
| Annual Total Water Budget for accounts with Water Budgets | 0 |
| Annual Total Water Use for accounts with Water Budgets | 0 |
| Number of SF SMART Controller Rebates (# of stations) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of stations) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | 0 |
| Total Smart Timer REBATE DOLLARS Provided | 0 |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 0 |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 0 |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | 0 |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | 0 |
| Number of CII/MF Master Valves | 0 |
| Number of CII/MF Sub Meters | 0 |
| Number of CII/MF Flow Meters | 0 |
| Number of CII/ MF Rain sensors | 0 |
| Number of CII/MF Pressure Compensating Screens | 0 |
| Number of CII/MF Check Valves | 0 |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | $ - |
| Number of SF Cash for Grass Rebates | 2 |
| Total SF Cash for Grass Rebate Dollars Provided in Year | $ 831.00 |
| Number of CII/ MF Cash for Grass Rebates | 6 |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | $ 13,074.00 |
| Fall Back Watering Campaign | 0 |
| Commercial | |
| Number of CII audits completed | 1 |
| Number of Commercial Washer Rebates (Laundromat or Common Laundry Facility) | 0 |
| Number of CII HET Rebates | 15 |
| Number of CII Urinal Rebates | 0 |
| Number of CII Pre-Rinse Spray Nozzles provided | 0 |
| Number of CII Conductivity Meters | 0 |
| Number of CII Restaurant Food Steamer Retrofits | 0 |
| Number of CII Restaurant Dishwasher Retrofits | 0 |
| New Development Standards (# of new CII accounts) | 0 |

| BMP Data Report: FY09 | Pittsburg |
|---|---|
| **July 1, 2008 to June 30, 2009** | |
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | 38 |
| Number of MF Residential INDOOR Surveys conducted | 0 |
| Number of SF Showerheads provided | 151 |
| Number of SF Aerators provided | 541 |
| Number of MF Showerheads provided | 2 |
| Number of MF Aerators provided | 2 |
| Number of Residential Washer Rebates (tier 3) | 307 |
| Number of Residential Washer Rebates (tier 2) | 27 |
| Number of MF Washer Rebates (common laundry facility) (tier 3) | 0 |
| Number of SF HET Rebates | 105 |
| Number of MF HET Rebates | 3 |
| New Development Standards (# of new SF accounts) | 0 |
| New Development Standards (# of new MF dwelings) | 0 |
| **Landscape** | 0 |
| Number of Mixed use CII or MF landscape audits conducted | 0 |
| Number of dedicated irrigation account landscape audits conducted | 4 |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | 0 |
| Annual Total Water Budget for accounts with Water Budgets | 0 |
| Annual Total Water Use for accounts with Water Budgets | 0 |
| Number of SF SMART Controller Rebates (# of stations) | 0 |
| Number of SF SMART Controller Rebates (# of controllers) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of stations) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | 0 |
| Total Smart Timer REBATE DOLLARS Provided | $ - |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 0 |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | 0 |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | 0 |
| Number of Large Rotors | 0 |
| Number of None Drip Pressure Regulators | 0 |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | $ - |
| Number of SF Cash for Grass Rebates | 0 |
| Total SF Cash for Grass Rebate Dollars Provided in Year | $ - |
| Number of CII/ MF Cash for Grass Rebates | 0 |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | 0 |
| Fall Back Watering Campaign | 0 |
| **Commercial** | 0 |
| Number of CII audits completed | 0 |
| Number of CII Washer Rebates (Laundrymat) | 0 |
| Number of CII HET Rebates | 7 |
| Number of CII Urinal Rebates | 101 |
| Number of CII Pre-Rinse Spray Nozzles provided | 0 |
| Number of Water Brooms Rebated | 0 |
| Car Wash Recycling Rebate | 0 |
| Number of CII Conductivity Meters | 0 |
| Number of CII Restaurant Food Steamer Retrofits | 0 |
| Number of CII Restaurant Dishwasher Retrofits | 0 |
| New Development Standards (# of new CII accounts) | 0 |

| BMP Data Report: FY09 | Oakley (DWD) |
|---|---|
| **July 1, 2008 to June 30, 2009** | |
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | 7 |
| Number of MF Residential INDOOR Surveys conducted | 0 |
| Number of SF Showerheads provided | 409 |
| Number of SF Aerators provided | 510 |
| Number of MF Showerheads provided | 0 |
| Number of MF Aerators provided | 0 |
| Number of Residential Washer Rebates (tier 3) | 162 |
| Number of Residential Washer Rebates (tier 2) | 25 |
| Number of MF Washer Rebates (common laundry facility) (tier 3) | 0 |
| Number of SF HET Rebates | 68 |
| Number of MF HET Rebates | 0 |
| New Development Standards (# of new SF accounts) | 0 |
| New Development Standards (# of new MF dwelings) | 0 |
| **Landscape** | 0 |
| Number of Mixed use CII or MF landscape audits conducted | 0 |
| Number of dedicated irrigation account landscape audits conducted | 0 |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | 0 |
| Annual Total Water Budget for accounts with Water Budgets | 0 |
| Annual Total Water Use for accounts with Water Budgets | 0 |
| Number of SF SMART Controller Rebates (# of stations) | 0 |
| Number of SF SMART Controller Rebates (# of controllers) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of stations) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | 0 |
| Total Smart Timer REBATE DOLLARS Provided | $ - |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 0 |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | 0 |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | 0 |
| Number of Large Rotors | 0 |
| Number of None Drip Pressure Regulators | 0 |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | 0 |
| Number of SF Cash for Grass Rebates | 0 |
| Total SF Cash for Grass Rebate Dollars Provided in Year | $ - |
| Number of CII/ MF Cash for Grass Rebates | 0 |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | $ - |
| Fall Back Watering Campaign | 0 |
| **Commercial** | 0 |
| Number of CII audits completed | 0 |
| Number of CII Washer Rebates (Laundrymat) | 0 |
| Number of CII HET Rebates | 0 |
| Number of CII Urinal Rebates | 0 |
| Number of CII Pre-Rinse Spray Nozzles provided | 0 |
| Number of Water Brooms Rebated | 0 |
| Car Wash Recycling Rebate | 0 |
| Number of CII Conductivity Meters | 0 |
| Number of CII Restaurant Food Steamer Retrofits | 0 |
| Number of CII Restaurant Dishwasher Retrofits | 0 |
| New Development Standards (# of new CII accounts) | 0 |

| BMP Data Report: FY09 | Martinez (RWSA) |
|---|---|
| **July 1, 2008 to June 30, 2009** | |
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | 28 |
| Number of MF Residential INDOOR Surveys conducted | 12 |
| Number of SF Showerheads provided | 467 |
| Number of SF Aerators provided | 252 |
| Number of MF Showerheads provided | 137 |
| Number of MF Aerators provided | 37 |
| Number of Residential Washer Rebates (tier 3) | 244 |
| Number of Residential Washer Rebates (tier 2) | 15 |
| Number of MF Washer Rebates (common laundry facility) (tier 3) | 0 |
| Number of SF HET Rebates | 231 |
| Number of MF HET Rebates | 21 |
| New Development Standards (# of new SF accounts) | 0 |
| New Development Standards (# of new MF dwelings) | 0 |
| **Landscape** | **0** |
| Number of Mixed use CII or MF landscape audits conducted | 0 |
| Number of dedicated irrigation account landscape audits conducted | 4 |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | 0 |
| Annual Total Water Budget for accounts with Water Budgets | 0 |
| Annual Total Water Use for accounts with Water Budgets | 0 |
| Number of SF SMART Controller Rebates (# of stations) | 27 |
| Number of SF SMART Controller Rebates (# of controllers) | 2 |
| Number of CII/ MF SMART Controller Rebates (# of stations) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | 0 |
| Total Smart Timer REBATE DOLLARS Provided | $ 675 |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 0 |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | 0 |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | 0 |
| Number of Large Rotors | 0 |
| Number of None Drip Pressure Regulators | 0 |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | $ - |
| Number of SF Cash for Grass Rebates | 0 |
| Total SF Cash for Grass Rebate Dollars Provided in Year | 0 |
| Number of CII/ MF Cash for Grass Rebates | 0 |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | $ - |
| Fall Back Watering Campaign | 0 |
| **Commercial** | **0** |
| Number of CII audits completed | 6 |
| Number of CII Washer Rebates (Laundrymat) | 0 |
| Number of CII HET Rebates | 6 |
| Number of CII Urinal Rebates | 0 |
| Number of CII Pre-Rinse Spray Nozzles provided | 0 |
| Number of Water Brooms Rebated | 0 |
| Car Wash Recycling Rebate | 0 |
| Number of CII Conductivity Meters | 0 |
| Number of CII Restaurant Food Steamer Retrofits | 0 |
| Number of CII Restaurant Dishwasher Retrofits | 0 |
| New Development Standards (# of new CII accounts) | 0 |

| BMP Data Report: FY09 | Brentwood |
|---|---|
| **July 1, 2008 to June 30, 2009** | |
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | **0** |
| Number of MF Residential INDOOR Surveys conducted | **0** |
| Number of SF Showerheads provided | **0** |
| Number of SF Aerators provided | **0** |
| Number of MF Showerheads provided | **0** |
| Number of MF Aerators provided | **0** |
| Number of Residential Washer Rebates (tier 3) | **77** |
| Number of Residential Washer Rebates (tier 2) | **10** |
| Number of MF Washer Rebates (common laundry facility) (tier 3) | **0** |
| Number of SF HET Rebates | **0** |
| Number of MF HET Rebates | **0** |
| New Development Standards (# of new SF accounts) | **0** |
| New Development Standards (# of new MF dwelings) | **0** |
| **Landscape** | |
| Number of Mixed use CII or MF landscape audits conducted | **0** |
| Number of dedicated irrigation account landscape audits conducted | **0** |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | **0** |
| Annual Total Water Budget for accounts with Water Budgets | **0** |
| Annual Total Water Use for accounts with Water Budgets | **0** |
| Number of SF SMART Controller Rebates (# of stations) | **0** |
| Number of SF SMART Controller Rebates (# of controllers) | **0** |
| Number of CII/ MF SMART Controller Rebates (# of stations) | **0** |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | **0** |
| Total Smart Timer REBATE DOLLARS Provided | **0** |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | **0** |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | **0** |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | **0** |
| Number of Large Rotors | **0** |
| Number of None Drip Pressure Regulators | **0** |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | **0** |
| Number of SF Cash for Grass Rebates | **0** |
| Total SF Cash for Grass Rebate Dollars Provided in Year | **0** |
| Number of CII/ MF Cash for Grass Rebates | **0** |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | **0** |
| Fall Back Watering Campaign | **0** |
| **Commercial** | |
| Number of CII audits completed | **0** |
| Number of CII Washer Rebates (Laundrymat) | **0** |
| Number of CII HET Rebates | **0** |
| Number of CII Urinal Rebates | **0** |
| Number of CII Pre-Rinse Spray Nozzles provided | **0** |
| Number of Water Brooms Rebated | **0** |
| Car Wash Recycling Rebate | **0** |
| Number of CII Conductivity Meters | **0** |
| Number of CII Restaurant Food Steamer Retrofits | **0** |
| Number of CII Restaurant Dishwasher Retrofits | **0** |
| New Development Standards (# of new CII accounts) | **0** |

| BMP Data Report: FY09 | Bay Point (GSW) |
|---|---|
| **July 1, 2008 to June 30, 2009** | |
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | 4 |
| Number of MF Residential INDOOR Surveys conducted | 0 |
| Number of SF Showerheads provided | 303 |
| Number of SF Aerators provided | 507 |
| Number of MF Showerheads provided | 0 |
| Number of MF Aerators provided | 0 |
| Number of Residential Washer Rebates (tier 3) | 76 |
| Number of Residential Washer Rebates (tier 2) | 8 |
| Number of MF Washer Rebates (common laundry facility) (tier 3) | 0 |
| Number of SF HET Rebates | 40 |
| Number of MF HET Rebates | 11 |
| New Development Standards (# of new SF accounts) | 0 |
| New Development Standards (# of new MF dwelings) | 0 |
| **Landscape** | |
| Number of Mixed use CII or MF landscape audits conducted | 0 |
| Number of dedicated irrigation account landscape audits conducted | 0 |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | 0 |
| Annual Total Water Budget for accounts with Water Budgets | 0 |
| Annual Total Water Use for accounts with Water Budgets | 0 |
| Number of SF SMART Controller Rebates (# of stations) | 0 |
| Number of SF SMART Controller Rebates (# of controllers) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of stations) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | 0 |
| Total Smart Timer REBATE DOLLARS Provided | $ - |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 0 |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | 0 |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | 0 |
| Number of Large Rotors | 0 |
| Number of None Drip Pressure Regulators | 0 |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | $ - |
| Number of SF Cash for Grass Rebates | 0 |
| Total SF Cash for Grass Rebate Dollars Provided in Year | $ - |
| Number of CII/ MF Cash for Grass Rebates | 0 |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | 0 |
| Fall Back Watering Campaign | 0 |
| **Commercial** | 0 |
| Number of CII audits completed | 0 |
| Number of CII Washer Rebates (Laundrymat) | 0 |
| Number of CII HET Rebates | 0 |
| Number of CII Urinal Rebates | 0 |
| Number of CII Pre-Rinse Spray Nozzles provided | 0 |
| Number of Water Brooms Rebated | 0 |
| Car Wash Recycling Rebate | 0 |
| Number of CII Conductivity Meters | 0 |
| Number of CII Restaurant Food Steamer Retrofits | 0 |
| Number of CII Restaurant Dishwasher Retrofits | 0 |
| New Development Standards (# of new CII accounts) | 0 |

