URBAN WATER MANAGEMENT PLAN

JUNE 2011

CONTRA COSTA WATER DISTRICT

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June 2011

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Executive Summary

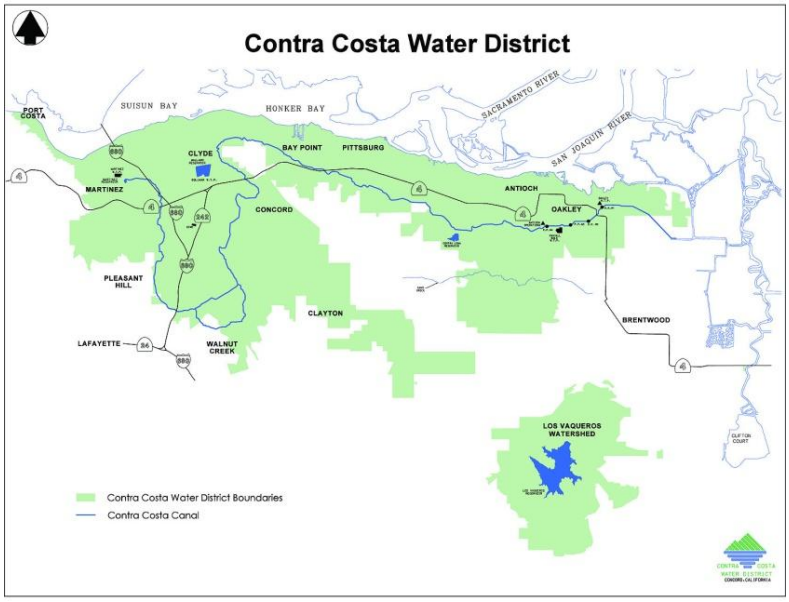
The 2010 Urban Water Management Plan (UWMP) for the Contra Costa Water District (CCWD or District) is an update to the plan adopted by the District's Board of Directors (Board) in December 2005 and is prepared in compliance with the California Urban Water Management Planning Act. All urban water suppliers, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet annually are required to prepare a UWMP. The UWMP documents the District's planning activities to ensure adequate water supplies to meet existing and future demands for water. One of the foundational documents relied upon to develop and update the UWMP is the Future Water Supply Study (FWSS), the District's long-term water supply plan. The 2010 UWMP presents information on the District's supply and demand forecasts, conservation programs, water shortage contingency planning, water transfers, and recycled water opportunities to the year 2035. The UWMP also includes a description of the plan adoption, public coordination, and planning coordination activities. The 2010 UWMP summarizes the status of the District's water demand management measures (also known as best management practices or BMPs) and includes the new requirements of the Water Conservation Bill of 2009 (SB X7-7), which was passed in 2009 and requires an evaluation of baseline per capita water use and identification of interim and 2020 per capita water use targets to achieve a 20% per capita water use reduction by 2020. Completion of a UWMP is required in order for a water supplier to be eligible for Department of Water Resources (DWR) administered state grants and loans and drought assistance. It is also a source of information for Water Supply Assessments (SB 610) and Written Verifications of Water Supply (SB 221). The CCWD UWMP meets all requirements of the California Urban Water Management Planning Act.

District Background

CCWD provides water to approximately 500,000 people in Contra Costa County. CCWD's service area is shown in Figure E-1 and 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). CCWD operates and maintains a complex system of water transmission, treatment, and storage facilities to supply both treated and untreated (raw) water to its customers. Formed in 1936 to provide water for irrigation and industry, CCWD is now one of the largest urban water districts in California and a leader in drinking-water treatment technology and protection of the Sacramento-San Joaquin Delta (Delta).

CCWD provides treated water to Clayton, Clyde, Concord, Pacheco, Port Costa and parts of Martinez, Pleasant Hill and Walnut Creek. In addition, wholesale treated water is provided to the City of Antioch, the Golden State Water Company in Bay Point, the Diablo Water District in Oakley, and the City of Brentwood. CCWD sells untreated water to the cities of Antioch, Martinez and Pittsburg, as well as to industrial and irrigation customers.

FIGURE E-1. SERVICE AREA



CCWD pumps water from four intakes in the Sacramento-San Joaquin Delta. The intakes are located at Rock Slough, on Old River, on Victoria Canal and at Mallard Slough. The backbone of the District's water conveyance system is the 48-mile Contra Costa Canal, which starts at Rock Slough and ends at the Martinez Reservoir.

Water Quality

CCWD's mission is to "strategically provide a 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 all of CCWD's intakes are subject to variations in water quality caused by salinity intrusion, Delta hydrodynamics, and discharges into the Delta and its tributary streams from both point and non-point sources. Since 1992, the District has spent over $1 billion on capital improvements, including $450 million on the Los Vaqueros Project, and over $400 million on projects directly related to improving water quality and the security of the District's water delivery system (such as improvements at both Bollman and Randall-Bold Water Treatment Plants, Middle River Intake, construction of the Multi-Purpose Pipeline, improvements at Contra Loma Reservoir, and other District projects). Notwithstanding these efforts, Delta water quality at the District's intakes (as measured by chlorides) has declined significantly over the last twenty years, affecting the reliability of the District's supplies and its ability to consistently provide high-quality water to its customers. In addition, judicially-imposed restrictions on diversions from the Delta that started in 2007 and actions by regulatory agencies affecting such diversions in the future have the potential to further degrade water quality in the Delta. The increase in chlorides directly impacts the performance of the Los Vaqueros Reservoir by requiring additional blending releases from the reservoir to meet the District's water quality objectives. A detailed discussion of the reliability of the District's water supplies and water quality is included in Section 2.

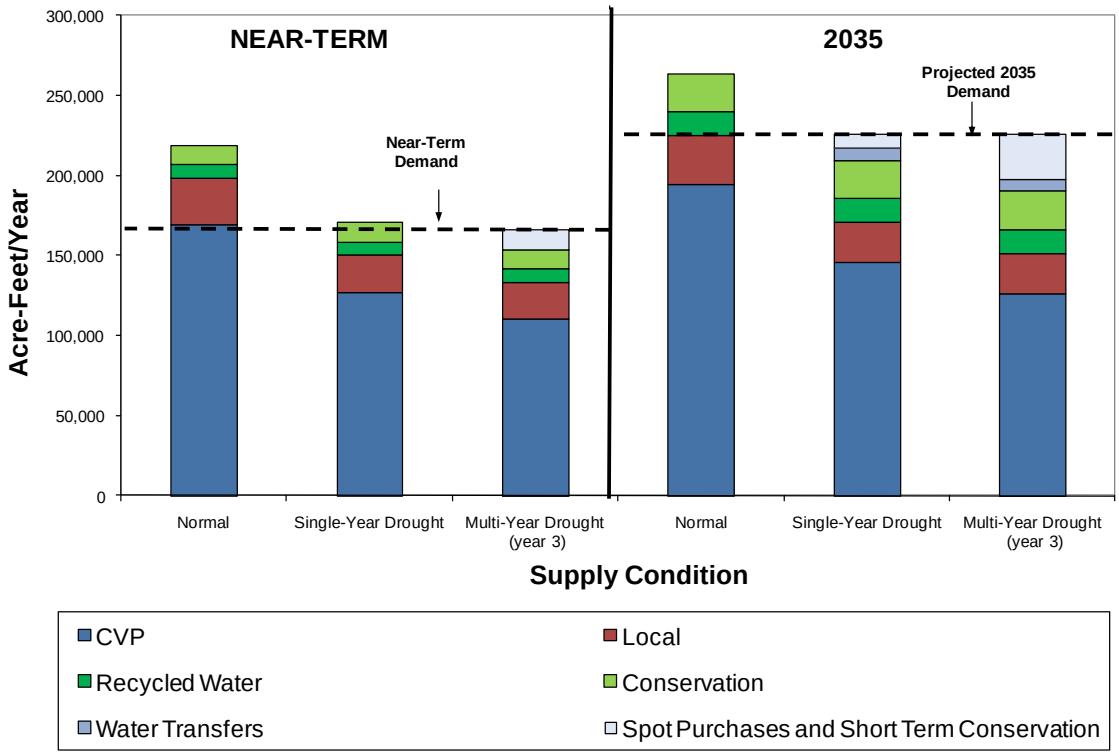
CCWD is implementing a comprehensive water quality strategy to protect and improve source and treated water quality for its customers. CCWD's multi-pronged approach includes seeking improved water quality sources, reducing impacts of Delta agricultural drainage on source water quality, participating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

Forecast of Supply Reliability and Demand

The District's FWSS included an evaluation of water demand, conservation, and existing and potential sources of supplies including continued use of Central Valley Project (CVP) water, recycled water, desalination, and water transfers. The supply and demand forecasts presented in the UWMP are consistent with the FWSS and are shown in Figure E-2. Near-term demands can be met under all supply conditions except in the latter years of a multi-year drought where short-term water purchases or voluntary short-term conservation of up to 9% would be considered to meet demands. Future demands will be met through implementation of the FWSS. The Preferred Alternative identified in the FWSS included renewal of CCWD's water service contract for CVP water, which has been completed; implementation of an expanded conservation program (referred to as CPA1), which is ongoing; and water transfers to bridge the gap between projected demand and supplies. A February 2000 Agreement with the East Contra Costa Irrigation District (ECCID) to transfer surplus irrigation water was the first long-term water transfer for CCWD.

In later years, several types of drought conditions may result in supply shortfalls of up to 30,000 acre-feet (AF). The water supply reliability goal adopted by the District's Board of Directors is to meet 100 percent of demand in normal years and a minimum of 85 percent of demand during a drought. Planned implementation of the FWSS Preferred Alternative will provide a minimum of 7,200 acre-feet of additional supply to meet the water supply reliability goal. A combination of short- or long-term water purchases and drought demand management are planned to meet any remaining supply deficit.

FIGURE E-2. PROJECTED SUPPLY AND DEMAND



Water Demand Management Measures

The UWMP describes CCWD's current water demand management measures. Conservation has significantly lowered current water use levels and will reduce the need for future supplies. CCWD has successfully developed, implemented, and maintained an effective water conservation program since 1988. CCWD serves less water today than during the early 1990s, despite a 40% increase in population (Figure E-3). In addition**,** CCWD's federal water (CVP) allocation was significantly reduced in 2009-2010 following three very dry years and it became necessary to implement a Drought Management Program. To ensure the program's success, an extensive educational campaign with free services for the public was included. The resulting customer response was overwhelmingly positive and water consumption was reduced by nearly 20%. Although the rainy winter of 2010-2011 has formally ended the drought, CCWD continues to work closely with its customers to encourage them to conserve water, eliminate water waste, and generally adapt to the possibility of drier years ahead. CCWD is also partnering with local industries in the service area to identify and implement projects to accomplish a combined objective of water, energy, and wastewater reduction for sustainability. The benefits are cost and waste reduction, greenhouse gas emission reduction, and water savings. CCWD will continue to look for new, cost-effective technologies, refine and improve existing conservation programs, and evaluate regional opportunities to implement conservation projects.