| BMP Data Report: FY09 | Antioch |
|---|---|
| **July 1, 2008 to June 30, 2009** | |
| **Residential** | |
| Number of SF Residential Surveys conducted (assume Indoor and Landscape included) | 72 |
| Number of MF Residential INDOOR Surveys conducted | 2 |
| Number of SF Showerheads provided | 598 |
| Number of SF Aerators provided | 761 |
| Number of MF Showerheads provided | 51 |
| Number of MF Aerators provided | 3 |
| Number of Residential Washer Rebates (tier 3) | 563 |
| Number of Residential Washer Rebates (tier 2) | 73 |
| Number of MF Washer Rebates (common laundry facility) (tier 3) | 0 |
| Number of SF HET Rebates | 348 |
| Number of MF HET Rebates | 13 |
| New Development Standards (# of new SF accounts) | 0 |
| New Development Standards (# of new MF dwelings) | 0 |
| **Landscape** | |
| Number of Mixed use CII or MF landscape audits conducted | 0 |
| Number of dedicated irrigation account landscape audits conducted | 7 |
| Number of Accounts with Water Budgets who received 2 or more Budget Site Reports during year | 0 |
| Annual Total Water Budget for accounts with Water Budgets | 0 |
| Annual Total Water Use for accounts with Water Budgets | 0 |
| Number of SF SMART Controller Rebates (# of stations) | 0 |
| Number of SF SMART Controller Rebates (# of controllers) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of stations) | 0 |
| Number of CII/ MF SMART Controller Rebates (# of controllers) | 0 |
| Total Smart Timer REBATE DOLLARS Provided | $ - |
| Number of CII/ MF Drip Retrofits (# OF STATIONS) | 0 |
| Number of CII/MF Sprinkler Rebates (# of HEADS) | 0 |
| Number of CII/ MF MP Rotator Rebates (# of nozzles) | 0 |
| Number of Large Rotors | 0 |
| Number of None Drip Pressure Regulators | 0 |
| Total Landscape REBATE DOLLARS provided for Irrigation upgrades other than Smart timers | $ - |
| Number of SF Cash for Grass Rebates | 0 |
| Total SF Cash for Grass Rebate Dollars Provided in Year | 0 |
| Number of CII/ MF Cash for Grass Rebates | 0 |
| Total CII/ MF Cash for Grass Rebate Dollars Provided in Year | $ - |
| Fall Back Watering Campaign | 0 |
| **Commercial** | 0 |
| Number of CII audits completed | 4 |
| Number of CII Washer Rebates (Laundrymat) | 0 |
| Number of CII HET Rebates | 2 |
| Number of CII Urinal Rebates | 0 |
| Number of CII Pre-Rinse Spray Nozzles provided | 0 |
| Number of Water Brooms Rebated | 2 |
| Car Wash Recycling Rebate | 0 |
| Number of CII Conductivity Meters | 0 |
| Number of CII Restaurant Food Steamer Retrofits | 0 |
| Number of CII Restaurant Dishwasher Retrofits | 0 |
| New Development Standards (# of new CII accounts) | 0 |

# AWWA WLCC Free Water Audit Software: Reporting Worksheet

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**Water Audit Report for:** Contra Costa Water District - Retail
**Reporting Year:** 2009 (7/2008 - 6/2009)

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

**All volumes to be entered as: ACRE-FEET PER YEAR**

## WATER SUPPLIED

<< Enter grading in column 'E'

| | | | | |
|---|---|---|---|---|
| Volume from own sources: | 7 | 38,091.000 | acre-ft/yr | |
| Master meter error adjustment (enter positive value): | 7 | 0.000 | under-registered | acre-ft/yr |
| Water imported: | 8 | 37.563 | acre-ft/yr | |
| Water exported: | 8 | 2,354.164 | acre-ft/yr | |
| **WATER SUPPLIED:** | | 35,774.399 | acre-ft/yr | |

## AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

| | | | | Pcnt: | Value: |
|---|---|---|---|---|---|
| Billed metered: | 9 | 34,126.000 | acre-ft/yr | | |
| Billed unmetered: | 10 | 0.000 | acre-ft/yr | | |
| Unbilled metered: | 9 | 40.000 | acre-ft/yr | | |
| Unbilled unmetered: | 8 | 4.586 | acre-ft/yr | ○ ◉ | 4.586 |
| **AUTHORIZED CONSUMPTION:** | | 34,170.586 | acre-ft/yr | | |

Use buttons to select percentage of water supplied **OR** value

## WATER LOSSES (Water Supplied - Authorized Consumption)

1,603.813 acre-ft/yr

### Apparent Losses

| | | | | Pcnt: | Value: |
|---|---|---|---|---|---|
| Unauthorized consumption: | | 89.436 | acre-ft/yr | 0.25% ◉ ○ | |

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

| | | | | | |
|---|---|---|---|---|---|
| Customer metering inaccuracies: | 8 | 485.000 | acre-ft/yr | ○ ◉ | 485.000 |
| Systematic data handling errors: | 8 | 100.000 | acre-ft/yr | | |
| Apparent Losses: | | 674.436 | | | |

Choose this option to enter a percentage of billed metered consumption. This is NOT a default value

### Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 929.377 acre-ft/yr

**WATER LOSSES:** 1,603.813 acre-ft/yr

## NON-REVENUE WATER

**NON-REVENUE WATER:** 1,648.399 acre-ft/yr

= Total Water Loss + Unbilled Metered + Unbilled Unmetered

## SYSTEM DATA

| | | | |
|---|---|---|---|
| Length of mains: | 9 | 862.0 | miles |
| Number of active AND inactive service connections: | 8 | 60,942 | |
| Connection density: | | 71 | conn./mile main |
| Average length of customer service line: | 10 | 0.0 | ft (pipe length between curbstop and customer meter or property boundary) |
| Average operating pressure: | 10 | 76.0 | psi |

## COST DATA

| | | | |
|---|---|---|---|
| Total annual cost of operating water system: | 8 | $58,826,901 | $/Year |
| Customer retail unit cost (applied to Apparent Losses): | 9 | $2.63 | $/100 cubic feet (ccf) |
| Variable production cost (applied to Real Losses): | 9 | $194.00 | $/acre-ft |

## PERFORMANCE INDICATORS

### Financial Indicators

| | |
|---|---|
| Non-revenue water as percent by volume of Water Supplied: | 4.6% |
| Non-revenue water as percent by cost of operating system: | 1.6% |
| Annual cost of Apparent Losses: | $773,975 |
| Annual cost of Real Losses: | $180,299 |

### Operational Efficiency Indicators

| | | |
|---|---|---|
| Apparent Losses per service connection per day: | 9.88 | gallons/connection/day |
| Real Losses per service connection per day*: | 13.61 | gallons/connection/day |
| Real Losses per length of main per day*: | N/A | |
| Real Losses per service connection per day per psi pressure: | 0.18 | gallons/connection/day/psi |
| ? Unavoidable Annual Real Losses (UARL): | 1,175.21 | acre-feet/year |
| From Above, Real Losses = Current Annual Real Losses (CARL): | 929.38 | acre-feet/year |
| ? Infrastructure Leakage Index (ILI) [CARL/UARL]: | 0.79 | |

* only the most applicable of these two indicators will be calculated

### WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 80 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Unauthorized consumption
3: Water imported

For more information, click here to see the Grading Matrix worksheet

# AWWA WLCC Free Water Audit Software: Reporting Worksheet

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**Water Audit Report for:** Contra Costa Water District - Retail
**Reporting Year:** 2010 (7/2009 - 6/2010)

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

**All volumes to be entered as: ACRE-FEET PER YEAR**

## WATER SUPPLIED

<< Enter grading in column 'E'

| | | | | |
|---|---|---|---|---|
| Volume from own sources: | 7 | 33,734.000 | acre-ft/yr | |
| Master meter error adjustment (enter positive value): | 7 | 0.000 | under-registered | acre-ft/yr |
| Water imported: | 8 | 29.498 | acre-ft/yr | |
| Water exported: | 8 | 2,446.637 | acre-ft/yr | |
| **WATER SUPPLIED:** | | 31,316.861 | acre-ft/yr | |

## AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

| | | | | Pcnt: | Value: |
|---|---|---|---|---|---|
| Billed metered: | 9 | 28,450.000 | acre-ft/yr | | |
| Billed unmetered: | 10 | 0.000 | acre-ft/yr | | |
| Unbilled metered: | 9 | 32.000 | acre-ft/yr | | |
| Unbilled unmetered: | 8 | 6.486 | acre-ft/yr | | 6.486 |
| **AUTHORIZED CONSUMPTION:** | | 28,488.486 | acre-ft/yr | | |

Use buttons to select percentage of water supplied **OR** value

## WATER LOSSES (Water Supplied - Authorized Consumption)

2,828.375 acre-ft/yr

### Apparent Losses

| | | | | Pcnt: | Value: |
|---|---|---|---|---|---|
| Unauthorized consumption: | | 78.292 | acre-ft/yr | 0.25% | |

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

| | | | | | |
|---|---|---|---|---|---|
| Customer metering inaccuracies: | 8 | 404.000 | acre-ft/yr | | 404.000 |
| Systematic data handling errors: | 8 | 100.000 | acre-ft/yr | | |
| Apparent Losses: | | 582.292 | | | |

Choose this option to enter a percentage of billed metered consumption. This is NOT a default value

### Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 2,246.083 acre-ft/yr

**WATER LOSSES:** 2,828.375 acre-ft/yr

## NON-REVENUE WATER

**NON-REVENUE WATER:** 2,866.861 acre-ft/yr

= Total Water Loss + Unbilled Metered + Unbilled Unmetered

## SYSTEM DATA

| | | | | |
|---|---|---|---|---|
| Length of mains: | 9 | 862.0 | miles | |
| Number of active AND inactive service connections: | 8 | 60,942 | | |
| Connection density: | | 71 | conn./mile main | |
| Average length of customer service line: | 10 | 0.0 | ft | (pipe length between curbstop and customer meter or property boundary) |
| Average operating pressure: | 10 | 76.0 | psi | |

## COST DATA

| | | | |
|---|---|---|---|
| Total annual cost of operating water system: | 8 | $56,357,536 | $/Year |
| Customer retail unit cost (applied to Apparent Losses): | 9 | $2.74 | $/100 cubic feet (ccf) |
| Variable production cost (applied to Real Losses): | 9 | $194.00 | $/acre-ft |

## PERFORMANCE INDICATORS

### Financial Indicators

| | |
|---|---|
| Non-revenue water as percent by volume of Water Supplied: | 9.2% |
| Non-revenue water as percent by cost of operating system: | 2.0% |
| Annual cost of Apparent Losses: | $695,245 |
| Annual cost of Real Losses: | $435,740 |

### Operational Efficiency Indicators

| | | |
|---|---|---|
| Apparent Losses per service connection per day: | 8.53 | gallons/connection/day |
| Real Losses per service connection per day*: | 32.90 | gallons/connection/day |
| Real Losses per length of main per day*: | N/A | |
| Real Losses per service connection per day per psi pressure: | 0.43 | gallons/connection/day/psi |
| Unavoidable Annual Real Losses (UARL): | 1,175.21 | acre-feet/year |
| From Above, Real Losses = Current Annual Real Losses (CARL): | 2,246.08 | acre-feet/year |
| Infrastructure Leakage Index (ILI) [CARL/UARL]: | 1.91 | |

* only the most applicable of these two indicators will be calculated

### WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 80 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Unauthorized consumption
3: Water imported

For more information, click here to see the Grading Matrix worksheet

# AWWA WLCC Free Water Audit Software: Reporting Worksheet

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**Water Audit Report for:** Contra Costa Water District - Wholesale
**Reporting Year:** 2009 (7/2008 - 6/2009)

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

**All volumes to be entered as: ACRE-FEET PER YEAR**

## WATER SUPPLIED

<< Enter grading in column 'E'

| | | | | | |
|---|---|---|---|---|---|
| Volume from own sources: | ? | 7 | 117,694.000 | acre-ft/yr | |
| Master meter error adjustment (enter positive value): | ? | 7 | 0.000 | under-registered | acre-ft/yr |
| Water imported: | ? | 8 | 0.000 | acre-ft/yr | |
| Water exported: | ? | 8 | 26,888.000 | acre-ft/yr | |
| **WATER SUPPLIED:** | | | 90,806.000 | acre-ft/yr | |

## AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

| | | | | | Pcnt: | Value: |
|---|---|---|---|---|---|---|
| Billed metered: | ? | 9 | 85,939.000 | acre-ft/yr | | |
| Billed unmetered: | ? | 10 | 263.000 | acre-ft/yr | | |
| Unbilled metered: | ? | 9 | 1,175.000 | acre-ft/yr | | |
| Unbilled unmetered: | ? | | 1,135.075 | acre-ft/yr | 1.25% | |

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

Use buttons to select percentage of water supplied **OR** value

| | | | | |
|---|---|---|---|---|
| **AUTHORIZED CONSUMPTION:** | ? | | 88,512.075 | acre-ft/yr |

## WATER LOSSES (Water Supplied - Authorized Consumption)

2,293.925 acre-ft/yr

### Apparent Losses

| | | | | | Pcnt: | Value: |
|---|---|---|---|---|---|---|
| Unauthorized consumption: | ? | | 227.015 | acre-ft/yr | 0.25% | |

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

| | | | | | | |
|---|---|---|---|---|---|---|
| Customer metering inaccuracies: | ? | 8 | 880.000 | acre-ft/yr | | 880.000 |
| Systematic data handling errors: | ? | 8 | 227.000 | acre-ft/yr | | |
| Apparent Losses: | ? | | 1,334.015 | | | |

Choose this option to enter a percentage of billed metered consumption. This is NOT a default value

### Real Losses (Current Annual Real Losses or CARL)

| | | | | |
|---|---|---|---|---|
| Real Losses = Water Losses - Apparent Losses: | ? | | 959.910 | acre-ft/yr |
| **WATER LOSSES:** | | | 2,293.925 | acre-ft/yr |

## NON-REVENUE WATER

| | | | | |
|---|---|---|---|---|
| **NON-REVENUE WATER:** | ? | | 4,604.000 | acre-ft/yr |

= Total Water Loss + Unbilled Metered + Unbilled Unmetered

## SYSTEM DATA

| | | | | | |
|---|---|---|---|---|---|
| Length of mains: | ? | 10 | 0.0 | miles | |
| Number of active AND inactive service connections: | ? | 10 | 0 | | |
| Connection density: | | | | conn./mile main | |
| Average length of customer service line: | ? | 10 | 0.0 | ft | (pipe length between curbstop and customer meter or property boundary) |
| Average operating pressure: | ? | 10 | 0.0 | psi | |

Note: Average pressure this low will not allow for calculation of UARL

## COST DATA

| | | | | |
|---|---|---|---|---|
| Total annual cost of operating water system: | ? | 8 | $50,251,335 | $/Year |
| Customer retail unit cost (applied to Apparent Losses): | ? | 9 | $1.60 | $/1000 gallons (US) |
| Variable production cost (applied to Real Losses): | ? | 9 | $90.00 | $/acre-ft |

## PERFORMANCE INDICATORS

### Financial Indicators

| | |
|---|---|
| Non-revenue water as percent by volume of Water Supplied: | 5.1% |
| Non-revenue water as percent by cost of operating system: | 2.0% |
| Annual cost of Apparent Losses: | $695,505 |
| Annual cost of Real Losses: | $86,392 |

### Operational Efficiency Indicators

| | | |
|---|---|---|
| Apparent Losses per service connection per day: | | gallons/connection/day |
| Real Losses per service connection per day*: | | gallons/connection/day |
| Real Losses per length of main per day*: | | gallons/mile/day |
| Real Losses per service connection per day per psi pressure: | | gallons/connection/day/psi |
| ? Unavoidable Annual Real Losses (UARL): | Not Valid | |

*** UARL cannot be calculated as either average pressure, number of connecions or length of mains is too small: SEE UARL DEFINITION ***

| | | |
|---|---|---|
| From Above, Real Losses = Current Annual Real Losses (CARL): | 959.91 | |
| ? Infrastructure Leakage Index (ILI) [CARL/UARL]: | | |

* only the most applicable of these two indicators will be calculated

### WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 81 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Unauthorized consumption
3: Water exported

For more information, click here to see the Grading Matrix worksheet

# AWWA WLCC Free Water Audit Software: Reporting Worksheet

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**Water Audit Report for:** Contra Costa Water District - Wholesale
**Reporting Year:** 2010 (7/2009 - 6/2010)

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

**All volumes to be entered as: ACRE-FEET PER YEAR**

## WATER SUPPLIED

<< Enter grading in column 'E'

| | | | | |
|---|---|---|---|---|
| Volume from own sources: | 7 | 99,979.000 | acre-ft/yr | |
| Master meter error adjustment (enter positive value): | 7 | 0.000 | under-registered | acre-ft/yr |
| Water imported: | 8 | 0.000 | acre-ft/yr | |
| Water exported: | 8 | 16,606.000 | acre-ft/yr | |
| **WATER SUPPLIED:** | | 83,373.000 | acre-ft/yr | |

## AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

| | | | | Pcnt: | Value: |
|---|---|---|---|---|---|
| Billed metered: | 9 | 77,605.000 | acre-ft/yr | | |
| Billed unmetered: | 10 | 258.000 | acre-ft/yr | | |
| Unbilled metered: | 9 | 841.000 | acre-ft/yr | | |
| Unbilled unmetered: | | 1,042.163 | acre-ft/yr | 1.25% | |

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

Use buttons to select percentage of water supplied **OR** value

| | | | |
|---|---|---|---|
| **AUTHORIZED CONSUMPTION:** | | 79,746.163 | acre-ft/yr |

## WATER LOSSES (Water Supplied - Authorized Consumption)

3,626.837 acre-ft/yr

### Apparent Losses

| | | | | Pcnt: | Value: |
|---|---|---|---|---|---|
| Unauthorized consumption: | | 208.433 | acre-ft/yr | 0.25% | |

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

| | | | | | |
|---|---|---|---|---|---|
| Customer metering inaccuracies: | 8 | 792.000 | acre-ft/yr | | 792.000 |
| Systematic data handling errors: | 8 | 208.000 | acre-ft/yr | | |
| Apparent Losses: | | 1,208.433 | | | |

Choose this option to enter a percentage of billed metered consumption. This is NOT a default value

### Real Losses (Current Annual Real Losses or CARL)

| | | | |
|---|---|---|---|
| Real Losses = Water Losses - Apparent Losses: | | 2,418.405 | acre-ft/yr |
| **WATER LOSSES:** | | 3,626.838 | acre-ft/yr |

## NON-REVENUE WATER

| | | | |
|---|---|---|---|
| **NON-REVENUE WATER:** | | 5,510.000 | acre-ft/yr |

= Total Water Loss + Unbilled Metered + Unbilled Unmetered

## SYSTEM DATA

| | | | | |
|---|---|---|---|---|
| Length of mains: | 10 | 0.0 | miles | |
| Number of active AND inactive service connections: | 10 | 0 | | |
| Connection density: | | | conn./mile main | |
| Average length of customer service line: | 10 | 0.0 | ft | (pipe length between curbstop and customer meter or property boundary) |
| Average operating pressure: | 10 | 0.0 | psi | |

Note: Average pressure this low will not allow for calculation of UARL

## COST DATA

| | | | | |
|---|---|---|---|---|
| Total annual cost of operating water system: | 8 | $50,251,335 | $/Year | |
| Customer retail unit cost (applied to Apparent Losses): | 9 | $1.60 | $/1000 gallons (US) | |
| Variable production cost (applied to Real Losses): | 9 | $90.00 | $/acre-ft | |

## PERFORMANCE INDICATORS

### Financial Indicators

| | |
|---|---|
| Non-revenue water as percent by volume of Water Supplied: | 6.6% |
| Non-revenue water as percent by cost of operating system: | 2.0% |
| Annual cost of Apparent Losses: | $630,031 |
| Annual cost of Real Losses: | $217,656 |

### Operational Efficiency Indicators

| | | |
|---|---|---|
| Apparent Losses per service connection per day: | | gallons/connection/day |
| Real Losses per service connection per day*: | | gallons/connection/day |
| Real Losses per length of main per day*: | | gallons/mile/day |
| Real Losses per service connection per day per psi pressure: | | gallons/connection/day/psi |
| Unavoidable Annual Real Losses (UARL): | Not Valid | |

*** UARL cannot be calculated as either average pressure, number of connecions or length of mains is too small: SEE UARL DEFINITION ***

| | | |
|---|---|---|
| From Above, Real Losses = Current Annual Real Losses (CARL): | 2,418.41 | |
| Infrastructure Leakage Index (ILI) [CARL/UARL]: | | |

* only the most applicable of these two indicators will be calculated

## WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 81 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

## PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Unauthorized consumption
3: Water exported

For more information, click here to see the Grading Matrix worksheet

# BMP 1.4 Conservation Rates- FY09: Contra Costa Water District Retail Service Area

| **Retail Raw Water Sales** | | | | | | Total |
|---|---|---|---|---|---|---|
| | Quantity Charge | Energy Surcharge | Total Volumetric Revenue | Total Fixed Charges | Total Charges | Volumic % |
| | FY09 | FY09 | FY09 | FY09 | FY09 | FY09 |
| Inudstrial | $ 15,885,828 | $ - | $ 15,885,828 | $ - | $ 15,885,828 | 100% |
| Landscape | $ 660,137 | $ - | $ 660,137 | $ 132,780 | $ 792,917 | 83% |
| Temporary and Other Service | $ 15,080 | $ - | $ 15,080 | $ 74,449 | $ 89,529 | 17% |
| Sub-Total Untreated Water | $ 16,561,045 | $ - | $ 16,561,045 | $ 207,229 | $ 16,768,275 | 99% |
| Percent of Total Charges | 98.8% | 0.0% | 99% | 1.2% | | |

| **Retail Treated Water Sales** | | | | | | Total |
|---|---|---|---|---|---|---|
| | Quantity Charge | Energy Surcharge | Total Volumetric Revenue | Total Fixed Charges | Total Charges | Volumic % |
| | FY09 | FY09 | FY09 | FY09 | FY09 | FY09 |
| SF Residential | $ 21,636,357 | $ 1,509,811 | $ 23,146,168 | $ 11,124,178 | $ 34,270,345 | 68% |
| MF Residential | $ 6,271,414 | $ 261,409 | $ 6,532,822 | $ 2,884,664 | $ 9,417,486 | 69% |
| Res Irrigation | $ 1,695,028 | $ 111,008 | $ 1,806,035 | $ 495,740 | $ 2,301,775 | 78% |
| Commercial | $ 4,216,949 | $ 169,849 | $ 4,386,798 | $ 1,890,925 | $ 6,277,723 | 70% |
| Commercial Irrigation | $ 1,670,322 | $ 93,131 | $ 1,763,453 | $ 324,683 | $ 2,088,136 | 84% |
| Industrial | $ 103,346 | $ 8,995 | $ 112,341 | $ 19,006 | $ 131,347 | 86% |
| Public Auth | $ 1,076,709 | $ 56,149 | $ 1,132,858 | $ 463,426 | $ 1,596,284 | 71% |
| Public Auth Irrigation | $ 821,563 | $ 69,425 | $ 890,988 | $ 332,722 | $ 1,223,710 | 73% |
| Temp Svc | $ 70,389 | $ 15,489 | $ 85,878 | $ 198,693 | $ 284,572 | 30% |
| temp | | | $ - | | $ - | |
| Sub Total treated | $ 37,562,076 | $ 2,295,265 | $ 39,857,341 | $ 17,734,038 | $ 57,591,379 | 69% |
| | | | $ 1 | | | |
| Dedicated Irrigation | $ 4,186,912 | $ 273,564 | $ 4,460,476 | $ 1,153,146 | $ 5,613,621 | 79% |

| **Total Retail Water Sales** | | | | | | Total |
|---|---|---|---|---|---|---|
| | Quantity | Energy Surcharge | **Total Volumetric Revenue** | **Fixed Charges** | Total Charges | Volumic % |
| | FY09 | FY09 | **FY09** | **FY09** | FY09 | FY09 |
| Total Retail | $ 54,123,122 | $ 2,295,265 | **$ 56,418,387** | **$ 17,941,267** | $ 74,359,654 | 76% |
| Percent of Total | | | **76%** | **24.1%** | 100.0% | |