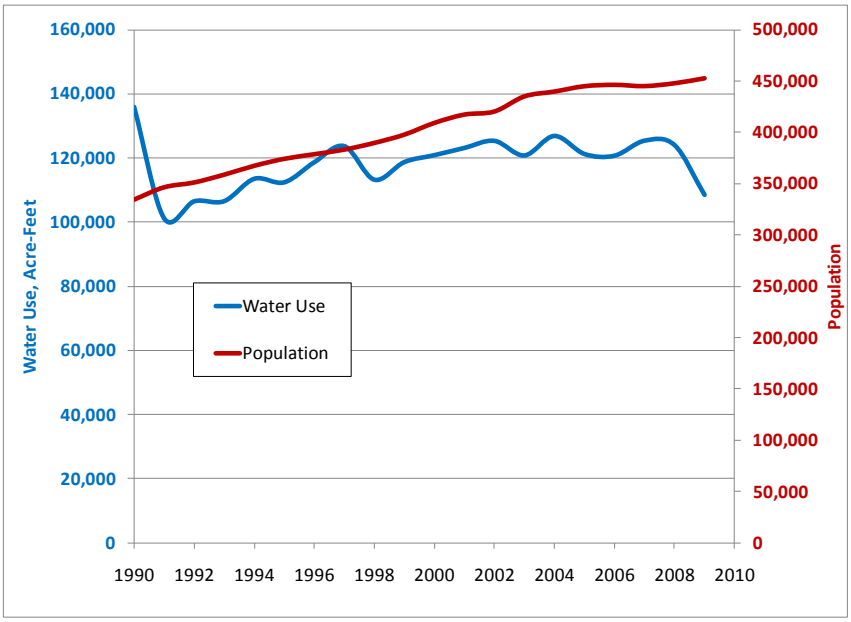


FIGURE E-3. WATER USE AND POPULATION GROWTH

Table E-1 provides a summary of the water conservation programs and estimated water savings for each of the activities implemented as part of CCWD's conservation program. The conservation program is consistent with the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) developed by the California Urban Water Conservation Council (CUWCC) and signed by CCWD in 1991. Current annual savings are estimated to be approximately 4,300 acre-feet and occur during one year (FY11) as a result of all previous years' activities that still have residual savings in that year. Cumulative savings from the District's program exceed 46,000 acre-feet, which is the sum of each annual year's savings from the inception of the program.

TABLE E-1. WATER CONSERVATION PROGRAM			
Conservation Activity	**Total Activities**	**Annual Savings (AF in FY11)**	**Cumulative Savings from FY11 and Past Programs (AF)**
SF Surveys	15,457	196	3,315
MF Surveys	34,675	71	2,015
CII Surveys	2,188	187	2,331
Landscape Surveys	1,795	297	6,231
Showerheads (2.0-2.5 gpm)	30,812	195	1,958
Faucet Aerators (2.0-2.5 gpm)	10,901	18	33
Toilets (ULFTs @1.6 gpf)	38,557	1168	13,221
Toilets (HETs at 1.28 gpf)	10,684	410	963
Residential Clothes Washers	21,587	652	2,849
Commercial Clothes Washers	439	24	137
Pre-Rinse Nozzles	691	59	389
High Efficiency Urinals	294	5	23
Smart Sprinkler Timers	371	168	517
Drip Retrofit (number of stations)	283	14	45
Rain Sensors	87	0	26
Sprinklers and/ or Nozzles Replaced	6,713	5	21
Water Budgets	2,746	42	1,700
Water-Wise CD Rom/ Web hits	8,467	1	2
Meters Installed for untreated landscape customers	58	200	1,290
Cooling Tower Conductivity Meter (tons of cooling)	1,000	5	27
Lawn Conversions (square feet)	180,000	18	18
Fall Back Marketing Program		128	385
Public Information Program		449	8,576
Total		4,312	46,074

a) Definitions: gpm = gallons per minute; gpf = gallons per flush

Water Shortage Analysis

The water shortage analysis component of the UWMP provides options for managing the water supply and demand balance during water supply shortage conditions. These options have been developed based on the District's previous experience with short-term demand management and in consideration of long-term conservation goals. The updated Water Shortage Contingency Plan presented in Section 4 of the UWMP sets forth demand reduction goals in four stages linked to the availability of supplies to the District. The total demand reduction goal for each stage increases from less than 10 percent to up to 50 percent of normal demand from Stage I to Stage IV. Stages I and II typically involve voluntary customer demand reduction measures and Stages III and IV impose mandatory measures including allotments and excess use charges.

TABLE E-2. 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

Recycled Water Opportunities

Section 5 of the UWMP provides information on current recycled water use in the District's service area, potential recycled water sources and projects, and projected use of recycled water within the District's service area over the next 25 years. 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. Since 1988, CCWD has completed a number of studies, demonstration projects, pilot testing programs, and business plans to verify the feasibility of using recycled water. In 1995, Central Contra Costa Sanitary District (CCCSD) and CCWD entered an agreement where CCCSD purveys recycled water to areas in Concord and Pleasant Hill. Sixty-one customers were identified in the agreement as potential recycled water users with a total potential recycled water demand of approximately 1,600 acre-feet per year (af/yr or AFY). The Delta Diablo Sanitation District (DDSD) and CCWD entered an agreement for DDSD to purvey up to 8,600 af/yr of tertiary treated recycled water to the Delta Energy Center and the Los Medanos Energy Center. Both energy centers were operational by 2002. This project is one of the largest industrial recycled water projects in the State of California. In 2004, DDSD and CCWD entered another agreement where development of recycled water facilities will provide up to 1,654 af/yr to areas in Pittsburg and Antioch. The recycled water would be for urban landscape and golf course irrigation uses.

Approximately 10,000 af/yr of recycled water was utilized within the District's service area in 2010, including treated wastewater used for wildlife habitat enhancement and wetlands. Future use is anticipated to grow to over 19,000 af/yr through full utilization of the current agreements and development of the Concord Naval Weapons Station. The City of Concord Community Reuse Plan proposes to develop approximately 5,000 acres of the Concord Naval Weapons Station, which is located within the District's treated water service area. The Reuse Plan incorporates significant water conservation measures and recycled water standards. 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. There are also opportunities to provide up to an additional 3,000 af/yr of recycled water if the planned open spaces and parks are irrigated.

Actual and projected use of recycled water is shown in Table E-3 on the following page.

TABLE E-3. ACTUAL AND PROJECTED FUTURE USE OF RECYCLED WATER						
Recycled Water Use	**2010 Actual (AFY)**	**2015 (AFY)**	**2020 (AFY)**	**2025 (AFY)**	**2030 (AFY)**	**2035 (AFY_**
Irrigation[a]	920	1,410	1,900	2,390	2,880	3,360
Industrial[b]	7,050	7,580	8,110	8,640	9,170	9,800
Wildlife Habitat Enhancement & Wetlands[c]	2,240	2,510	2,780	3,050	3,320	3,590
Concord Naval Weapons Station[d]	--	--	500	1,300	2,100	2,800
Total	10,210	11,500	13,290	15,380	17,470	19,550

a) CCCSD's Pleasant Hill Project Agreement (1,630 AFY), DDSD's DEC/LMEC Project Agreement (80 AFY) and DDSD/CCWD General Agreement (1,650 AFY). Year 2035 assumes full implementation of these agreements.
b) DDSD's 12.8 mgd water recycling plant provides recycled water to the DEC/LMEC power plants. The power plants are estimated to use up to 8,600 AFY. Industrial use includes 1,200 AFY of CCCSD plant use.
c) Mountain View Sanitary District. Future flows based on 3.2 mgd average dry weather flows at build-out condition (2035).
d) Concord Naval Weapons Station, Water Supply Assessment, June 2010.

20% by 2020 Evaluation

SB X7-7 requires the District to include an evaluation to establish the District's baseline per capita water use, an interim water use target (2015), and a 2020 water use target that demonstrates a 20% reduction in per capita water use by the year 2020 (20% by 2020). For the District's retail treated water service area, the baseline per capita consumption is 183 gallons per capita per day (gpcd), with a preliminary interim target of 165 gpcd and a 2020 target of 146 gpcd. The District has already made significant progress toward meeting its water use reduction requirements through implementation of past conservation and recycling efforts. The District's customers responded well to the 2009 Drought Management Program with per capita consumption in 2010 at approximately 140 gpcd, which is below the preliminary 2020 target of 146 gpcd. Per capita consumption is anticipated to increase in the coming years as a result of drought rebound and improving economic conditions. The District will continue to implement its conservation program to reduce long-term water demand in conformance with the District's FWSS and the requirements of SB X7-7.

A regional approach to meeting the 20% by 2020 requirements is included as Appendix H in the UWMP. The regional evaluation offers the District and its municipal customers an additional way to comply with the requirements. The regional alliance includes CCWD's retail service area and its wholesale municipal customers (Cities of Antioch, Pittsburg, and Martinez, Golden State Water Company, and Diablo Water District). Each agency will meet the requirements of SB X7-7 if it achieves the reductions on its own, or if the region meets the requirement as a whole. For the District's total service area, the baseline per capita consumption is 261 gpcd, with a preliminary interim target of 235 gpcd and a 2020 target of 209 gpcd.

Depending on the level of rebound in water use from the drought and economic recession, the District estimates it will need to achieve an additional 5 to 10% reduction in per capita water use beyond its existing conservation program to meet the 2020 water use target.

This can be achieved by expansion of current efforts, including:

- Conservation surveys for single-family, multi-family, commercial, industrial, institutional, and large landscape customers;
- Conservation incentives including shower timers, smart car wash coupons, and mulch coupons;
- Conservation rebates for high-efficiency toilets, high-efficiency clothes washers, smart sprinkler timers, sprinkler and nozzle retrofits, drip retrofits, and water-efficient landscapes; and
- Education and outreach programs including flyers on how to read your meter, lawn and landscape watering schedules, and school education programs.

Other programs that will be considered include the industrial conservation initiative to help industries conserve water and energy, a rate structure to encourage and reward conservation, and continued education programs.

Report Contents

The UWMP contents and format reflect the guidelines provided by the Department of Water Resources. The sections are generally organized with the applicable statement of law appearing first, followed by detailed information demonstrating compliance with the law. Section 1 summarizes the District's ongoing public participation activities and interagency coordination efforts related to the UWMP. Section 2 describes the District's service area, water supply sources, and major facilities. Section 2 also provides information on the District's past, current, and projected water use, and presents a comparison of projected water supply and demand through 2035. Section 3 describes implementation of the District's water demand management measures. Section 4 describes the District's water shortage contingency plan. Section 5 describes the District's recycled water activities. Section 6 describes how water quality affects supply reliability. Section 7 summarizes the District's planning approach to ensure a reliable water supply. Section 8 documents Board adoption of the UWMP. Lastly, Section 9 provides the 20% by 2020 evaluation required by SB X7-7.