# BMP 1.4 Conservation Rates- FY10: Contra Costa Water District Retail Service Area

| **Retail Raw Water Sales** | | | | | | Total |
|---|---|---|---|---|---|---|
| | Quantity Charge | Energy Surcharge | Total Volumetric Revenue | Total Fixed Charges | Total Charges | Volumic % |
| | FY10 | FY10 | FY10 | FY10 | FY10 | FY10 |
| Inudstrial | $ 14,703,749 | $ - | $ 14,703,749 | $ - | $ 14,703,749 | 100% |
| Landscape | $ 468,489 | $ - | $ 468,489 | $ 124,225 | $ 592,714 | 79% |
| Temporary and Other Service | $ 16,057 | $ - | $ 16,057 | $ 77,958 | $ 94,015 | 17% |
| Sub-Total Untreated Water | $ 15,188,295 | $ - | $ 15,188,295 | $ 202,183 | $ 15,390,478 | 99% |
| Percent of Total Charges | 98.7% | 0.0% | 99% | 1.3% | | |

| **Retail Treated Water Sales** | | | | | | Total |
|---|---|---|---|---|---|---|
| | Quantity Charge | Energy Surcharge | Total Volumetric Revenue | Total Fixed Charges | Total Charges | Volumic % |
| | FY10 | FY10 | FY10 | FY10 | FY10 | FY10 |
| SF Residential | $ 18,857,009 | $ 1,233,778 | $ 20,090,787 | $ 11,261,433 | $ 31,352,220 | 64% |
| MF Residential | $ 6,026,260 | $ 237,719 | $ 6,263,979 | $ 2,899,209 | $ 9,163,188 | 68% |
| Res Irrigation | $ 1,189,189 | $ 74,780 | $ 1,263,969 | $ 485,715 | $ 1,749,684 | 72% |
| Commercial | $ 3,932,749 | $ 149,752 | $ 4,082,500 | $ 1,932,460 | $ 6,014,960 | 68% |
| Commercial Irrigation | $ 1,145,064 | $ 74,076 | $ 1,219,140 | $ 325,697 | $ 1,544,837 | 79% |
| Industrial | $ 98,853 | $ 8,333 | $ 107,187 | $ 17,395 | $ 124,582 | 86% |
| Public Auth | $ 1,002,104 | $ 49,807 | $ 1,051,911 | $ 486,891 | $ 1,538,802 | 68% |
| Public Auth Irrigation | $ 494,556 | $ 34,977 | $ 529,532 | $ 325,213 | $ 854,745 | 62% |
| Temp Svc | $ 22,104 | $ 4,634 | $ 26,738 | $ 105,031 | $ 131,769 | 20% |
| temp | | | $ - | | $ - | |
| Sub Total treated | $ 32,767,888 | $ 1,867,855 | $ 34,635,743 | $ 17,839,044 | $ 52,474,787 | 66% |
| | | | $ 1 | | | |
| Dedicated Irrigation | $ 2,828,809 | $ 183,832 | $ 3,012,641 | $ 1,136,625 | $ 4,149,266 | 73% |

| **Total Retail Water Sales** | | | | | | Total |
|---|---|---|---|---|---|---|
| | Quantity | Energy Surcharge | **Total Volumetric Revenue** | **Fixed Charges** | Total Charges | Volumic % |
| | FY10 | FY10 | FY10 | FY10 | FY10 | FY10 |
| Total Retail | $ 47,956,183 | $ 1,867,855 | **$ 49,824,038** | **$ 18,041,227** | $ 67,865,265 | 73% |
| Percent of Total | | | **73%** | **26.6%** | 100.0% | |

# BMP Coverage Report
# 10-Years of Program ending FY08

## Contra Costa Water District
## Retail
## Wholesale

# BMP Coverage Report
# 10-Years of Program ending FY08

# Contra Costa Water District- Retail

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

Reporting Unit:
**Contra Costa WD - Retail**

Reporting Period:
**07-08**

## 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

| | |
|---|---|
| Contra Costa WD - Retail to Implement Targeting/Marketing Program by: | 1999 |

| | Single-Family | Multi-Family |
|---|---|---|
| Year Contra Costa WD - Retail Reported Implementing Targeting/Marketing Program: | 2000 | 2000 |
| Contra Costa WD - Retail Met Targeting/Marketing Coverage Requirement: | YES | YES |

## Test for Condition 2

| | | | Single-Family | Multi-Family |
|---|---|---|---|---|
| Survey Program to Start by: | 1998 | Residential Survey Offers (%) | 39.77% | 40.90% |
| Reporting Period: | 07-08 | Survey Offers ≥ 20% | YES | YES |

## Test for Condition 3

| | Completed Residential Surveys | |
|---|---|---|
| | Single Family | Multi-Family |
| Total Completed Surveys 1999 - 2008: | 5,780 | 11,955 |
| Past Credit for Surveys Completed Prior to 1999 (Implementation of Reporting Database): | 2,572 | 10,084 |
| Total + Credit | 8,352 | 22,039 |
| Residential Accounts in Base Year | 50,286 | 29,339 |
| Contra Costa WD - Retail Survey Coverage as % of Base Year Residential Accounts | 16.61% | 75.12% |

| | | |
|---|---|---|
| Coverage Requirement by Year 10 of Implementation per Exhibit 1 | 13.50% | 13.50% |
| Contra Costa WD - Retail on Schedule to Meet 10-Year Coverage Requirement | YES | YES |

**BMP 1 COVERAGE STATUS SUMMARY:**
**Water supplier has met the coverage requirements for this BMP.**

# BMP 02 Coverage: Residential Plumbing Retrofit

Reporting Unit: **Contra Costa WD - Retail**

Reporting Period: **07-08**

**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 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

| | | Single-Family | | Multi-Family | |
|---|---|---|---|---|---|
| Report Year | Report Period | Reported Saturation | Saturation ≥ 75%? | Reported Saturation | Saturation ≥ 75%? |
| 1999 | 99-00 | | NO | | NO |
| 2000 | 99-00 | | NO | | NO |
| 2001 | 01-02 | 63.00% | NO | 63.00% | NO |
| 2002 | 01-02 | 67.00% | NO | 67.00% | NO |
| 2003 | 03-04 | 70.00% | NO | 70.00% | NO |
| 2004 | 03-04 | 70.00% | NO | 70.00% | NO |
| 2005 | 05-06 | 71.00% | NO | 71.00% | NO |
| 2006 | 05-06 | 80.00% | YES | 73.00% | NO |
| 2007 | 07-08 | 80.00% | YES | 80.00% | YES |
| 2008 | 07-08 | 80.00% | YES | 80.00% | YES |

## Test for Condition 2

| Report Year | Report Period | Contra Costa WD - Retail 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 |
| 2005 | 05-06 | NO |
| 2006 | 05-06 | NO |
| 2007 | 07-08 | NO |
| 2008 | 07-08 | NO |

## Test for Condition 3

Reporting Period: 07-08

| 1992 SF Accounts | Num. Showerheads Distributed to SF Accounts | Single-Family Coverage Ratio | SF Coverage Ratio > 10% |
|---|---|---|---|
| 48,565 | 433 | 0.9% | NO |
| 1992 MF Accounts | Num. Showerheads Distributed to MF Accounts | Multi-Family Coverage Ratio | MF Coverage Ratio > 10% |
| 29,057 | 420 | 1.4% | NO |

**BMP 2 COVERAGE STATUS SUMMARY:**
**Water supplier has met the coverage requirements for this BMP.**

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

Reporting Unit:
**Contra Costa WD - Retail**

Reporting Period:
**07-08**

## 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 | 90.3% | No | NO |
| 2000 | 99-00 | YES | 90.0% | Yes | NO |
| 2001 | 01-02 | YES | 90.5% | No | NO |
| 2002 | 01-02 | YES | 91.3% | No | NO |
| 2003 | 03-04 | YES | 90.9% | No | NO |
| 2004 | 03-04 | YES | 91.4% | No | NO |
| 2005 | 05-06 | YES | 93.0% | No | NO |
| 2006 | 05-06 | YES | 90.3% | No | NO |
| 2007 | 07-08 | YES | 90.3% | No | NO |
| 2008 | 07-08 | YES | 91.5% | No | NO |

**BMP 3 COVERAGE STATUS SUMMARY:**
**Water supplier has met the coverage requirements for this BMP.**

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

| Reporting Unit: | Reporting Period: |
|---|---|
| **Contra Costa WD - Retail** | **07-08** |

## MOU Exhibit 1 Coverage Requirement

| | |
|---|---|
| No exemption request filed | |
| Agency indicated "at least as effective as" implementation during report period? | No |

For agencies signing the MOU prior to December 31, 1997:
100% of existing unmetered accounts to be metered and billed by volume of use by July 1, 2009.

For agencies signing the MOU after December 31, 1997:
- 100% of existing unmetered accounts to be metered and billed by volume of use by July 1, 2012 **OR** within six years of signing the MOU (whichever date is later).
- All retrofits must be completed no later than one year prior to the requirements of state law (January 1, 2025).

### Test for Compliance

| | |
|---|---|
| Total Meter Retrofits Reported through 2008 | 28 |
| No. of Unmetered Accounts in Base Year | 0 |
| Meter Retrofit Coverage as % of Base Year Unmetered Accounts | 0.0% |
| Coverage Requirement by Year 10 of Implementation per Exhibit 1 | 90.0% |
| RU on Schedule to meet 10 Year Coverage Requirement | YES |

**BMP 4 COVERAGE STATUS SUMMARY:**
**Water supplier has met the coverage requirements for this BMP.**

# BMP 05 Coverage: Large Landscape Conservation Programs and Incentives

Reporting Unit:
**Contra Costa WD - Retail**

Reporting Period:
**07-08**

## 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 | | 1,178 | | | NA |
| 2000 | 99-00 | 1 | 1,193 | | | NA |
| 2001 | 01-02 | 2 | 1,194 | 400 | 33.5% | NA |
| 2002 | 01-02 | 3 | 1,219 | 544 | 44.6% | NA |
| 2003 | 03-04 | 4 | 1,239 | 544 | 43.9% | No |
| 2004 | 03-04 | 5 | 1,282 | 626 | 48.8% | No |
| 2005 | 05-06 | 6 | 1,292 | 626 | 48.5% | No |
| 2006 | 05-06 | 7 | 1,297 | 659 | 50.8% | No |
| 2007 | 07-08 | 8 | 1,305 | 850 | 65.1% | No |
| 2008 | 07-08 | 9 | 1,323 | 1,200 | 90.7% | Yes |

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

| | |
|---|---|
| Select Reporting Period: | 07-08 |
| Large Landscape Survey Offers as % of Mixed Use Meter CII Accounts | 20.8% |
| Survey Offers Equal or Exceed 20% Coverage Requirement | YES |

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

| | |
|---|---|
| Total Completed Landscape Surveys Reported through 07-08 | 895 |
| Credit for Surveys Completed Prior to Implementation of Reporting Database | 530 |
| Total + Credit | 1,425 |
| CII Accounts in Base Year | 1,208 |

| | |
|---|---|
| RU Survey Coverage as a % of Base Year CII Accounts | 118.0% |
| Coverage Requirement by Year of Implementation per Exhibit 1 | 11.5% |
| RU on Schedule to Meet 10 Year Coverage Requirement | YES |

**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 | | NO | |
| 2000 | 99-00 | 1 | NO | |
| 2001 | 01-02 | 2 | NO | |
| 2002 | 01-02 | 3 | NO | |
| 2003 | 03-04 | 4 | NO | |
| 2004 | 03-04 | 5 | NO | |
| 2005 | 05-06 | 6 | NO | |
| 2006 | 05-06 | 7 | NO | |
| 2007 | 07-08 | 8 | NO | |
| 2008 | 07-08 | 9 | 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 | | 2,905 | |
| 2000 | 99-00 | 2 | 2,905 | |
| 2001 | 01-02 | 3 | 2,905 | |
| 2002 | 01-02 | 4 | | |
| 2003 | 03-04 | 5 | | |
| 2004 | 03-04 | 6 | | |
| 2005 | 05-06 | 7 | 1,208 | |
| 2006 | 05-06 | 8 | 1,208 | |
| 2007 | 07-08 | 9 | 1,208 | |
| 2008 | 07-08 | 10 | 1,208 | |

**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 | | YES | | |
| 2000 | 99-00 | 1 | YES | | |
| 2001 | 01-02 | 2 | YES | | |
| 2002 | 01-02 | 3 | YES | | |
| 2003 | 03-04 | 4 | YES | | |
| 2004 | 03-04 | 5 | YES | | |
| 2005 | 05-06 | 6 | YES | | |
| 2006 | 05-06 | 7 | YES | | |
| 2007 | 07-08 | 8 | YES | | |
| 2008 | 07-08 | 9 | YES | | |
| | | | Total Amt. | | Total Amt. |

| Report Year | Report Period | No. of Grants | Grants | No. of rebates | Rebates |
|---|---|---|---|---|---|
| 1999 | 99-00 | | | 13 | 10,233 |
| 2000 | 99-00 | | | 14 | 10,573 |
| 2001 | 01-02 | | | 5 | 5,165 |
| 2002 | 01-02 | | | 8 | 5,524 |
| 2003 | 03-04 | | | 5 | 5,355 |
| 2004 | 03-04 | | | 15 | 6,572 |
| 2005 | 05-06 | | | 8 | 8,967 |
| 2006 | 05-06 | | | 20 | 29,354 |
| 2007 | 07-08 | | | 20 | 21,261 |
| 2008 | 07-08 | | | 30 | 30,510 |

**BMP 5 COVERAGE STATUS SUMMARY:**
**Water supplier has met the coverage requirements for this BMP.**

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

Reporting Unit:
**Contra Costa WD - Retail**

Reporting Period:
**07-08**

## 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 two conditions to comply with BMP 6.

Condition 1: Offer a cost-effective financial incentive to customers for the purchase of high-efficiency washers with water factors of 9.5 or less.

Condition 2: Meet Coverage Goal (CG=Total Dwelling Units x 0.0768) by July 1, 2008. Agencies signing the MOU after July 1, 2003, shall have a prorated Coverage Goal, based on implementation period of less than 4.0 years.

### Test for Condition 1

| | |
|---|---|
| Agency offers rebates for residential high-efficiency washers with water factors of 9.5 or less: | YES |

### Test for Condition 2

| | |
|---|---|
| Coverage Goal: | 6,364 |
| Total Coverage Points Awarded (incl. past credit): | 16,831 |
| % of Coverage Goal: | 264.46% |

**BMP 6 COVERAGE STATUS SUMMARY:**
**Water supplier has met the coverage requirements for this BMP.**

# BMP 07 Coverage: Public Information Programs

Reporting Unit: **Contra Costa WD - Retail**

Reporting Period: **07-08**

## 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 | 1 | YES |
| 2000 | 99-00 | 2 | YES |
| 2001 | 01-02 | 3 | YES |
| 2002 | 01-02 | 4 | YES |
| 2003 | 03-04 | 5 | YES |
| 2004 | 03-04 | 6 | YES |
| 2005 | 05-06 | 7 | YES |
| 2006 | 05-06 | 8 | YES |
| 2007 | 07-08 | 9 | YES |
| 2008 | 07-08 | 10 | YES |

**BMP 7 COVERAGE STATUS SUMMARY:**
**Water supplier has met the coverage requirements for this BMP.**

# BMP 08 Coverage: School Education Programs

Reporting Unit: **Contra Costa WD - Retail**

Reporting Period: **07-08**

## 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

| Year | Report Period | BMP 8 Implementation Year | RU Has School Education Program? |
|---|---|---|---|
| 1999 | 99-00 | 1 | YES |
| 2000 | 99-00 | 2 | YES |
| 2001 | 01-02 | 3 | YES |
| 2002 | 01-02 | 4 | YES |
| 2003 | 03-04 | 5 | YES |
| 2004 | 03-04 | 6 | YES |
| 2005 | 05-06 | 7 | YES |
| 2006 | 05-06 | 8 | YES |
| 2007 | 07-08 | 9 | YES |
| 2008 | 07-08 | 10 | YES |

**BMP 8 COVERAGE STATUS SUMMARY:**

**Water supplier has met the coverage requirements for this BMP.**

# BMP 09 Coverage: Conservation Programs for CII Accounts

Reporting Unit:
**Contra Costa WD - Retail**

Reporting Period:
**07-08**

## 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 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

| | |
|---|---|
| Ranked Commercial Use | YES |
| Ranked Industrial Use | YES |
| Ranked Institutional Use | YES |

### Test for Condition 2a

| | Commercial | Industrial | Institutional |
|---|---|---|---|
| Total Completed Surveys Reported through 2008 | 798 | 1 | 65 |
| Credit for Surveys Completed Prior to Implementation of Reporting Databases | 489 | | 29 |
| Total + Credit | 1,287 | 1 | 94 |
| CII Accounts in Base Year | 2,656 | 6 | 216 |
| RU Survey Coverage as % of Base Year CII Accounts | 48.5% | 16.7% | 43.5% |
| Coverage Requirement by Year 9 of Implementation per Exhibit 1 | 7.7% | 7.7% | 7.7% |
| RU on Schedule to Meet 10 Year Coverage Requirement | YES | YES | YES |

### Test for Condition 2b

| Year | Performance Target Savings (AF/yr) | Performance Target Savings Coverage | Performance Target Savings Coverage Requirement | Coverage Requirement Met |
|---|---|---|---|---|
| 1999 | | | 0.5% | NO |
| 2000 | | | 1.0% | NO |
| 2001 | | | 1.7% | NO |
| 2002 | | | 2.4% | NO |
| 2003 | | | 3.3% | NO |

| | | | | |
|---|---|---|---|---|
| 2004 | | | 4.2% | NO |
| 2005 | 18 | 0.3% | 5.3% | NO |
| 2006 | 39 | 0.6% | 6.4% | NO |
| 2007 | 46 | 0.8% | 7.7% | NO |
| 2008 | 53 | 0.9% | 9.0% | NO |

**Test for Condition 2c**

| | |
|---|---|
| Total BMP 9 Surveys + Credit | 1,382 |
| BMP 9 Survey Coverage | 48.0% |
| BMP 9 Performance Target Coverage | 0.9% |
| BMP 9 Survey + Performance Target Coverage | 48.9% |
| Combined Coverage Equals or Exceeds Coverage Requirement? | YES |

**BMP 9 COVERAGE STATUS SUMMARY:**
**Water supplier has met the coverage requirements for this BMP.**

# BMP 11 Coverage: Conservation Pricing

Reporting Unit: **Contra Costa WD - Retail**

Reporting Period: **07-08**

## MOU Exhibit 1 Coverage Requirement

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

Per June 13, 2007 revision, an agency must meet one condition to comply with BMP 11.

Condition 1: Agency shall maintain rate structure consistent with BMP 11's definition of conservation pricing. If agency provides retail sewer service, agency shall maintain rate structure for sewer service consistent with definition of conservation pricing for sewer service in Part II, Section in A.

Water Service
- Agencies signing the MOU prior to June 13, 2007, implementation shall commence no later than July 1, 2007.
- Agencies signing the MOU after June 13, 2007, implementation shall commence no later than July 1 of the year following the year the Agency signed the MOU.

Sewer Service
- Agencies signing the MOU prior to December 31, 1997, implementation shall commence no later than July 1, 2008.
- Agencies signing the MOU or becoming subject to the MOU after December 31, 1997, implementation shall commence no later than July 1 of the first year following the year the agency signed or became subject to the MOU.

### Test for Condition 1

| | |
|---|---|
| Agency is Fully Metered | YES |
| Agency Employed Conserving WATER Rate Structure | YES |
| Agency Provides Sewer Service | NO |
| Agency Employed Conserving SEWER Rate Structure | YES |

**BMP 11 WATER COVERAGE STATUS SUMMARY:**
**Water supplier has met the coverage requirements for this BMP.**

**BMP 11 SEWER COVERAGE STATUS SUMMARY:**
**Agency does not provide sewer service**

# BMP 12 Coverage: Conservation Coordinator

Reporting Unit: **Contra Costa WD - Retail**

Reporting Period: **07-08**

## 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 | 8 |
| 2000 | 99-00 | YES | 8 |
| 2001 | 01-02 | YES | 11 |
| 2002 | 01-02 | YES | 11 |
| 2003 | 03-04 | YES | 11 |
| 2004 | 03-04 | YES | 11 |
| 2005 | 05-06 | YES | 11 |
| 2006 | 05-06 | YES | 11 |
| 2007 | 07-08 | YES | 5 |
| 2008 | 07-08 | YES | 5 |

**BMP 12 COVERAGE STATUS SUMMARY:**

**Water supplier has met the coverage requirements for this BMP.**

# BMP 13 Coverage: Water Waste Prohibition

Reporting Unit: **Contra Costa WD - Retail**

Reporting Period: **07-08**

## 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 | NO | NO |
| 2000 | YES | NO | YES | NO | YES | NO | NO |
| 2001 | YES | NO | YES | NO | YES | NO | NO |
| 2002 | YES | NO | YES | NO | YES | NO | NO |
| 2003 | YES | YES | YES | YES | YES | YES | YES |
| 2004 | YES | YES | YES | YES | YES | YES | YES |
| 2005 | YES | YES | YES | YES | YES | NO | YES |
| 2006 | YES | YES | YES | YES | YES | NO | YES |
| 2007 | YES | YES | YES | YES | YES | NO | YES |
| 2008 | YES | YES | YES | YES | YES | NO | YES |

**BMP 13 COVERAGE STATUS SUMMARY:**

**Water supplier has met the coverage requirements for this BMP.**

# BMP 14 Coverage: Residential ULFT Replacement Programs

Reporting Unit: **Contra Costa WD - Retail**

## 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 met the coverage requirements for this BMP. as of 2009**

| Coverage Year | BMP 14 Data Submitted | Exemption Filed | ALAEA Selected | ROR Ordinance in Effect | Exhibit 6 Coverage Req'mt (AF) | Program Water Savings* (AF) |
|---|---|---|---|---|---|---|
| 1999 | YES | NO | NO | NO | 100.41 | 1159.12 |
| 2000 | YES | NO | NO | NO | 289.37 | 1639.83 |
| 2001 | YES | NO | NO | NO | 556.14 | 2192.65 |
| 2002 | YES | NO | NO | NO | 890.98 | 2765.51 |
| 2003 | YES | NO | NO | NO | 1285.08 | 3352.50 |
| 2004 | YES | NO | NO | NO | 1730.47 | 3958.15 |
| 2005 | YES | NO | NO | NO | 2219.95 | 4584.90 |
| 2006 | YES | NO | NO | NO | 2747.02 | 5255.37 |
| 2007 | YES | NO | NO | NO | 3305.81 | 5949.50 |
| 2008 | YES | NO | NO | NO | 3891.04 | 6688.66 |

*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 met the coverage requirements for this BMP.**

# BMP 14 Coverage: Residential ULFT Replacement Programs

Reporting Unit: **Contra Costa WD - Retail**

## BMP 14 Coverage Calculation Detail: Retrofit on Resale (ROR) Ordinance Water Savings

| | Single Family | Multi-Family |
|---|---|---|
| **1992 Housing Stock** | | |
| **Average rate of natural replacement (% of remaining stock)** | .04 | .04 |

| | | |
|---|---|---|
| **Average rate of housing demolition (% of remining stock)** | .005 | .005 |
| **Estimated Housing Units with 3.5+ gpf Toilets in 1997** | 39639.84 | 23716.97 |
| **Average resale rate** | .021 | .053 |
| **Average persons per unit** | 2.9 | 2.3 |
| **Average toilets per unit** | 2.2 | 1.2 |
| **Average savings per home (gpd; from Exhibit 6)** | 44.8 | 45 |

## Single Family Housing Units

| Coverage Year | Unretrofitted Houses | Houses Sold | Houses Unsold | Sold and Retrofitted | Sold and Already Retrofitted | Unsold and Retrofitted | Gross ROR Savings (AFY) | Nat'l Replacement Only Savings (AFY) | Net ROR Savings (AFY) |
|---|---|---|---|---|---|---|---|---|---|
| 1999 | 37267.03 | 828.27 | 38613.37 | 828.27 | | 1544.53 | 566.87 | 526.98 | 39.90 |
| 2000 | 35036.26 | 824.13 | 38420.30 | 778.69 | 45.44 | 1452.08 | 678.80 | 602.99 | 75.82 |
| 2001 | 32939.01 | 820.01 | 38228.20 | 732.08 | 87.93 | 1365.16 | 784.03 | 675.97 | 108.06 |
| 2002 | 30967.31 | 815.91 | 38037.06 | 688.26 | 127.65 | 1283.44 | 882.96 | 746.05 | 136.91 |
| 2003 | 29113.63 | 811.83 | 37846.87 | 647.06 | 164.77 | 1206.62 | 975.97 | 813.34 | 162.63 |
| 2004 | 27370.91 | 807.77 | 37657.64 | 608.33 | 199.44 | 1134.39 | 1063.41 | 877.95 | 185.46 |
| 2005 | 25732.51 | 803.73 | 37469.35 | 571.92 | 231.82 | 1066.49 | 1145.62 | 939.99 | 205.63 |
| 2006 | 24192.19 | 799.72 | 37282.00 | 537.68 | 262.04 | 1002.65 | 1222.90 | 999.56 | 223.34 |
| 2007 | 22744.06 | 795.72 | 37095.59 | 505.50 | 290.22 | 942.63 | 1295.56 | 1056.76 | 238.80 |
| 2008 | 21382.62 | 791.74 | 36910.12 | 475.24 | 316.50 | 886.20 | 1363.87 | 1111.68 | 252.19 |