Some of the information requested by DWR is contained in existing documents, which are included in the report appendices. The documents include relevant sections of the District Code of Regulations and applicable Board Resolutions. Additional appendices include the regional 20% by 2020 evaluation, DWR's checklist of UWMP requirements, text of the California Urban Water Management Planning Act and SB X7-7, the California Urban Water Conservation Council (CUWCC) Annual Reports prepared by the District for FY09 and FY10, the public notices prepared for the UWMP, the letters to the municipal customers, and a list of references.

SECTION 1: Agency Coordination

10620 (c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.
(d) (1) An urban water supplier may satisfy the requirements of this part by participation in area wide, regional, watershed, or basin wide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.
(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.
(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.
(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621. (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.
(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.
(c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

Contra Costa Water District (CCWD) encouraged agency coordination in the development of its water supply plan (FWSS in 1996 and 2002) and the UWMP. CCWD sent a letter to each of its municipal customers on June 22, 2010 notifying them that the UWMP was being updated.

Shortly after, CCWD held a meeting with its municipal customers in July 2010 to discuss UWMP preparation and coordinate on a regional alliance approach to complying with the requirements of SBx7-7.

Notification letters describing the UWMP preparation requirements were also sent to local cities, counties, and wastewater agencies on October 8, 2010. Wastewater agencies were invited to comment on an administrative draft of the sections pertaining to recycled water.

On February 7, 2011, CCWD sent a second letter to its municipal customers summarizing CCWD's supply reliability assessment for their consideration and use in preparing their own UWMPs. The letter also included a discussion of SBx7-7 requirements and CCWD's regional alliance "20% by 2020" analysis that was being prepared on behalf of its municipal customers.

Copies of the notification letters are provided in Appendix B. Throughout the UWMP preparation, CCWD also met and consulted with municipal customers when contacted for assistance. The draft UWMP was distributed to CCWD's municipal customers and to communities, cities, and other agencies within CCWD's treated water service area prior to adoption by the Board of Directors. One comment letter was received from SAIC on behalf of Chevron Environmental Management Company providing the location of historic petroleum pipelines within CCWD's service area.

In order to maximize its water resources and minimize its need for additional supplies, CCWD is collaborating with several Bay Area agencies on an Integrated Regional Water Management Plan, is one of four agency partners in the Bay Area Regional Desalination Project, and is implementing a Water Transfer Program.

SECTION 2: Contents of UWMP

Step One. Appropriate Level of Planning for Size of Agency.

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

All elements required by the Urban Water Management Planning Act that are applicable to CCWD have been addressed in this report. Table I-1 from DWR's Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan (Guidebook) is a UWMP checklist, organized by legislation number. This table is provided in Appendix C and references the section numbers of this UWMP where the required information can be located.

Step Two. Supplier Service Area

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

Service Area Description

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 50 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.

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 untreated water municipal customers include the Diablo Water District (Oakley) and the Cities of Antioch, Pittsburg, and Martinez. Treated water is distributed to individual customers living in the following communities in CCWD's Treated Water Service Area: Clayton, Clyde, Concord, Pacheco, Port Costa, and parts of Martinez, Pleasant Hill, and Walnut Creek. In addition, CCWD treats and delivers water to the City of Brentwood, Golden State Water Company (Bay Point), and the City of Antioch, as described below. Figure 2-1 shows the CCWD service area boundary with the smaller interior Treated Water Service Area boundary.

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.

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 United States Bureau of Reclamation and District natural and recreation resources, and protect public safety and water quality.

Population Trends

The San Francisco Bay Area (Bay Area) as a region has experienced a large level of growth in recent decades, with 2 million people added to the population since 1980. The population in Contra Costa County has grown rapidly due to the availability of land and the trend toward increased suburban growth. Over one-third of Contra Costa County's most recent population increase took place in East County. The Association of Bay Area Governments (ABAG) makes population, household, and economic forecasts for the nine-county Bay Area region. Population projections based on 2009 ABAG data for the entire service area is provided in Table 2-1. Population projections for the Treated Water Service Area are provided in Table 2-2.

TABLE 2-1. CCWD SERVICE AREA POPULATION						
	DOF[a]	Projections from ABAG[b]				
	2010	2015	2020	2025	2030	2035
Antioch	102,370	110,200	112,700	114,600	116,800	119,200
Brentwood[d]	10,090	12,580	13,230	13,900	14,540	15,190
Clayton	10,900	11,200	11,300	11,400	11,400	11,500
Concord	122,070	131,800	135,700	141,500	147,100	153,000
Martinez	34,390	36,380	37,150	37,630	38,690	39,740
Oakley	35,430	37,250	39,050	40,650	42,550	44,450
Pittsburg	63,260	70,100	76,200	82,100	89,300	96,700
Pleasant Hill	26,460	28,410	30,160	31,360	32,800	34,470
Walnut Creek	26,500	29,120	30,110	31,140	31,970	32,750
Contra Costa County Unincorporated Area	22,370	23,990	24,540	25,010	25,460	25,830
Subtotal	**453,840**	**491,030**	**510,140**	**529,290**	**550,610**	**572,830**
Brentwood (remaining)[c]	41,390	51,620	54,270	57,000	59,660	62,310
Total	**495,230**	**542,650**	**564,410**	**586,290**	**610,270**	**635,140**

a) Data from California Department of Finance (DOF). Population proportioned based on area for Cities not entirely within the District's boundary.
b) ABAG's Building Momentum; Projections and Priorities 2009.
c) In 2004 CCWD entered into an agreement with the City of Brentwood for design, construction and operation of the City of Brentwood Water Treatment Plant, adjacent to the Randall-Bold Water Treatment Plant. The plant delivers water to residents within Brentwood City limits.
d) A portion of the City of Brentwood is within CCWD's service area. The remaining portion is noted above. The City of Brentwood water supply includes local groundwater and surface water delivered under contract from East Contra Costa Irrigation District. CCWD pumps, treats, and delivers the ECCID water under contract with the City of Brentwood.

TABLE 2-2. CCWD TREATED WATER SERVICE AREA POPULATION						
	DOF[a]	Projections from ABAG[b]				
	2010	2015	2020	2025	2030	2035
Clayton	10,900	11,200	11,300	11,400	11,400	11,500
Concord	122,070	131,800	135,700	141,500	147,100	153,000
Martinez	6,230	6,590	6,730	6,820	7,010	7,200
Pleasant Hill	25,790	27,700	29,410	30,580	31,980	33,610
Walnut Creek	21,240	23,340	24,130	24,960	25,620	26,250
Contra Costa County Unincorporated Area	6,750	7,230	7,400	7,540	7,680	7,790
Total	**192,980**	**207,860**	**214,670**	**222,800**	**230,790**	**239,350**

a) Data from California Department of Finance (DOF). Population proportioned based on area for Cities not entirely within the District's boundary.
b) ABAG's Building Momentum; Projections and Priorities 2009.

The population projections in Tables 2-1 and 2-2 include the development of approximately 5,000 acres of the Concord Naval Weapons Station (CNWS), as proposed by the City of Concord Community Reuse Plan. At build-out in 2035, ABAG estimates the CNWS project will increase the population by approximately 21,200 people within CCWD's treated water service area.

Climate

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. Table 2-3 shows the average monthly and annual evapotranspiration, precipitation and temperature for the Brentwood, Concord and Walnut Creek weather stations, showing the climate transition from Brentwood and Walnut Creek through Concord.

TABLE 2-3. MONTHLY CLIMATE CHARACTERISTICS

	Brentwood			Walnut Creek			Concord		
	Monthly Average ETo (inches)	Average Rainfall (inches)	Average Temp (°F)	Monthly Average ETo (inches)	Average Rainfall (inches)	Average Temp (°F)	Monthly Average ETo (inches)	Average Rainfall (inches)	Average Temp (°F)
January	1.07	2.60	46.08	0.82	5.18	47	1.17	2.17	46.54
February	1.77	2.50	50.44	1.47	4.71	51	1.62	2.30	50.28
March	3.74	1.45	55.47	2.92	3.19	54	3.50	1.66	53.62
April	5.29	0.76	59.27	4.4	1.07	58	4.43	1.30	55.92
May	7.06	0.60	65.00	5.57	1.08	62	6.34	0.58	62.23
June	8.00	0.20	70.24	6.66	0.32	67	7.21	0.02	66.75
July	8.38	0.06	73.54	7.4	0.02	69	7.54	0.00	69.01
August	7.22	0.06	72.46	6.35	0.23	70	6.70	0.00	68.37
September	5.66	0.23	69.49	4.73	0.21	68	5.06	0.01	66.87
October	3.82	0.73	62.43	3.34	0.8	63	3.27	0.83	60.68
November	1.88	1.18	52.56	1.54	2.29	54	1.74	1.30	52.83
December	1.09	2.36	44.85	1.01	3.55	47	1.00	4.27	47.43
Average Annual	54.98	12.73	60.15	46.21	22.65	59.17	49.59	14.43	58.38

a) Source: California Irrigation Management Information Service (CIMIS) database for the Brentwood, Concord, and Walnut Creek weather stations.

Major Facilities

Figure 2-1 shows CCWD's service area and locations of major facilities.

Untreated Water Conveyance

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 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 Relift 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 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 diversion point, 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.

Untreated Water Reservoirs

CCWD's untreated water storage reservoirs are Mallard, Contra Loma, Martinez and Los Vaqueros. Figure 2-1 shows the locations of these untreated water reservoirs, the Los Vaqueros Reservoir watershed boundary, and other CCWD facilities. Mallard Reservoir provides water to Bollman Water Treatment Plant and is used as a storage facility for emergency use, flow regulation, and to provide blending of the different sources of supply. The reservoir has a usable capacity of about 2,100 acre-feet, which is currently equivalent to about two weeks of supply during maximum demand for the TWSA customers.

Contra Loma Reservoir is used primarily as a regulating reservoir for peak demands and short-term (1 to 7 days) supplies and for emergency storage for CCWD's customers. The reservoir has an available capacity of about 1,700 acre-feet.

Martinez Reservoir, located in the City of Martinez, is at the terminus of the Canal and the Shortcut Pipeline and provides regulating storage to capture flows from Canal operations. The Martinez Reservoir has an available capacity of about 230 acre-feet.

The Los Vaqueros Reservoir was completed in 1998 (initial filling was completed in January 1999). 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 chloride levels typically increase. Besides improving water quality for CCWD's customers, the reservoir stores water for emergency supply (minimum 3-month emergency supply) and for operational flexibility to protect fisheries. In 2011, CCWD began construction to expand the capacity of Los Vaqueros Reservoir to 160,000 acre-feet. Completion of this project is expected in early 2012.