## Multi Family Housing Units

| Coverage Year | Unretrofitted Houses | Houses Sold | Houses Unsold | Sold and Retrofitted | Sold and Already Retrofitted | Unsold and Retrofitted | Gross ROR Savings (AFY) | Nat'l Replacement Only Savings (AFY) | Net ROR Savings (AFY) |
|---|---|---|---|---|---|---|---|---|---|
| 1999 | 21572.35 | 1250.71 | 22347.67 | 1250.71 | | 893.91 | 377.22 | 316.70 | 60.51 |
| 2000 | 19621.66 | 1244.46 | 22235.94 | 1137.62 | 106.84 | 813.07 | 475.53 | 362.38 | 113.15 |
| 2001 | 17847.36 | 1238.24 | 22124.76 | 1034.75 | 203.49 | 739.55 | 564.95 | 406.25 | 158.71 |
| 2002 | 16233.50 | 1232.05 | 22014.13 | 941.18 | 290.87 | 672.68 | 646.29 | 448.36 | 197.93 |
| 2003 | 14765.58 | 1225.89 | 21904.06 | 856.07 | 369.81 | 611.85 | 720.27 | 488.80 | 231.47 |
| 2004 | 13430.39 | 1219.76 | 21794.54 | 778.66 | 441.10 | 556.52 | 787.56 | 527.63 | 259.93 |
| 2005 | 12215.94 | 1213.66 | 21685.57 | 708.25 | 505.41 | 506.20 | 848.77 | 564.92 | 283.85 |
| 2006 | 11111.31 | 1207.59 | 21577.14 | 644.21 | 563.38 | 460.43 | 904.44 | 600.72 | 303.72 |
| 2007 | 10106.56 | 1201.55 | 21469.26 | 585.95 | 615.60 | 418.79 | 955.08 | 635.09 | 319.99 |
| 2008 | 9192.67 | 1195.55 | 21361.91 | 532.97 | 662.58 | 380.92 | 1001.14 | 668.10 | 333.04 |

# BMP Coverage Report
# 10-Years of Program ending FY08

# Contra Costa Water District- Wholesale

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

Reporting Unit:
**Contra Costa WD - Wholesale**

Reporting Period:
**07-08**

## 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 | 95.7% | No | NO |
| 2000 | 99-00 | YES | 96.9% | No | NO |
| 2001 | 01-02 | YES | 96.3% | No | NO |
| 2002 | 01-02 | YES | 95.9% | No | NO |
| 2003 | 03-04 | YES | 96.3% | No | NO |
| 2004 | 03-04 | YES | 99.5% | No | NO |
| 2005 | 05-06 | YES | 98.7% | No | NO |
| 2006 | 05-06 | YES | 95.1% | No | NO |
| 2007 | 07-08 | YES | 98.4% | No | NO |
| 2008 | 07-08 | YES | 95.9% | No | NO |

**BMP 3 COVERAGE STATUS SUMMARY:**
**Water supplier has met the coverage requirements for this BMP.**

# BMP 07 Coverage: Public Information Programs

Reporting Unit: **Contra Costa WD - Wholesale**

Reporting Period: **07-08**

## 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 | 1 | YES |
| 2000 | 99-00 | 2 | YES |
| 2001 | 01-02 | 3 | YES |
| 2002 | 01-02 | 4 | YES |
| 2003 | 03-04 | 5 | YES |
| 2004 | 03-04 | 6 | YES |
| 2005 | 05-06 | 7 | YES |
| 2006 | 05-06 | 8 | YES |
| 2007 | 07-08 | 9 | YES |
| 2008 | 07-08 | 10 | YES |

**BMP 7 COVERAGE STATUS SUMMARY:**
**Water supplier has met the coverage requirements for this BMP.**

# BMP 08 Coverage: School Education Programs

Reporting Unit: **Contra Costa WD - Wholesale**

Reporting Period: **07-08**

## 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

| Year | Report Period | BMP 8 Implementation Year | RU Has School Education Program? |
|---|---|---|---|
| 1999 | 99-00 | 1 | YES |
| 2000 | 99-00 | 2 | YES |
| 2001 | 01-02 | 3 | YES |
| 2002 | 01-02 | 4 | YES |
| 2003 | 03-04 | 5 | YES |
| 2004 | 03-04 | 6 | YES |
| 2005 | 05-06 | 7 | YES |
| 2006 | 05-06 | 8 | YES |
| 2007 | 07-08 | 9 | YES |
| 2008 | 07-08 | 10 | YES |

**BMP 8 COVERAGE STATUS SUMMARY:**

**Water supplier has met the coverage requirements for this BMP.**

# BMP 12 Coverage: Conservation Coordinator

Reporting Unit: **Contra Costa WD - Wholesale**

Reporting Period: **07-08**

## 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 | 8 |
| 2000 | 99-00 | YES | 8 |
| 2001 | 01-02 | YES | 11 |
| 2002 | 01-02 | YES | 11 |
| 2003 | 03-04 | YES | 11 |
| 2004 | 03-04 | YES | 11 |
| 2005 | 05-06 | YES | 11 |
| 2006 | 05-06 | YES | 8 |
| 2007 | 07-08 | YES | 4 |
| 2008 | 07-08 | YES | 4 |

**BMP 12 COVERAGE STATUS SUMMARY:**

**Water supplier has met the coverage requirements for this BMP.**

# APPENDIX I

## Examples of Public Information and School Education Programs

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# On Tap

Spring 2011

CONTRA COSTA WATER DISTRICT

## Complex System Delivers Water to Home and Businesses

Most people put little thought into how their tap water arrives at their homes. Often, they don't realize that it takes millions of dollars worth of equipment, pipelines, energy and labor to pump water from a source, store and protect it, treat it so that it's safe to drink, and deliver it to homes and businesses every day.

The Contra Costa Water District provides a constant, reliable stream of clean tap water to 500,000 people in central and eastern Contra Costa County. The District starts with water drawn from the Sacramento-San Joaquin Delta at four intakes, each equipped with a state-of-the-art fish screen to protect Delta fisheries.

Once water is drawn from the Delta, it is conveyed by the 20-mile Los Vaqueros Pipeline and the 48-mile Contra Costa Canal to various destinations. For example, it can be stored in reservoirs for future treatment and use, immediately treated by the District and delivered to treated-water customers in central Contra Costa County, or sent to eastern Contra Costa County treatment plants for eventual distribution to the residents served by those plants.

Here are a few interesting facts about the District's complex and sophisticated water-treatment, storage and distribution system:

- Water in the Contra Costa Canal is lifted 124 feet above sea level by four pumping plants and conveyed over the Willow Pass and into Central County.
- The District has four untreated-water reservoirs capable of storing nearly 106,000 acre-feet of water. This includes the Los Vaqueros Reservoir near Brentwood, which is now being enlarged by 60 percent to hold 160,000 acre-feet of water. (One acre-foot of water is enough to serve a family of four for a year.)
- In Central County, the District provides treated tap water to nearly 61,000 homes and businesses in Clayton, Clyde, Concord, Pacheco, Port Costa and parts of Martinez, Pleasant Hill and Walnut Creek.
- The District also provides untreated water to municipalities and water districts that treat and deliver water to homes and businesses in Martinez, Bay Point, Pittsburg, Antioch and Oakley.
- The District operates three treatment plants—one in Central County and two in East County—with the capacity to treat a total of 142 million gallons a day.
- Treated water deliveries can be made between treatment plants in East County and Central County by a 42-inch diameter, 21-mile-long pipeline called the Multi-Purpose Pipeline. This allows CCWD to optimize facility use and provide back-up in an emergency.
- In Central County, the District relies on 868 miles of pipeline and 31 pump stations for water distribution.
- Treated water is stored in 40 mostly underground tank-style reservoirs located throughout Central County. These reservoirs usually hold more than one million gallons of water each.
- The District employs more than 300 dedicated and well-trained professionals to maintain facilities, operate equipment and administer District programs.

To learn more, sign up for one of the free Facility Bus Tours the District offers its customers in the fall. For more information, visit **www.ccwater.com** or call **925-688-8175**.

### On This Issue:



## TAP INTO TAP WATER

To provide you with tap water that is clean and safe, the Contra Costa Water District and other public water agencies in central and eastern Contra Costa County carefully protect their water supplies, use state-of-the-art treatment technology and extensively test the water they send to homes and businesses. As a result, the tap water delivered to your home meets all drinking-water standards set by the state and federal governments.

This spring and summer, when the weather starts heating up, tap water is an excellent choice to quench your thirst. It provides sugar-free hydration at an affordable price, with the average cost of tap water in central and eastern Contra Costa County at about half a cent per gallon. Also, tap water can be carried in a reusable bottle, making it an environmentally sound choice.


CCWD Board of Directors:
Joseph L. Campbell - President • Karl L. Wandry - Vice President • Bette Boatmun • John Burgh • Lisa M. Borba
Jerry Brown - General Manager • Gina Oltman - Writer/Editor

# Los Vaqueros Reservoir Expansion Now Under Construction

Construction is under way to increase the capacity of the Contra Costa Water District's Los Vaqueros Reservoir by 60 percent to 160,000 acre-feet. The $120 million project will ensure high-quality water deliveries to customers, improved reliability during drought and protections for Delta fisheries and the environment. Construction will be completed in a year.

"The District and many other local, state and federal agencies have been working on this project since 2001," said Joseph L. Campbell, president of the District's Board of Directors. "In these times of uncertainty for the Delta, an expansion of Los Vaqueros Reservoir will improve water supplies and water quality, create jobs, and help the environment."

The District is enlarging the reservoir by raising the height of the Los Vaqueros Dam by 34 feet. This work will entail removing the upper portion of the existing dam, then rebuilding it to be higher. This new configuration will enable the rebuilt dam to hold significantly more water in the reservoir.

Other elements of the project include relocating the Los Vaqueros Marina to higher ground, realigning trails to reflect the new shoreline and establishing mitigation areas. The Middle River Intake and Pump Station, which is the new pump station that will help the Old River Pump Station fill the enlarged reservoir, was built and put into operation in summer 2010.

While the enlarged reservoir will allow the District to hold more water in storage, the amount of its overall water supply remains the same. The District contracts with the U.S. Bureau of Reclamation for its Delta supply, and those contracts have not changed.

The Bureau of Reclamation and the California Department of Water Resources funded the planning phase of the reservoir expansion project, and the District is financing the design and construction costs with water revenue notes that are funded within the current rate projections.

During construction, recreational programs, fishing and some trail access will be maintained to the extent possible, but there will be some temporary closures and program reductions to ensure public safety. For more information and access to a web cam showing construction, go to **www.ccwater.com/lvexpansion**.

## Los Vaqueros Recreation Update

The north side of the Los Vaqueros Watershed is closed to ensure public safety while heavy construction is under way, however the south side of the watershed remains open for fishing, rental boating and hiking.

On the reservoir's south shore, you'll find the Los Vaqueros Marina with fishing supplies, electric boat rentals, snacks, watershed maps and plenty of helpful advice for recreation enthusiasts.

You can find the Marina using Internet mapping services by entering the address: 9990 Los Vaqueros Road, Byron, CA, 94513. More information is available at **www.ccwater.com** or from the Marina at **925-371-2628**.

# Wise Water Use Is Good for Everyone, Every Year

The rain and snow that fell on California this year has provided the state with a sufficient supply of water. However, while it may be tempting to use water freely this summer, it is important to remember that we all have a responsibility to use water wisely so that everyone's water needs can be met.