Water Treatment and Conveyance Facilities

The Bollman Water Treatment Plant is CCWD's primary water treatment facility providing treated water to the TWSA. The plant's treatment process includes coagulation, flocculation, sedimentation, filtration, ozonation, and disinfection. The current permitted capacity of the plant is 75 mgd. Water is pumped from the plant to the eight pressure zone distribution system through approximately 800 miles of pipeline ranging in diameter from 2 to 66 inches.

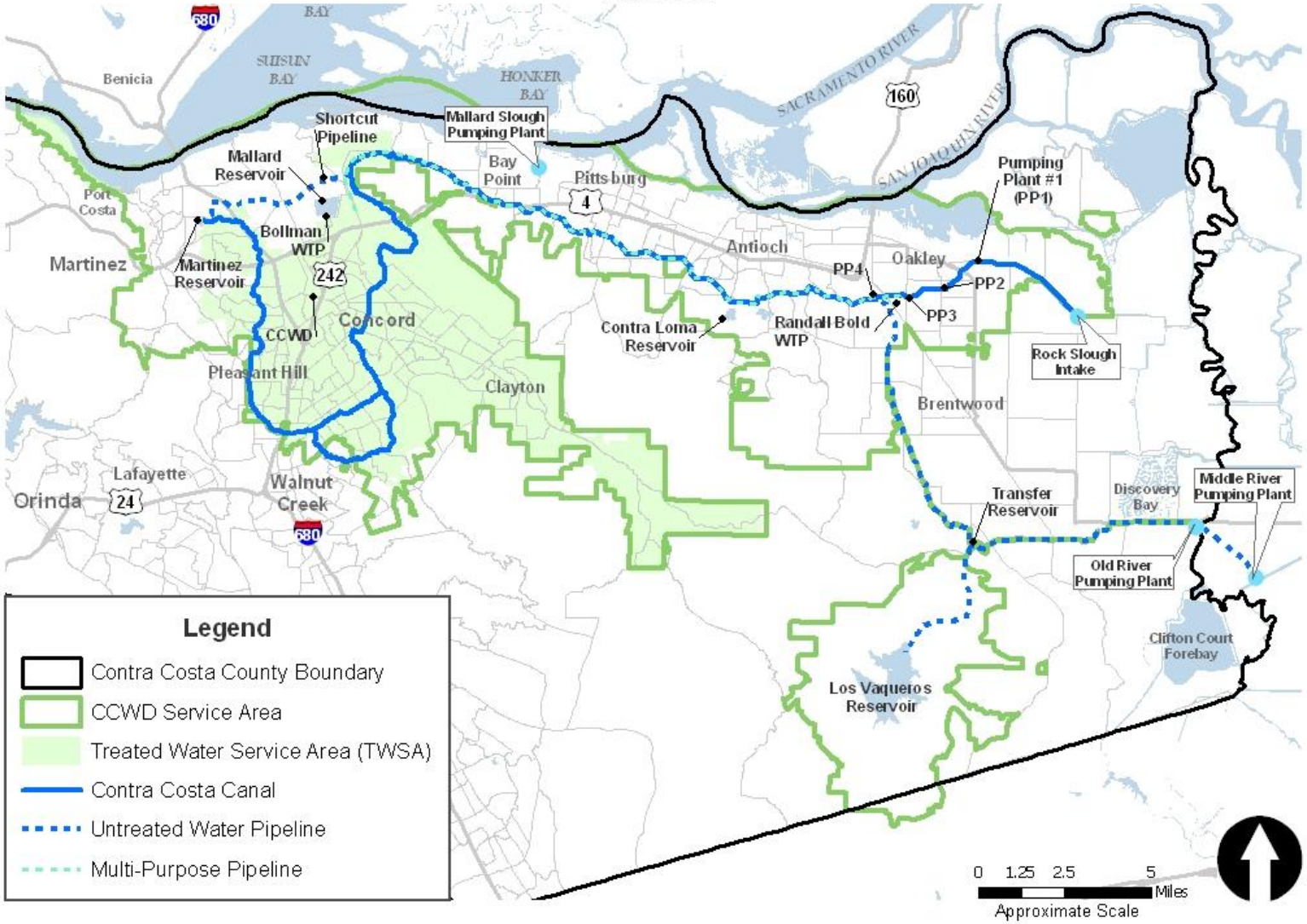
The Randall-Bold Water Treatment Plant is located in the City of Oakley and is jointly owned by DWD and CCWD. The DWD portion of the facility delivers treated water to the City of Oakley while the CCWD portion delivers treated water to the Cities of Brentwood and Antioch, the Golden State Water Company (Bay Point), and the TWSA. The treatment plant's current rated capacity is 50 mgd and the treatment process includes a grit basin, influent mixing basin, flocculation, sedimentation, intermediate and post-ozonation, and disinfection.

CCWD completed a 22-mile Multi-Purpose Pipeline (MPP) in 2003 to increase system conveyance capacity and to improve reliability. The MPP's primary mode of operation is to deliver treated water from the Randall-Bold Water Treatment Plant to customers in central County, freeing up capacity in the Canal for use by wholesale municipal and industrial customers.

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 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.

Water from the Canal is also treated by non-CCWD treatment plants in the cities of Antioch, Pittsburg, and Martinez for delivery to their respective customers. These treatment plants are owned and operated by CCWD's wholesale customers.

CONTRA COSTA WATER DISTRICT
SERVICE AREA MAP
FIGURE 2-1



Step Three and Step Four. Water Sources (Supply) and Reliability of Supply

> *10631 (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments [to 20 years or as far as data is available.]*
> *(c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:*
> *(1) An average water year.*
> *(2) A single dry water year.*
> *(3) Multiple dry water years.*
> *For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.*

Water Supply Sources

CCWD is almost entirely dependent on the Sacramento-San Joaquin Delta for its water supply. CCWD's primary source is the United States Bureau of Reclamation's 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 sources include the San Joaquin River, Mallard Slough, 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. The contract with the United States Bureau of 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 Municipal and Industrial (M&I) Water Shortage Policy defines the reliability of CCWD's CVP supply and was developed by the United States Bureau of 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 between

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 an additional water supply reliability and water quality benefit.

Mallard Slough Supply

CCWD has additional water rights at Mallard Slough for a maximum diversion of Delta water of up to 26,700 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 none available in dry years. When Mallard Slough supplies are used, CVP diversions are reduced by an equivalent amount.

Industrial Diversions

Inland Container (formerly Gaylord Container) and Tesoro (formerly Tosco Corporation) have rights to divert up to 28,000 af/yr and 16,650 af/yr, respectively. Other industries that hold rights to water from the San Joaquin River are Dupont and USS-Posco. These supplies, like the Mallard Slough supply, are variable because of poor water quality that often exists in the San Joaquin River.

Groundwater

Groundwater resources in the CCWD service area do not supply significant amounts of water to meet or augment untreated water demands. There are an undetermined number of wells throughout the CCWD service area owned by industries, private individuals, and public municipal water utilities. CCWD does not manage groundwater, and does not have figures as to how much water is pumped from these wells, but estimates total use within the CCWD service area at approximately 3,000 af/yr. Existing CCWD wells in the vicinity of the Bollman Water Treatment Plant (Mallard Well Fields) can provide approximately 1,000 af/yr, but are limited by the threat of contamination from adjacent industrial areas and physical factors such as air entrapment. The Diablo Water District constructed a groundwater blending facility that began operation in August 2006 and provides approximately 1,000 af/yr to DWD's customers in the City of Oakley.

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 to be used 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.

Recycled Water

In 1995, CCCSD and CCWD reached an agreement allowing CCCSD to purvey recycled water to areas in Concord and Pleasant Hill. Sixty-one customers were identified in the agreement as potential recycled water users with a total potential recycled water demand of approximately 1,600 af/yr. CCCSD currently serves a number of these customers including golf courses, a community college, an elementary school, two middle schools, a high school, parks and medians, a concrete recycling and batch plant, a woodchip and topsoil farm, and the Contra Costa County Animal Shelter where recycled water is used for both landscape irrigation and inside the buildings for kennel washdown. Potential projects have also been identified to expand the customer base for landscape irrigation into North Concord, Martinez, and Walnut Creek.

In 2000, DDSD and CCWD reached an agreement for DDSD to purvey up to 8,600 af/yr of tertiary treated recycled water to the Delta Energy Center and the Los Medanos Energy Center and 20 acres of parks and landscaped areas for an additional 80 af/yr. Both energy centers were operational by 2002. This project is one of the largest industrial recycled water projects in the State of California. In 2004, DDSD and CCWD reached a General Agreement allowing DDSD to provide up to 1,654 af/yr of recycled water for urban landscape and golf course irrigation in Pittsburg and Antioch. A project extending recycled water service to provide landscape irrigation to sites in Antioch was dedicated in 2010 and is expected to be operational in 2011.

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 25 cfs. Actual diversions from the river are limited due to the poor water quality that often exists in the San Joaquin River. Therefore, Antioch relies on untreated water deliveries from CCWD to meet remaining customer demand.

Future Water Supply Implementation

CCWD completed the Future Water Supply Study (FWSS) in 1996 to identify alternatives to offer customers a high quality, reliable supply for the next 50 years. The FWSS was updated in 2002. The FWSS examined water demand, conservation, and existing and potential supplies for a range of service area alternatives. The District's Board of Directors adopted the FWSS,

including the Preferred Alternative and Implementation Plan. The Preferred Alternative provides drought reliability and operational flexibility in the short-term while maintaining long-term supply targets to meet projected demands. The Preferred Alternative includes the following actions to meet future demand:

- Re-negotiation of the District's existing CVP Amendatory contract (I75r-3401) prior to the year 2005. This was completed in May 2005;
- Implementation of an expanded District-wide conservation program (known as CPA 1) to encompass wholesale and retail customers, which would achieve a target of at least 5 percent District-wide savings by the year 2040. These savings are in addition to conservation savings expected from non-District activities; and
- The completion of two or more water transfers to: (1) strengthen the reliability of supplies and drought protection for existing customers, and (2) bridge the gap between water supplies and projected demands. Transfers would be pursued in incremental blocks tied specifically to approved growth within the District.

Projected Water Supplies

Table 2-4 presents the existing and planned sources of supply and their expected availability under various supply conditions in five-year increments over the next 25 years.

The basis of water year data presented in Table 2-4 is as follows: Normal (Average) represents a below normal or wetter year on the Sacramento River Hydrologic Region 40-30-30 Water Supply Index. Single-year drought represents 1977 conditions. Multiple-year drought sequence represents 1987-1992 conditions.

TABLE 2-4. PROJECTED WATER SUPPLY

Condition [a,b]	CVP (af/yr)	Industrial Diversions (af/yr)	Mallard Slough [c] (af/yr)	Antioch Diversions[d] (af/yr)	Groundwater [e] (af/yr)	ECCID Supply (af/yr)	LV Supply[f] (af/yr)	Recycled Water [g] (af/yr)	Planned Purchases (af/yr)	Conservation Savings [h] (af/yr)	Total Planned Supply (af/yr)
Near-Term											
Normal	170,000	10,000	3,100	6,400	3,000	6,000	-	8,500	-	7,900	214,900
Single-Year Drought	127,500	0	0	0	3,000	10,000	10,000	8,500	-	7,900	166,900
Multi-Year Drought (yr 1)	144,500	0	0	0	3,000	10,000	10,000	8,500	-	7,900	183,900
Multi-Year Drought (yr 2)	127,500	0	0	0	3,000	10,000	10,000	8,500	-	7,900	166,900
Multi-Year Drought (yr 3)	110,500	0	0	0	3,000	10,000	10,000	8,500	-	7,900	149,900
2015											
Normal	183,000	10,000	3,100	6,400	3,000	7,100	-	10,500	-	11,000	234,100
Single-Year Drought	137,250	0	0	0	3,000	11,100	10,000	10,500	-	11,000	182,900
Multi-Year Drought (yr 1)	155,550	0	0	0	3,000	11,100	10,000	10,500	-	11,000	201,200
Multi-Year Drought (yr 2)	137,250	0	0	0	3,000	11,100	10,000	10,500	-	11,000	182,900
Multi-Year Drought (yr 3)	118,950	0	0	0	3,000	11,100	10,000	10,500	-	11,000	164,600

TABLE 2-4 CONTINUED. PROJECTED WATER SUPPLY											
Condition [a,b]	**CVP (af/yr)**	**Industrial Diversions (af/yr)**	**Mallard Slough [c] (af/yr)**	**Antioch Diversions[d] (af/yr)**	**Groundwater [e] (af/yr)**	**ECCID Supply (af/yr)**	**LV Supply[f] (af/yr)**	**Recycled Water [g] (af/yr)**	**Planned Purchases (af/yr)**	**Conservation Savings [h] (af/yr)**	**Total Planned Supply (af/yr)**
2020											
Normal	195,000	10,000	3,100	6,400	3,000	8,200	-	12,500	-	16,200	250,900
Single-Year Drought	146,250	0	0	0	3,000	12,200	10,000	12,500	-	16,200	197,500
Multi-Year Drought (yr 1)	165,750	0	0	0	3,000	12,200	10,000	12,500	-	16,200	216,700
Multi-Year Drought (yr 2)	146,250	0	0	0	3,000	12,200	10,000	12,500	-	16,200	197,500
Multi-Year Drought (yr 3)	126,750	0	0	0	3,000	12,200	10,000	12,500	-	16,200	178,400
2025											
Normal	195,000	10,000	3,100	6,400	3,000	8,200	-	13,300	-	17,000	256,000
Single-Year Drought	146,250	0	0	0	3,000	12,200	10,000	13,300	-	17,000	201,800
Multi-Year Drought (yr 1)	165,750	0	0	0	3,000	12,200	10,000	13,300	-	17,000	221,300
Multi-Year Drought (yr 2)	146,250	0	0	0	3,000	12,200	10,000	13,300	-	17,000	201,800
Multi-Year Drought (yr 3)	126,750	0	0	0	3,000	12,200	10,000	13,300	-	17,000	182,300
2030											
Normal	195,000	10,000	3,100	6,400	3,000	8,200	-	14,100	-	19,200	259,000
Single-Year Drought	146,250	0	0	0	3,000	12,200	10,000	14,100	3,100	19,200	207,900
Multi-Year Drought (yr 1)	165,750	0	0	0	3,000	12,200	10,000	14,100	3,100	19,200	227,400
Multi-Year Drought (yr 2)	146,250	0	0	0	3,000	12,200	10,000	14,100	3,100	19,200	207,900
Multi-Year Drought (yr 3)	126,750	0	0	0	3,000	12,200	10,000	14,100	3,100	19,200	188,400
2035											
Normal	195,000	10,000	3,100	6,400	3,000	8,200	-	14,800	-	21,200	261,700
Single-Year Drought	146,250	0	0	0	3,000	12,200	10,000	14,800	7,200	21,200	214,700
Multi-Year Drought (yr 1)	165,750	0	0	0	3,000	12,200	10,000	14,800	7,200	21,200	234,200
Multi-Year Drought (yr 2)	146,250	0	0	0	3,000	12,200	10,000	14,800	7,200	21,200	214,700
Multi-Year Drought (yr 3)	126,750	0	0	0	3,000	12,200	10,000	14,800	7,200	21,200	195,200

a) Basis of water year data is as follows: Normal (Average) represents a below normal or wetter year on the Sacramento River Hydrologic Region 40-30-30 Water Supply Index. Single-Year drought represents 1977 conditions. Multiple-Year drought sequence represents 1987-1992 conditions.

b) The CVP conditions used for supply planning are defined as follows: Normal is Adjusted Historical Use. Single Year Drought supply is 75 percent of Historical Use. Multi-year drought (year 1) supply is 85 percent of Historical Use. Multi-Year Drought (year 2) is 75 percent of Historical Use. Multi-Year Drought (year 3) is 65 percent of Historical Use.

c) Mallard Slough average annual diversion over 15 year period (1995 - 2009).

d) Antioch Diversions is average annual diversion over 11 year period since pumping plant improvements (1999-2009).

e) Groundwater represents production from Mallard Wells, municipal customer owned wells, and miscellaneous other wells in the District's service area.

f) Anticipated water supply reliability benefit resulting from expansion of Los Vaqueros Reservoir.

g) Recycled water does not include wildlife habitat enhancement and wetlands or plant use.

h) Anticipated conservation savings, including both active (CPA 1) and passive conservation.

Step Five. Transfer and Exchange Opportunities

10631 (d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

The District's location in the Sacramento-San Joaquin Delta provides access to supplies from the Sacramento and San Joaquin Rivers and their tributaries. In addition, the State Water Project and Central Valley Project direct their supplies through the Delta en route to delivery points in the San Joaquin Valley and Southern California. The District's location provides direct or indirect access to virtually all water supply and storage facilities in the Central Valley. Following is a discussion of the long and short-term transfer and exchange opportunities available to the District.

Long-Term Water Transfers

The FWSS identified water transfers as a preferred means of strengthening drought protection for existing customers and for meeting future supply shortfalls. The purchase of water transfers follows an incrementally stepped approach, triggered by increases in demand resulting from approved growth within the County and cities of the District. The February 2000 Agreement with the East Contra Costa Irrigation District was the first long-term water transfer for the District. It provides up to 8,200 acre-feet per year in normal years and includes provisions for an additional 4,000 acre-feet per year through groundwater exchange when the CVP is in a shortage condition. It is estimated that an additional water transfer will be purchased in the next 10 to 15 years. Funding for the purchase of additional supplies is being collected through the District's Facilities Reserve Charge (i.e., new connection fees). The following water transfer opportunities are being evaluated by the District:

Conjunctive Use with Long-Term Contract. The District would partner with an agricultural district holding surface water rights and co-invest in conjunctive use facilities, such as new groundwater wells. The new wells would allow the agricultural district to shift use from surface water to groundwater supplies in dry years and exchange its surface water supplies to the District to meet dry-year demand.

Groundwater Banking. The District would extend the reliability of its existing CVP supplies by banking, through groundwater storage, surplus CVP entitlement or other available wet year supplies such as CVP Section 215 water. The District would draw upon the banked water supplies to meet demand when needed.

Lease/Purchase Water Rights and Remarket Surplus Supplies. The District would enter into a long-term water supply lease or purchase an existing water right. The lease or sale would be for a fixed amount of annual supplies. All surplus water supplies would be remarketed through a long-term contract with a third-party buyer or the spot market.

Co-Investment in Agricultural Conservation. This option would involve forming a long-term relationship with agricultural partner holding surface water rights. CCWD would invest in

agricultural conservation infrastructure, such as canal lining and weed abatement projects. A fixed amount of conserved supplies would be made available to CCWD annually and any surplus supplies could be banked through groundwater storage or remarketed.

Fallowing or Crop Shifting Option Contract. This option includes a long-term option contract with an agricultural district. When called upon by CCWD through exercise of the option, the agricultural district would fallow land or shift crops to make water supplies available.

Short-Term Water Transfers

The District has experience in implementing short-term water transfers. The District purchased approximately 3,400 acre-feet of water from Western Water in 2000 and 5,000 acre-feet from the Yuba County Water Agency each year in 2003 and 2004. The goal of the short-term 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. The District also participated in DWR's Drought Water Bank in 1991 and 1992.

Many agricultural districts in Northern California participate in the spot market each year. If required, the District would pursue additional short-term water transfers directly with these agencies.

Step Six. Water Use by Customer-type - Past, Current and Future

10631 (e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:
(A) Single-family residential.
(B) Multifamily.
(C) Commercial.
(D) Industrial.
(E) Institutional and governmental.
(F) Landscape.
(G) Sales to other agencies.
(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
(2) Agricultural.
(3) The water use projections shall be in the same five-year increments described in subdivision (a).

10631.1. (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.
(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

Table 2-5 presents past, current and projected water use within CCWD's service area in five-year increments over the next 25 years. The table reflects total water use, irrespective of the source of supply and includes usage of local supplies by CCWD's municipal customers. The future demand projections shown do not account for reductions through conservation and water recycling. Water use efficiency measures are accounted for as supplies. Actual water deliveries in 2010 were significantly reduced due to the 2007 – 2009 drought and economic downturn. Therefore, actual and adjusted deliveries are provided for the year 2010. Adjusted deliveries represent what water deliveries were anticipated to be absent the drought and recession. Future demand projections are based on the 2002 update of the FWSS and reflect future land use changes and population growth. The demand projections represent the corresponding growth in water demand associated with land use and demographic change and are based on County and City General Plans and municipal customer planning documents. The demand projections show a

significant increase in municipal and industrial demand because it includes a placeholder amount to account for uncertainties in land use planning. The placeholder is based on an amount previously used by a large industrial customer.