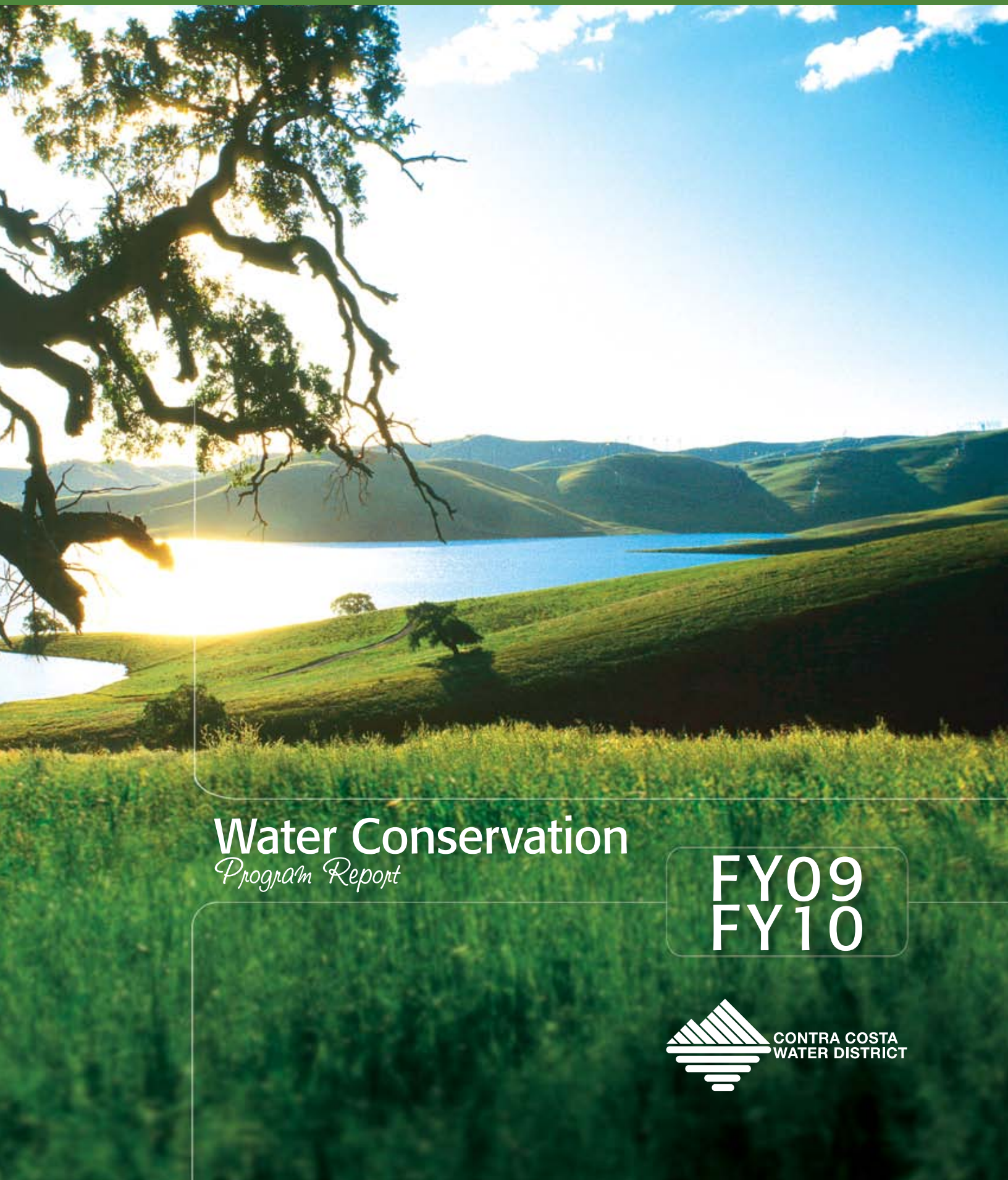
Here are some free programs the District is offering to help you manage your water use:

**Get a Free Landscape Water Use Assessment:** CCWD is offering free Home Landscape Water Evaluations for single-family homes with irrigation systems. A trained surveyor will inspect your irrigation system, suggest improvements, and prepare a site-specific watering schedule. Just call the Conservation Department at **925-688-8320**.

**Get a Discount on Mulch:** A two- to three-inch layer of mulch in your landscape reduces the need to water by reducing water evaporation from the soil. Mulch usually needs to be replenished every spring, and the District is offering a money-saving coupon. You can find the coupon by visiting **www.ccwater.com/conserve** and clicking on the "Mulch Mulch Mulch" logo.

**Save Money at Recycled-Water Car Washes:** CCWD has teamed up with a group of car wash companies that recycle water using multi-stage filtration systems and equipment that can wash your car thoroughly with less water than most people use at home. To get a car-wash coupon, go to **www.ccwater.com/conservation** and click on the "Smart Wash Car Wash" logo.

PAD 5/11 170,000



# Water Conservation

*Program Report*

FY09
FY10

CONTRA COSTA
WATER DISTRICT

# Table of Contents



# Our Mission

The mission of the Contra Costa Water District is to strategically provide a reliable supply of high-quality water at the lowest cost possible in an environmentally responsible manner.

## Board of Directors

Lisa M. Borba..... Division 1
John Burgh..... Division 2
Joseph L. Campbell..... Division 3
Bette Boatmun..... Division 4
Karl Wandry ..... Division 5

## General Manager

Jerry Brown

# Introduction

Contra Costa Water District (CCWD, District) has implemented a successful Water Conservation Program for more than 20 years. The goals of the Program are to reduce long-term water demand in conformance with the District's Future Water Supply Plan, and meet the conservation Best Management Practices (BMPs) required in the water service contract with the United States Department of the Interior, Bureau of Reclamation (Reclamation). In the coming years, the Conservation Program will be an important tool for the District in meeting the newly prescribed State mandate to reduce water use by 20% by 2020. This report documents the accomplishments of the Water Conservation Program during Fiscal Years (FY) 2009 and 2010, and highlights additional conservation services provided to meet the demands of the drought.

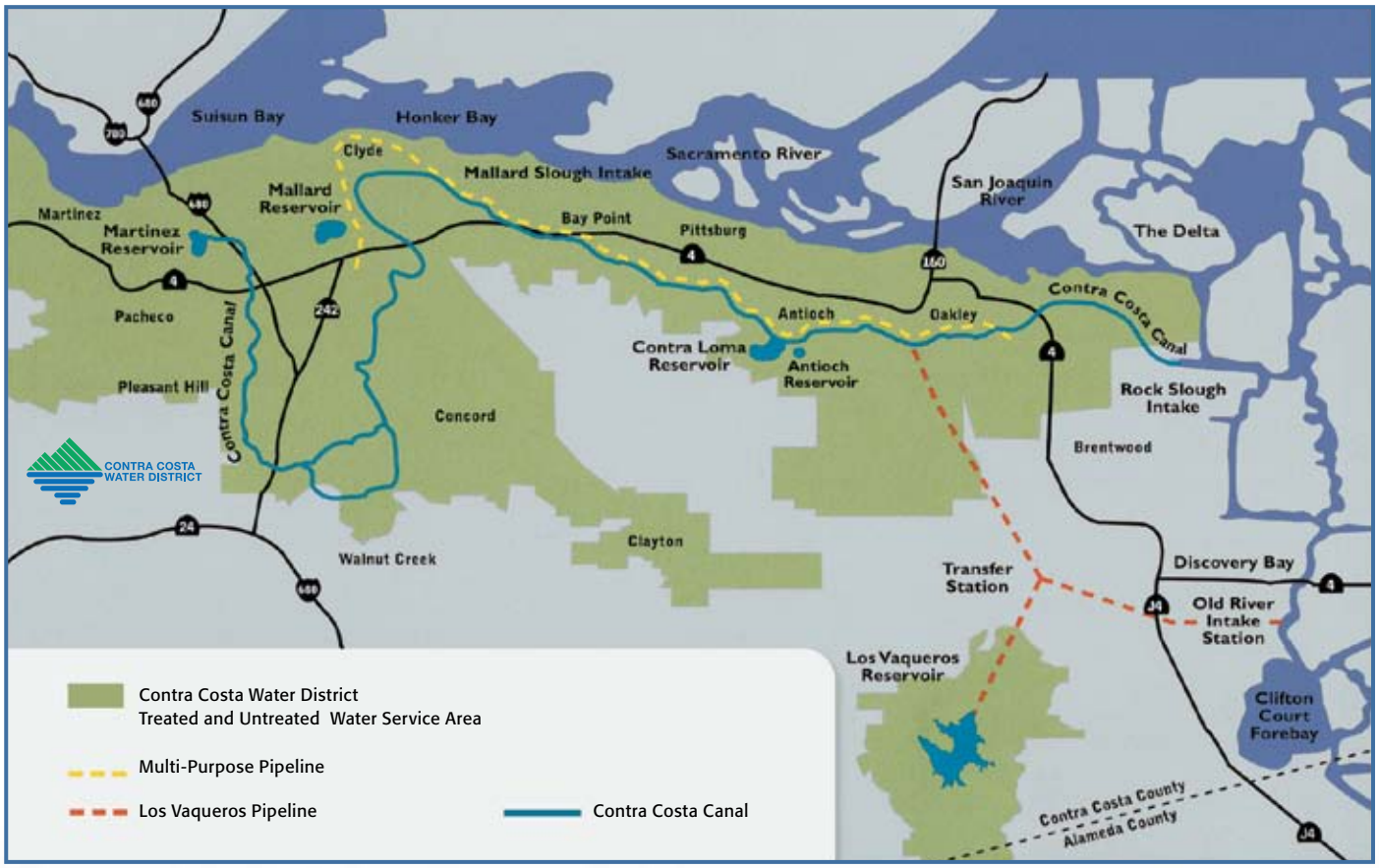
In response to three consecutive dry years, Reclamation announced that CCWD's 2009 water allocation would be reduced to 65% of historic deliveries. On April 1, 2009, the CCWD Board of Directors adopted a Drought Management Program (DMP) designed to reduce customer water demand in response to the lowered water allocation from Reclamation. The DMP required all customers to use no more than their historical water use, and required landscape irrigation customers and the highest single family customers to reduce water use by 45% and 15%, respectively. Customers who exceeded their water budgets were charged an excess use charge equal to four times the normal water rate. The DMP was in effect from May 1, 2009 through April 30, 2010. Subsequently, the District has continued the excess use charge at two times the normal water rate to encourage efficiency and discourage waste.

CCWD's Water Conservation Program expanded its services in order to assist customers to meet the reduction goals while the DMP was in effect. CCWD successfully helped many of its customers improve their water use efficiency, and the District met its water use reduction goal.

*Service Area*

# CCWD Service Area

CCWD purchases water from Reclamation and provides treated and untreated water to approximately 550,000 people in central and eastern Contra Costa County. The District provides retail treated water service to Clayton, Clyde, Concord, Pacheco, Port Costa, and parts of Martinez, Pleasant Hill and Walnut Creek. In addition, the District sells wholesale treated water to the City of Antioch, Golden State Water Company in Bay Point, Diablo Water District in Oakley, and the City of Brentwood (parts). CCWD sells untreated water to the cities of Antioch, Martinez, and Pittsburg, as well as to 22 industrial customers. Total District water use in FY10 was 48,000 acre feet less than it was in the late 1980s before the District instituted its conservation program. Savings are a result of the active conservation program, plumbing code changes and the DMP.




# Water Conservation Program Highlights

The adoption of CCWD's Drought Management Program (DMP) significantly increased the demand for Water Conservation services. CCWD successfully met the increased demand, by assisting many of its customers in meeting their water reduction goals by expanding its programs and services. The District provided free on-site conservation surveys, free conservation devices, rebates, and other services. As shown in the following table, customer participation in the conservation programs offered by CCWD increased significantly compared to pre-drought levels:

| Program Element | FY10 Activities | FY09 Activities | FY08 Activities (pre-drought) |
|---|---|---|---|
| Single Family Surveys | 1,028 | 888 | 675 |
| Multi-Family Surveys | 1,301 | 508 | 818 |
| CII and Landscape Surveys | 177 | 88 | 132 |
| Showerheads | 3,185 | 5,699 | 155 |
| Faucet Aerators | 3,321 | 6,586 | 163 |
| High Efficiency Toilet Rebates | 3,994 | 2,881 | 1,903 |
| High Efficiency Washer Rebates | 4,262 | 3,634 | 2,327 |
| Smart Sprinkler Timers | 108 | 91 | 50 |

CCWD also developed numerous educational materials to remind customers of California's continued drought conditions and urging customers to use water efficiently. These included four-minute Shower Timers, Restaurant Table Tent Advertisers, and Cling-Stick mirror decals. New brochures were created to educate customers on how to manage water use during a drought, including the *Drought Survival 101* and *How to Read Your Water Meter* brochures and the new *Lawn & Landscape Watering Schedule.*

# Water Conservation Program Goals

During FY09 and FY10, the Conservation Program had three primary goals: 1) assist customers to meet the required demand reductions under the Drought Management Program; 2) meet the Water Conservation Best Management Practices (BMPs) required under the District's Central Valley Project (CVP) water supply contract with the United States Bureau of Reclamation; and 3) reduce long-term water demand in conformance with the District's Future Water Supply Study (FWSS).

The District successfully met these goals as described in the following sections.

*Water Conservation*

# Program Achievements

**The demand for Conservation services increased significantly during FY09 and FY10 as a result of the DMP. CCWD successfully met the increased demand by expanding its programs and services. The following is a summary of key program elements implemented during the year.**

## Conservation Surveys

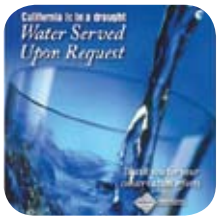
Conservation surveys are available free of charge to help customers improve their water use efficiency. Conservation surveys allow CCWD staff to provide face-to-face assistance to our customers. In addition to water savings and educational benefits, conservation surveys provide a valuable customer service. Following the adoption of the DMP, the survey format was adjusted to focus customers' attention on the amount of water they were using in their landscapes and in demonstrating how to track consumption. Customers were taught how to read their water meters and to use the information to track their water usage compared to their drought water budgets. In addition, customers were provided with site-specific information about how much water they are using in their irrigation system, and they were provided with site-specific landscape watering schedules aimed at meeting their reduction goals.

The District conducted 888 single family, 508 multi-family, and 88 commercial and landscape surveys in FY09, and 1,028 single family, 1,301 multi-family, and 177 commercial and landscape surveys in FY10.

## Conservation Incentives

Showerheads and Faucet Aerators: CCWD's Conservation Program provided free devices to customers, including showerheads, faucet aerators, and spray nozzles for outdoor hoses. As a result of the DMP, requests from single family and apartment customers increased significantly, especially during the last few months of FY09 when the DMP began. In FY09, 5,699 showerheads and 6,586 faucet aerators were distributed, and in FY10, 3,185 showerheads and 3,321 faucet aerators were distributed. Demand was considerably higher compared to only 155 showerheads and 163 faucet aerators distributed in FY08.

**Shower Timers:** The District began distributing new water conservation shower timers in May 2009. These easy-to-use timers stick to the shower wall and are used to remind customers that we are in a drought and to take shorter showers. Customers responded very favorably to the timers.




**Restaurant Table Tents:** The District delivered informational "table tents" to all full-service restaurants in the treated water service area. These cards were placed on restaurant tables to remind customers of continued drought conditions in California and that water will be served upon request. The cards also provide information on the CCWD conservation program. The majority of the restaurants either accepted the table tents or already had a policy of not serving water unless requested. The primary benefit of the program was the additional reminder that California was in a drought.


**Smart Wash Car Wash Coupon Program:** The District provided customers money saving coupons for discounts at local car washes that recycle water. Car washes that recycle water can use 50% less water compared to washing with a hose.


**Money Saving Mulch Coupon Program:** The District partnered with local nurseries to develop coupons for discounts on landscape mulch. Coupons for 10 to 20 percent savings encouraged customers to purchase mulch for their home landscapes. Mulch saves water by reducing evaporation from the soil. It also improves the soil as it decomposes, making plants healthier. More than 25 nurseries participated in the program.

## Conservation Rebates

The District provides a variety of rebates designed to encourage customers to purchase and install water-efficient equipment and devices. Demand for rebates significantly increased in FY09 and FY10 due to the drought.

**High-Efficiency Toilets:** Rebates on High-Efficiency Toilets (HET) provide an incentive to customers with inefficient toilets to update their bathroom fixtures with newer, water-efficient models. The program allows customers to pre-apply for a rebate and utilize vouchers for discounts at the point of purchase. To be eligible, a customer's existing toilet must flush 3.5 gallons or more, the new HET must flush 1.28 gallons or less, and be an Environmental Protection Agency (EPA) Water-Sense-certified toilet.

In addition to the goal of immediate water savings, the HET Program has a goal of increasing the availability and sales of HETs in the retail marketplace. For several years, water agencies throughout the state have offered incentives for HETs to promote this market transformation. In 2006, there were approximately 76 HET models available. Since that time the number has nearly doubled each year, and in 2010, there are more than 850 HET models available.

CCWD provided 2,881 HET rebates in FY09, and 3,994 in FY10, compared to only 1,903 in FY08.

**High-Efficiency Clothes Washer:** Rebates on High-Efficiency Clothes Washers provide an incentive for customers to upgrade their inefficient top-loading washers to water and energy-efficient front-loading models. The District and other Bay Area water agencies contracted with Pacific Gas and Electric (PG&E) to manage a single rebate program throughout the Bay Area. Participating customers were required to fill out a single application to receive a rebate from both the water agency and PG&E. The streamlined rebate processing reduced the administrative costs of the program and made it easier for customers to participate.

The District provided 3,634 Washer rebates in FY09, and 4,262 in FY10, compared to 2,327 in FY08.

**Smart Sprinkler Timers:** Rebates for Smart Sprinkler Timers provide an incentive for customers to purchase sprinkler timers that automatically adjust themselves based on real-time weather changes. In FY09, the District provided 91 smart sprinkler timer rebates, representing 1,028 irrigation stations. In FY10, the District provided 108 smart sprinkler timer rebates, representing 1,630 irrigation stations.

**Sprinkler and Nozzle Retrofit:** Rebates for sprinkler heads and sprinkler nozzles are available to commercial customers as an incentive to upgrade their sprinkler systems. To be eligible, commercial customers must ensure installation includes pressure regulation, proper head spacing, proper sprinkler pop-up height, and matched precipitation within a watering zone. Water savings are achieved by improving the distribution uniformity of the sprinklers and by lowering the precipitation rate, allowing the water to be absorbed rather than run off the soil. Rebates of $4 to $7 per head are available for qualifying sprinkler heads and nozzles. The District provided rebates for 789 sprinkler heads and 928 sprinkler nozzles in FY09, and 1,483 sprinkler heads and 2,992 nozzles in FY10.

**Drip Retrofit:** Rebates are available to commercial customers as an incentive to retrofit existing sprinkler systems with qualifying drip systems. To be eligible, the drip systems must meet specific criteria, including pressure regulating emitters, mulched landscape areas, and the removal of the sprinkler system. Water savings are achieved by eliminating overspray, runoff and wind drift. The District provided rebates for 92 sprinkler station conversions in FY09 and 110 in FY10.

**Pilot Water-Efficient Landscape Rebate Program:** During FY10 the District initiated a Pilot Rebate Program to encourage customers to replace water-thirsty grass with water-efficient landscaping. Participants were required to replace existing grass with water-efficient plants and retrofit existing spray irrigation with drip irrigation. Eighty customers participated replacing more than 225,000 square feet of grass. The Pilot program will be evaluated during the next year to determine continuing the program in the future.

# Education & Outreach

**Complimenting the extensive conservation programs in place for customers, the District developed educational materials to assist customers conserve water.**

**Drought Survival 101:** A series of brochures was developed entitled, *Drought Survival 101*, which focused on providing customers with information to maintain their landscapes during a drought. Three brochures focus on strategies to help landscapes survive drought conditions, while encouraging customers to use water efficiently with focus on lawn, trees, shrubs, and mulch. All brochures are available to customers at the District Center and at key community events.

**How to Read Your Water Meter:** The District developed a flyer on *How to Read Your Water Meter*, which provides step-by-step instructions on how to use the water meter as a tool to monitor usage. In addition, the CCWD website was updated with an on-line calculator and video to help customers to determine water use.

**Lawn & Landscape Watering Schedule:** One of the easiest ways to save water during the fall months is to reduce lawn and landscape watering. The District has developed a flyer explaining why plants need less water in the fall and providing a month-by-month watering schedule for lawns and landscapes. This watering guide was distributed to landscape customers, property managers, landscape managers, and others throughout the fall.


**Gardening in Contra Costa County Plant Database:** In 2005 the District developed a Water-Wise Gardening CD-Rom Program. The CD-Rom was a photo-oriented plant and garden database designed to inspire customers to plant low water-use gardens appropriate for Contra Costa County. The CD-Roms were distributed to customers for use on their home computers. Since 2005, more than 5,500 copies were distributed. In 2009, the District worked with its vendor to transfer the plant database onto a website. This has dramatically increased the ability for all customers to access the plant database and has reduced the cost of running the program.

**Water Savings Team:** In July 2008, the District created a Water Savings Team to address reports of water waste and unreasonable use of water, and to ensure proactive and timely actions. The team consists of members of Customer Service, Conservation, and Operations and Maintenance. The District responds to reports within an hour, and most issues are fully addressed within the same day. The majority of the water waste reports are for broken sprinkler systems or over-watering resulting in excessive runoff. The quick response by the Water Savings Team demonstrates to our customers that CCWD is committed to water conservation.

**Customer Outreach:** Throughout FY09 and FY10, the District participated in numerous community events to provide customers with water conservation information and education. This outreach provides direct communication with customers, keeps them informed and reminds them to continue their conservation efforts. The District also conducted numerous workshops for various customer classes to introduce the Drought Management Program and to provide customers with an overview of the available water conservation services.

**School Education Program:** Each year the District conducted school presentations to over 30,000 service-area students, teachers, and parents. The school education program provides information on various aspects of water and always includes information on water conservation. By educating students about the value of water and water conservation, the adults of tomorrow become more informed.

**Electronic News:** During the past two years, the District has utilized e-mail and the internet to provide conservation information to its customers. An electronic newsletter is sent approximately every month providing current drought updates, conservation tips, and monthly lawn and landscape watering advice. Customers can also receive a monthly water schedule to remind them to adjust their timers. Finally, the District provides information on current events through its blog.

# Water Savings & Costs

**Total Annual Savings** is defined as the difference between current annual use compared to historical use. The historical use period is the average annual use for 1987, 1988, and 1989, adjusted for growth (historical use). The current use is the FY10 use also adjusted for growth. The historical use period reflects a period prior to the implementation of the District's Conservation Program and prior to the adoption of major plumbing code changes. The total annual savings for FY10 was 48,331 acre-feet. Water savings occur in three categories:

**Active Savings** are defined as water savings from CCWD Conservation Programs that can be directly quantified. These include conservation surveys, rebates and other incentives. Active savings are calculated each year by multiplying the number of actions conducted by the unit savings. Individual conservation actions each have a defined savings life and decay rate. Active savings during Fiscal Year 2010 were approximately 4,036 acre-feet.

**Plumbing Code Savings** are defined as water savings from plumbing retrofits of inefficient showerheads, toilets and clothes washers that occur outside the District's incentive program. In 1992, the plumbing code was revised and the efficiency standards of these fixtures were increased. Therefore, conservation savings occur each time an older fixture is replaced. Plumbing Code savings are calculated each year by estimating the number of inefficient fixtures replaced by the unit savings. Plumbing Code savings during Fiscal Year 2010 are estimated to be 8,553 acre-feet.

**Non-Quantifiable Savings** are from actions taken by CCWD and independently by its customers for which the savings are not directly quantifiable. A large part of the savings in 2010 is due to customers reducing their water use to meet the demands of the Drought Management Program. Additionally, the spring of 2010 was cooler and wetter than normal; resulting in less landscape water use, and the slower than normal economy likely affected water demand. Savings can also be attributed to CCWD leak repair, CCWD meter replacements, public information, conservation outreach, and school education. Non-Quantifiable savings are estimated each year by subtracting the Active Savings and Plumbing Code Savings from the total annual savings. Non-Quantifiable Savings for FY10 are estimated to be 35,742 acre-feet.

**Program Costs:** The Water Conservation Program, including the additional costs for the Drought Management Program, was implemented within the adopted FY09 budget of $2,114,444, and the FY10 budget of $2,880,014. This included the labor and material costs for surveys, devices, rebates and other outreach programs, as well as additional costs for the DMP. Expenditures for the public information program and for the school education program are not included. The District obtained $126,000 in FY09 and $430,874 in FY10 in grant funding for the Water Conservation Program, which help offset rate funding for the Water Conservation Program.

CONTRA COSTA
WATER DISTRICT

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# APPENDIX J

## Resolution No. 12-09, a Resolution of the Board of Directors of the Contra Costa Water District Authorizing Approval of the Contra Costa Water District 2011 Water Management Plan as Required by the United States Bureau of Reclamation

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CERTIFIED A TRUE COPY OF THE ORIGINAL

Mary A. Neher, District Secretary
Contra Costa Water District

**RESOLUTION NO. 12-09**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CONTRA COSTA WATER DISTRICT AUTHORIZING APPROVAL OF THE CONTRA COSTA WATER DISTRICT 2011 WATER MANAGEMENT PLAN AS REQUIRED BY THE UNITED STATES BUREAU OF RECLAMATION**

WHEREAS, Section No. 3405(e) of the Central Valley Project Improvement Act of 1992 (Title XXXIV, Public Law 102-575, 106 Stat. 4713) requires the Secretary of the Interior to establish an office to develop criteria for evaluating water conservation plans developed by Central Valley Project contractors, and to evaluate the adequacy of plans submitted by project contractors; and

WHEREAS, Section 210 of the Reclamation Reform Act of 1982 (Public Law 97-293; 43 U.S §390jj(b)) requires each district with a repayment or water supply contract to develop and maintain a water conservation plan containing definite goals, appropriate water conservation measures, and time schedules for meeting conservation objectives; and

WHEREAS, the Contra Costa Water District has such a water supply contract and has therefore prepared a water management plan to report on water conservation activities in conformance with the above guidelines; and

WHEREAS, the United States Bureau of Reclamation has reviewed and approved the Contra Costa Water District's water management plan subject to minor conditions.

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

1. This Board does hereby find, determine and declare that the Contra Costa Water District 2011 Water Management Plan, including any additional non-substantive revisions, is hereby approved and adopted.

2. The General Manager, or his designee, is hereby authorized to submit the final Contra Costa Water District 2011 Water Management Plan to the United States Bureau of Reclamation.

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The foregoing Resolution was duly and regularly adopted at a regular meeting held on the 21st day of March 2012 by the Board of Directors of the Contra Costa Water District by the following vote of the Board.

AYES: Boatmun, Wandry, Borba, Campbell

NOES:

ABSTAIN:

ABSENT: Burgh

Joseph L. Campbell, President

ATTEST:

Mary A. Neher
District Secretary