TABLE 2-5. PAST, CURRENT, AND PROJECTED WATER USE

WATER USE SECTORS	2005	2010 Actual	2010 Adjusted[(a)]	2015	2020	2025	2030	2035
WHOLESALE								
Treated	2,210	3,850						
Untreated	34,460	25,160						
Local Supplies [(b)]	9,630	10,460						
Subtotal (Wholesale)	**46,300**	**39,470**	**58,020**	**64,570**	**70,410**	**74,770**	**78,270**	**82,200**
RETAIL								
Treated Water Service Area (TWSA)								
Single family residential	*20,850*	*16,570*	*24,059*	*25,111*	*26,431*	*27,216*	*28,835*	*30,827*
Multi-family residential	*6,120*	*5,120*	*7,434*	*7,759*	*8,167*	*8,410*	*8,910*	*9,525*
Residential Irrigation	*1,630*	*1,150*	*1,670*	*1,743*	*1,834*	*1,889*	*2,001*	*2,139*
Commercial	*4,270*	*3,430*	*4,980*	*5,198*	*5,471*	*5,634*	*5,969*	*6,381*
Comm. and Ind. Irrigation	*1,680*	*900*	*1,307*	*1,364*	*1,436*	*1,478*	*1,566*	*1,674*
Industrial	*110*	*80*	*116*	*121*	*128*	*131*	*139*	*149*
Public Authority	*1,020*	*860*	*1,249*	*1,303*	*1,372*	*1,413*	*1,497*	*1,600*
Public Authority Irrigation	*810*	*570*	*828*	*864*	*909*	*936*	*992*	*1,060*
Private Fire Protection	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Temporary Service	*80*	*10*	*15*	*15*	*16*	*16*	*17*	*19*
Distribution Losses	*2,970*	*2,330*	*3,373*	*3,521*	*3,707*	*3,817*	*4,045*	*4,325*
TWSA Subtotal	39,540	31,020	45,030	47,000	49,470	50,940	53,970	57,700
Major Industrial (untreated)[(c)]	41,440	33,749	45,540	51,090	56,640	62,190	67,740	67,740
Irrigation/Ag (untreated)[(d)]	2,720	1,690	3,290	3,290	3,290	3,290	3,290	3,290
Subtotal (Retail)	**83,700**	**66,460**	**93,860**	**101,380**	**109,400**	**116,420**	**125,000**	**128,730**
System Losses [(e)]	11,000	8,740	10,580	11,140	11,690	12,200	12,200	12,200
Total Service Area Demands	**141,000**	**114,670**	**162,500**	**177,100**	**191,500**	**203,400**	**215,500**	**223,100**
Contract deliveries outside Service Area [(f)]	3,940	6,500	6,500	7,180	7,920	8,750	9,660	10,660
Total Deliveries	**144,940**	**121,170**	**169,000**	**184,280**	**199,420**	**212,150**	**225,160**	**233,760**

a) 2010 deliveries were adjusted to reflect anticipated water deliveries absent the 2007-2009 drought and economic downturn. Future projections include total water demands irrespective of source of supply and prior to reductions for conservation and water recycling.

b) Local supplies are obtained and managed by municipal customers and not delivered by CCWD. Includes City of Antioch's San Joaquin diversions and groundwater usage by the Diablo Water District, Golden State Water Company, and the City of Pittsburg.

c) Future projections of major industrial use include a placeholder amount to account for uncertainties in land use planning. The placeholder is based on an amount previously used by a large industrial customer.

d) Irrigation/Ag water use values include unmetered volume of 893 AF and 226 AF in 2005 and 2010, respectively.

e) System Losses include untreated water conveyance losses and Mallard, Contra Loma, Martinez, and Los Vaqueros Reservoir evaporative losses.

f) CCWD wheels water on behalf of the City of Brentwood.

The number of past and current accounts for CCWD's retail and wholesale customers is provided in Table 2-6.

TABLE 2-6. PAST AND CURRENT NUMBER OF ACCOUNTS

Water Use Sectors	2000	2005	2010
WHOLESALE			
Treated	2	3	6
Untreated	7	7	7
Subtotal (Wholesale)	**9**	**10**	**13**
RETAIL			
Treated Water Service Area			
Single family residential	51,183	52,468	53,039
Multi-family residential	29,474	30,314	30,590
Residential Irrigation	521	530	511
Commercial	2,681	2,722	2,736
Commercial and Industrial Irrigation	310	373	403
Industrial	6	6	4
Public Authority	220	212	226
Public Authority Irrigation	363	391	400
Private Fire Protection	861	979	1,058
Temporary Service	206	109	97
Major Industrial	19	21	22
Irrigation/Ag	326	406	411
Subtotal (Retail)	**86,169**	**88,530**	**89,497**
Total CCWD Service Area Accounts	**86,178**	**88,540**	**89,510**

Low-Income Water Demand Projections

The recent amendments to the Urban Water Management Planning Act include requiring water use projections for low-income single family and multi-family residential housing. Estimates of future low-income household water use for the District's retail Treated Water Service Area were estimated using several sources and are provided in Table 2-7. Future projections for low-income water use were based on the Regional Housing Needs Allocation process which was overseen in the Bay Area by the Association of Bay Area Governments (ABAG). Through this process, each jurisdiction is given a set of numbers representing housing units for each income level that the jurisdiction must help to construct, rehabilitate or conserve during the housing period.

TABLE 2-7. LOW-INCOME WATER DEMAND PROJECTIONS						
	Estimated Water Use, Acre-Feet per Year [(a)]					
Low-Income Water Use	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Total	7,320	7,450	7,690	7,990	8,300	8,630
New Demand		130	240	300	310	330

(a) Estimated water use within the District's retail Treated Water Service Area

Step Seven. Demand Management Measures

10631 (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:
(2) A schedule of implementation for all water demand management measures proposed or described in the plan.
(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.
(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.
(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:
(j) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivisions (f) and (g) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

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. As described in section 10631 (j) of the Water Code: "*For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivisions (f) and (g) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.*"

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 D. In addition, the CUWCC Ten-Year BMP Coverage Report is included as Appendix E to demonstrate the District's successful ten-year BMP implementation and compliance with the MOU.

The following sections are included to provide an overview of the District's Water Conservation Program:

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 E is the Ten-year CUWCC BMP Coverage Report that demonstrates successful ten-year implementation.

Table 2-8 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 2-8. WATER CONSERVATION PROGRAMS								
Conservation Activity	**Pre-FY06**	**FY06**	**FY07**	**FY08**	**FY09**	**FY10**	**Cumu-lative 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.

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 approximately 8,000 acre-feet in the year 2040, which is consistent with the FWSS. 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. Total savings resulting from conservation activities are estimated to be over 21,000 acre-feet per year by 2035.

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 section summarizes each of the key program elements.

Conservation Survey Programs

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.

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.

Large Landscape Surveys

The Large Landscape Survey Program targets the highest landscape water users among commercial, institutional, or multi-family customers. The survey includes an inspection of the irrigation system and sprinkler precipitation tests on individual stations. A site-specific irrigation schedule is prepared for the property. Additionally, a report is prepared listing equipment improvements, irrigation schedules, and management changes that would result in more efficient water use. Sites with inefficient irrigation timers or other inefficient irrigation devices are encouraged to participate in the irrigation upgrade program, which offers rebates on select irrigation equipment. 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.

Conservation Incentive Programs

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). Customers can apply for a voucher that will enable them to receive an instant rebate of up to $175 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).

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.

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.

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.

Other Programs

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.

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.

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.

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.

Public Information Program

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.

Water Education Program

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.

Step Eight. Evaluation of Demand Management Measures not Implemented

> *10631 (g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:*
> *(1) Take into account economic and non-economic factors, including environmental, social, health, customer impact, and technological factors.*
> *(2) Include a cost-benefit analysis, identifying total benefits and total costs.*
> *(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.*
> *(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.*

This section is not applicable to CCWD. All DMMs are implemented.

Step Nine. Planned Water Supply Projects and Programs

10631 (h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

The FWSS provides the opportunity for CCWD to evaluate alternative ways of meeting future demand in the context of an overall water supply plan. The FWSS is designed to be a flexible "living" document with periodic review and updates to respond to changing conditions and to incorporate new information and technology as it becomes available. The FWSS was completed in 1996 and updated in 2002.

The FWSS included an evaluation of water demand, conservation, and existing and potential sources of supplies including continued use of CVP water, groundwater, recycled water, desalination, and water transfers from other sources in the Sacramento Valley, Sacramento-San Joaquin Delta, the San Joaquin Valley, and eastern Contra Costa County. The Preferred Alternative identified in the FWSS included renewal of CCWD's water service contract for CVP water, which was completed in 2005; implementation of an expanded conservation program; and water transfers to bridge the gap between projected demand and supplies. The next scheduled update for the FWSS will begin in 2013.

Water Transfers

Water transfers were identified in the FWSS as a preferred means of strengthening drought protection for existing customers and meeting supply shortfalls. The purchase of water transfers would follow an incrementally stepped approach, triggered by increases in demand as a result of approved growth within the County and cities within CCWD. The concept of an incremental stepped approach toward the purchase of water transfers balances CCWD's reliability needs while minimizing financial risk and avoiding growth-inducing implications. In the short-term, such supplies would assist in meeting demands of existing customers during a drought and compensating for possible reductions in the availability of CVP supplies. In the long-term, these same supplies would be used to meet demand of new customers resulting from approved growth of the County and cities.

A February 2000 agreement with ECCID to transfer surplus irrigation water was the first long-term water transfer for CCWD. The ECCID water transfer provides up to 8,200 acre-feet in normal years and up to 12,200 acre-feet when the CVP is in a shortage situation. The ECCID supply is incorporated in the available supply in Table 2-4. Additional planned purchases of water transfers consistent with CCWD's Future Water Supply Implementation Plan are also shown in Table 2-4.

The water supply reliability goal adopted as part of the FWSS is to provide 100% of demand in normal years and at least 85% of demand in drought conditions. Up to 15% of demand during an extended drought may be met with short-term water transfers or a voluntary short-term conservation program.

Conservation

CCWD's conservation program (CPA 1) expanded the District's conservation efforts to encompass retail and wholesale customers. CPA 1 is consistent with the Best Management Practices in the Memorandum of Understanding Regarding Urban Water Conservation Council developed by the California Urban Water Conservation Council. The program includes conservation surveys, plumbing retrofits, and conservation rebates. CCWD is also partnering with local industries in the service area to identify and implement conservation and efficiency projects that accomplish a combined objective of water, energy and wastewater reduction. The initial efforts focus on local refineries and developing projects to optimize boilerfeed and cooling tower systems. These projects will directly reduce water demand and eliminate the need to identify an alternative water source.

In 2009, CCWD further expanded its conservation program and services to assist customers in meeting the reduction goals while the Drought Management Program was in effect. The program included free on-site conservation surveys; free conservation devices such as showerheads, faucet aerators, and spray nozzles for outdoor hoses; shower timers; conservation rebates on high-efficiency toilets and clothes washers; and public outreach and educational materials. CCWD successfully helped many of its customers improve their water use efficiency.

In the coming years, CCWD's conservation program will be an important tool for the District in complying with SB X7-7, which requires water agencies to reduce per capita water use by 20% by 2020.

Recycled Water

CCWD currently has agreements with CCCSD and DDSD to provide recycled water for appropriate uses including industrial cooling tower supplies and large landscape irrigation. Since 2000, a 12.8 mgd recycled water facility has been completed and provides up to 8,600 af/yr to power plants for cooling and process water and will provide an additional 1,654 af/yr of recycled water to CCWD irrigation customers. New recycled water supplies have been incorporated into CCWD's available supply in Table 2-4. Recycled water use is anticipated to increase to up to

14,800 AFY by 2035. In addition, recycled water is currently being used for wildlife and habitat restoration projects within the service area.

CCWD may implement the water supply projects and programs described in this section to increase the amount of water supply available in normal, single-dry, and multiple-dry years. The expected increase in water supply for each project is shown in Table 2-4.

Step Ten. Development of Desalinated Water

10631(i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

Since 2003, CCWD, East Bay Municipal Utility District (EBMUD), San Francisco Public Utilities Commission and Santa Clara Valley Water District have jointly explored the development of a regional desalination facility to supplement dry-year supplies. In the spring of 2010, the Zone 7 Water Agency (Zone 7) joined the project in the interest of an all-year water supply option. The project would provide a new local water supply source for a combined population of 5.6 million people and increase supply reliability during emergencies, such as droughts and earthquakes. Benefits of the project include:

- Minimizing potential adverse environmental impacts associated with the construction of separate desalination plants in close proximity;
- Providing substantial cost savings through economies of scale and resource pooling;
- Promoting strong regional cooperation through joint ownership, operation, and management of a regional facility serving the needs of multiple Northern California water districts;

Recent project milestones include the successful completion of a $1.9 million pilot test at CCWD's Mallard Slough Pump Station, which operated from November 2008 to April 2009. Approximately half of the pilot test cost was funded by a grant from DWR under Proposition 50. The remaining funding came equally from each of the four participating agencies. A final report summarizing the pilot plant results was finalized in June 2010, which included recommended treatment facilities and estimated capital and operating costs for a full-scale facility. The pilot testing evaluated two pretreatment options using brackish water, sea water and nano-filtration membranes divided into three treatment trains. The feed water salinity varied seasonally and tidally, exposing the pilot plant to chloride concentrations ranging from 300 to 3,300 milligrams per liter (mg/L), representing the range of conditions a desalination facility at Mallard Slough would need to treat. The treatment train with a brackish water membrane followed by a seawater membrane performed the most efficiently, with a 70-82% recovery and final chloride levels between 19 to 67 mg/L.

The project partners are currently developing an institutional framework to further define the regional desalination project. The framework includes identifying the project plant size and location, identifying preferred water right options, and evaluating the optimal production and delivery options. Currently, the project partners' preferred alternative is a 20 mgd production water facility located at CCWD's Mallard Slough Pump Station.

Further study is necessary to model the effects on Delta water quality of a full-scale desalination facility located at the Mallard Slough Pump Station. Detailed hydraulic modeling is also

necessary to evaluate wheeling capacity within the EBMUD distribution system, which would be required to deliver water to other project partners. The pilot plant phase was completed within the scope of a 2007 Memorandum of Agreement (MOA) between the project partners. A new MOA is being developed which will include Zone 7 and cover the proposed additional planning studies, modeling tasks, and agency outreach. Completion of work under the new MOA is anticipated by 2014.

SECTION 3: Determination of Demand Management Measures Implementation

10631.5. (a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

(3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

4) (A) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

(B) For purposes of this paragraph, "not locally cost effective" means that the present value of the local benefits of implementing a
water demand management measure is less than the present value of the local costs of implementing that measure.
(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following:
(A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water Conservation in California, and alternative conservation approaches that provide equal or greater water savings.
(B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and
retail water suppliers.
(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following:
(i) Compliance on an individual basis.
(ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements.
(B) The department may require additional information for any determination pursuant to this section.
(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

(c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).
(d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.
(e) The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit biennial reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures.
(f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

The Urban Water Management Planning Act requires DWR to consider whether an urban supplier is implementing, or has scheduled for implementation, the water demand management measures identified in the supplier's UWMP in evaluating applications for grants and loans. CCWD is a signatory to the MOU developed by the CUWCC. CCWD implements the Best Management Practices (BMPs or DMMs), as prescribed in the MOU and Urban Water Management Planning Act. The annual BMP reports for FY09 and FY10 are provided in Appendix D. The CUWCC's Ten-Year BMP Coverage Report demonstrating CCWD's ten-year implementation of the BMP requirements is provided in Appendix E.

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). • 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. • 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. • 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. • Develop and adopt regulations restricting water waste consistent with Stage I reduction goal as necessary.	Treated Water Voluntary % Reductions: Single Family 5 – 15% Multi Family 5 – 10% Commercial 0 – 5% Industrial 0 – 5% Public Authority 5 – 10% Irrigation 10- 15% Municipal 5 – 10% Untreated Water Voluntary % Reductions: Municipal 5 – 10% Industrial 0 – 5% Irrigation 10 – 15% Agricultural 5 – 15%	Water Waste Penalties: 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 • 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. • Develop standard operating procedure for water allotment appeals. • Develop DMP logistical plan including customer service and conservation staffing and equipment needs, budget and schedule. • Program billing system to provide customers with allotments and reduction goals. • 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. • 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. • Develop procedure for accepting or denying new service requests. • Lobby for passage of drought ordinances by appropriate governmental agencies. • Identify recycled water stations available for construction water throughout District service area. • Monitor production weekly against desired reduction goals. • Develop and adopt regulations restricting water waste consistent with Stage II reduction goal.	<u>Treated Water Voluntary % Reductions:</u> Single Family 15 - 25% Multi Family 10 - 20% Commercial 5 - 10% Industrial 5% Public Authority 10 - 20% Irrigation 35% Municipal 10 - 20% <u>Raw Water Voluntary % Reductions:</u> Municipal 10 - 20% Industrial 5% Irrigation 30% Agricultural 15 - 25%	<u>Water Waste Penalties:</u> 1. Educational letter 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 • Develop Drought Management Program (DMP) as described in Stage II. Program will include excess use charges. • 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. • Develop DMP logistical plan as listed in Stage II • Program billing system as listed in Stage II • Develop and implement DMP Communication Plan as described in Stage II • Develop and implement outreach to municipal and other customer classes as described in Stage II • Develop and implement more stringent procedure for accepting or denying new service requests • Lobby for passage of drought ordinances by appropriate governmental agencies. • Identify recycled water stations available for construction water throughout District service area. • Monitor production daily against necessary reductions. • Develop and adopt regulations restricting water waste consistent with Stage III reduction goal such as: - main flushing allowed only for emergencies - cars washed only with buckets or hoses equipped with shut off valves - manage water use to stay within allotment - day-of-week water restrictions - consider suspending all untreated water flat-rate (unmetered) accounts - prohibit filling of lakes and pools	Treated Water Mandatory % Reductions: Single Family 25 - 40% Multi Family 20 - 30% Commercial 10 - 20% Industrial 10% Public Authority 20 - 30% Irrigation 75% Municipal 20 - 30% Raw Water Mandatory % Reductions: Municipal 20 - 30% Industrial 10% Irrigation 75% Agriculture 25 - 40%	Water Waste Penalties: 1. Excess use charges 2. Flow restrictors 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 • All public water uses not required for health and safety prohibited unless using tank truck water supplies or recycled wastewater • Prohibit new connections	Treated Water Mandatory % Reductions: Single Family 40 - 50% Multi Family 30 - 50% Commercial 30 - 50% Industrial 10 - 35% Public Authority 30 - 50% Irrigation 90-100% Municipal 30 - 50% Raw Water Mandatory % Reductions: Municipal 30 - 50% Industrial 10 - 35% Irrigation 90-100% Agricultural 40 - 50%	Water Waste Penalties: 1. Excess use charges 2. Flow restrictors 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 • May not provide health and safety requirements in extreme shortages • Undermines water conservation efforts and encourages water wasting during non-shortage periods • Base bi-monthly consumption must be determined for each customer
Flat Allotment	• Easy to determine and administer • Effective for periods of extreme shortage (Stage IV) • Base-year consumption for each customer is not needed	• Not equitable • 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 • Flexible – suitable for all stages • Provides customers greatest control • May minimize customer complaints and appeals	• More complicated to develop and program into billing system than the simple percent reduction. • More complicated to explain to customers • 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.

Step Four. Prohibitions, Consumption Reduction Methods and Penalties

> *10632 (d-f)*
> *(d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.*
> *(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.*
> *(f) Penalties or charges for excessive use, where applicable.*

This section describes CCWD's policies and prohibitions against specific water use practices during water shortages, customer reduction methods, and potential penalties for excessive use.

Mandatory Prohibitions on Water Wasting

Board Resolution No. 93-23 - *Water Waste Prohibitions within the Area Served by the District* includes prohibitions on wasteful water uses such as prohibiting the use of potable water for street cleaning, washing paved or hard-surfaced areas, using single pass cooling systems in new connections, and failure to repair a controllable leak of water. A general policy regarding the practice of waste is also included in CCWD Code of Regulations Section 5.44.010. A summary of Board Resolutions and a list of CCWD Regulations regarding conservation and the UWMP are provided in Appendix F.

Specific prohibited uses of District-furnished water enacted during the 2009 Drought Management Program include the following:

- Using water for non-recirculating decorative fountains or filling decorative lakes or ponds.
- Washing paved or other hard-surfaced areas, including sidewalks, walkways, driveways, patios, and parking areas.
- Outside watering that results in excessive flooding or runoff into a gutter, drain, patio, driveway, walkway or street.
- Washing a vehicle, trailer or boat using a hose without a shut off nozzle.
- Irrigation through any new connection to the Contra Costa Canal and Laterals system.
- Flushing sewers or hydrants, testing fire systems or washing streets, except when it is determined by the District at its sole reasonable discretion to be necessary for emergencies, protection of public health and safety, or essential operations.
- Use of potable water for construction, except when it is determined by the District at its sole reasonable discretion that no alternative non-potable water supply is reasonably available.
- New water service connections having single-pass cooling systems or non-recirculating systems.

Consumption Reduction Methods

A summary of the consumption reduction methods that may be utilized by CCWD during a water shortage emergency are summarized in Table 4-11.

TABLE 4-11. CONSUMPTION REDUCTION METHODS

Examples of Consumption Reduction Methods	Stage When Method May Take Effect
Demand reduction program	All stages
Use prohibitions	All stages
Education program	All Stages
Percentage reduction goal set by customer type	All Stages
Voluntary rationing	I, II
Flow restriction	III, IV
Excessive use penalties	II, III, IV
Plumbing fixture replacement (beyond CPA 1 Program)	III, IV
Mandatory rationing	III, IV
Incentives to reduce water consumption	III, IV
Prohibit new connections	IV
Restrict for only priority uses	IV
Per capita allotment by customer type	IV

Excessive Use Penalties

CCWD's excess use charges used in 1991 and 2009 are shown in Table 4-12. Excess use charges are to be reviewed and modified as warranted by the conditions of a specific drought period.

TABLE 4-12. EXCESS USE CHARGES

Use Exceeds Allotment by:	1991 Excess Charge[(b)]	2009 Excess Charge[(c)]
1-10%	**2 x unit price**	**4 x unit price**
10.01 – 20%	**4 x unit price**	**4 x unit price**
20.01 – 30%	**6 x unit price**	**4 x unit price**
30.01 – 40%	**8 x unit price**	**4 x unit price**
over 40%	**10 x unit price**	**4 x unit price**
500 gal/day (for single family homes)	**Flow restrictor installed**	

a) Source: Resolution No. 91-11 and Amended Ordinance 09-01

b) 1991 Excess use charges applicable to the District's treated water retail customers.

c) 2009 Excess use charges applied to any customer that increased water usage compared to the base period, or customers with water usage exceeding 1,000 gallons per day that did not achieve the applicable reduction goal.

Step Five. Revenue/Expenditure Impacts and Measures to Overcome Impacts

> *10632 (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.*

This section describes the potential impacts to CCWD's revenue resulting from implementation of temporary consumption reduction actions and measures to overcome those impacts. Customer sales data from 2005 are used as an example of a normal revenue pattern. Table 4-13 shows the normal untreated and treated water use levels and the reduced levels associated with each stage (assuming a given stage is in effect for one year). To estimate the impact of each stage on revenues, current commodity rates and charges (as of February 2011) are applied to the water use levels in Table 4-13. These revenue reductions are combined with estimated increased expenses resulting from managing the supply shortfall to derive the net revenue shortfalls shown on Table 4-14. To simplify the analysis, only CCWD's revenue most sensitive to variation in annual water use and expenses significantly altered by the managing of a water shortage is included in the tables. The net change from the "normal" water supply condition is identified for the revenue and expense items and represents the total estimated revenue impact.

TABLE 4-13. EXAMPLE WATER SALES BY STAGE

Water Sales[(a)]	Current Use af/yr	Stage 1 Up to 10% af/yr	Stage II 10-20% af/yr	Stage III 20-35% af/yr	Stage IV 35-50% af/yr	Maximum Reduction 50% af/yr
Untreated Water	86,086	79,450	77,018	67,662	58,893	44,119
Treated Water	36,740	34,497	29,857	25,101	20,092	16,281
Total	122,826	113,947	106,875	92,763	78,985	60,400

a) Based on 2005 CCWD water sales. Totals do not include deliveries from other sources, such as groundwater or customers' own surface water supplies.

TABLE 4-14. EXAMPLE REVENUE IMPACT OF REDUCED CUSTOMER SALES						
Revenue/Expenses	**2011 Revenue (x1,000)**	**Stage I 5% [a] (x1,000)**	**Stage II 15%[a] (x1,000)**	**Stage III 25%[a] (x1,000)**	**Stage IV 35%[a] (x1,000)**	**Max. Reduction 50%[a] (x1,000)**
Revenue Impacted by Shortage						
Treated Water Variable[b]	$48,171	$45,230	$39,146	$32,910	$26,343	$21,346
Untreated Water Variable[c]	$48,493	$44,755	$43,385	$38,115	$33,175	$24,853
TW Facilities Reserve Charge[d]	$4,340	$4,340	$4,340	$4,340	$-	$-
Subtotal	$101,004	$94,325	$86,871	$75,365	$59,518	$46,199
Net Revenue Change	**$-**	**($6,679)**	**($14,133)**	**($25,639)**	**($41,486)**	**($54,805)**
Operating Expense						
Extra Administrative[e]			$400	$400	$400	$400
CVP Supply Costs[f]	$-	($350)	($628)	($1,184)	($1,727)	($2,460)
Net Expense Change	**$-**	**($350)**	**($228)**	**($784)**	**($1,327)**	**($2,060)**
Estimated Surplus or (Deficiency)	**$-**	**($6,329)**	**($13,904)**	**($24,854)**	**($40,158)**	**($52,745)**

a) The overall reduction goal is shown for each stage, however, these reductions differ from the projected reductions for specific customer classes (see Table 4-2).
b) Based on rates effective 2/1/11 for treated water quantity charges ($1,254/af) and a weighted average of the treated water energy zone surcharge ($66/af).
c) Based on rates effective 2/1/11 for untreated water quantity charges ($552/af) and an estimate ($11/af) for untreated water demand charges.
d) Revenue from the treated water facilities reserve charge is not expected to be affected by a shortage unless a new connection moratorium is imposed under extreme shortage conditions (Stage IV).
e) Stages II, III, and IV costs reflect hiring the equivalent of four temporary staff and increased costs to administer and implement a customer communication effort.
f) Cost savings for supply computed as the variable cost of CVP water ($39.40/af) multiplied by the difference between the normal year sales and the shortage condition sales.

CCWD updates its Ten-Year Capital Improvement Program (CIP) annually based on historical and projected revenue and expenditures. The CIP provides a comprehensive view of the asset investments required over the next ten years to ensure adequate water resources, maintain high quality water, and meet the service needs of present and future customers. The CIP allows CCWD to prioritize its investments, manage cash flows, and project revenue requirements and long-term rate impacts to fund the proposed projects and anticipated operating costs. The revenue sources available to CCWD include water sales, system connection fees, interest income, property taxes, applicant funds, reserves, and other non-operating revenues including new funds from regional partnerships and various grants.

CCWD's annual CIP update provides the means to address the revenue impacts of reduced customer sales resulting from drought. Actions that may be taken in the CIP include use of reserves, reductions or deferrals in capital expenditures, and rate adjustments. The District currently maintains a specific reserve fund (Drought Relief Fund) to help mitigate the revenue impacts of a prolonged drought. There may be additional outside funding sources made available to water agencies under a water emergency situation (Stage IV).

Step Six. Draft Ordinance and Use Monitoring Procedure

10632 (h & i)
(h) A draft water shortage contingency resolution or ordinance.
(i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

This section presents the actions required by CCWD to adopt the Emergency Water Reduction Plan. An Emergency Water Reduction Plan outline should be prepared and presented to the Board for their conceptual approval at least one month before it may need to be adopted. Staff requires time to prepare for special procedures and the customer service and billing personnel must make program modifications to the billing system. CCWD's Board of Directors must be kept well informed of the shortage status to enable them to make timely and appropriate decisions on the following actions:

1. Declaration of water shortage emergency
2. Adoption of Emergency Water Reduction Plan
3. Frequent assessment of water shortage status
4. Adoption of resolutions to change stage as necessary
5. Coordination with municipal and industrial customers on the development and implementation of the plan

A water shortage resolution (91-11) was adopted by CCWD's Board of Directors in response to the 1991 drought. Additionally, an ordinance (09-01) establishing the 2009 Drought Management Program was adopted by the Board of Directors in response to the 2007-2009 drought. A copy of Ordinance 09-01 is provided in Appendix F, and can be used as an example of a draft water shortage contingency resolution or ordinance that may be required in the future.

Mechanism to Determine Reductions in Water Use

Demands must be monitored frequently during emergency water shortages to enable CCWD to effectively manage the balance between supply and demand. This section presents suggested CCWD practices to adequately monitor the drought status.

Normal Monitoring Procedure

In normal water supply conditions, production and pumping amounts are recorded daily. Totals are reported monthly to the Finance Department.

State I and II Water Shortages

During a Stage I or II water shortage, weekly production and pumping amounts are forwarded to the Finance Department. This department compares the weekly data to the targets to verify that the reduction goal is being met. Monthly reports are provided to CCWD's Board of Directors.

If reduction goals are not met, the General Manager will notify the Board so that corrective action can be taken.

Stage III and IV Water Shortages

During a Stage III or IV water shortage, the procedure listed above will be followed. If deemed necessary, a daily production and pumping report will be provided to the Director of Finance.

SECTION 5: Recycled Water Plan

Step One. Coordination
Step Two. Wastewater Quantity, Quality and Current Uses

> *10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:*
> *(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.*
> *(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.*
> *(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.*

CCWD coordinated the preparation of this section with the wastewater agencies that operate within its service area. 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 of recycled wastewater is currently used in CCWD's service area. CCWD completed a number of studies, demonstration projects, pilot testing programs and business plans between 1988 and 1993 to verify the feasibility of using recycled water within the CCWD service area. CCWD has agreements with CCCSD and DDSD regarding specific projects that provide recycled water supplies for industrial uses and landscape irrigation:

- Recycled Water for Landscape Irrigation (Zone 1) - Business Plan, April 1995 (prepared by CCCSD).
- Project Specific Agreement for Recycled Water between CCWD and CCCSD, November 15, 1995.
- Agreement with DDSD for purveyorship of recycled water for the DEC/LMEC power projects, April 2000.
- General Agreement for Recycled Water between CCWD and DDSD to provide recycled water to additional users who were not included in the April 2000 agreement, June 16, 2004.
- Maintenance Services Agreement between CCWD and CCCSD for recycled water facilities maintenance services, November 5, 2004.
- East Contra Costa County Regional Industrial Recycled Water Facilities Plan. Participants included CCWD, CCCSD, DDSD, Ironhouse Sanitary District, Pittsburg, Antioch, PG&E and Mirant Corporation. The purpose of the study was to evaluate the feasibility of

implementing regional industrial recycled water projects in the Pittsburg/Antioch industrial corridor.

The agreements allow for the development and operation of specific projects as well as the development of additional water recycling projects and consequent evaluation of potential alternatives to expand recycled water use.

Wastewater Collection and Treatment

The four wastewater treatment plants within CCWD's existing service area comprise the total potential sources of recycled water. A brief description is provided for each wastewater treatment plant, summarizing the existing treatment processes, current flows, and wastewater disposal methods. Figure 5-1 shows the wastewater district boundaries that operate within CCWD's service area. Table 5-1 provides a summary of these wastewater treatment plants and respective treatment levels, flows, and effluent disposal methods.

Central Contra Costa Sanitary District (CCCSD)

The CCCSD wastewater treatment plant is located at the intersection of Interstate 680 and Highway 4. The treatment plant has a current dry weather permitted capacity of 53.8 mgd with an average 39.1 mgd dry weather flow to the treatment plant. Effluent from the activated sludge secondary treatment process is disinfected with ultraviolet (UV) light and then discharged into Suisun Bay via a submerged outfall. The wastewater treatment plant does not provide nutrient removal. A portion of the UV disinfected secondary effluent is diverted to CCCSD's recycled water production plant for tertiary treatment using direct filtration followed by disinfection with sodium hypochlorite. CCCSD's recycled water conforms to Title 22 requirements for unrestricted use. CCCSD currently provides approximately 200 million gallons per year to irrigation customers within the Cities of Concord,Pleasant Hill, and Martinez and utilizes up to 400 million gallons per year for plant use.

Mt. View Sanitary District (MVSD)

The MVSD wastewater treatment plant is located near the Shell Oil Refinery and Highway 680 on unincorporated land in Contra Costa County. MVSD serves approximately 18,250 people in the City of Martinez and in adjacent unincorporated areas. Treatment processes include secondary clarification, digestion, a biofilter, sand filtration, and UV disinfection. Treated effluent from MVSD enters a constructed marshland west of I-680, flows to Peyton Slough, which then combines with surface runoff to supply a natural marshland east of I-680, before ultimately discharging to the Carquinez Strait. The plant has a dry weather permitted capacity of 3.2 mgd and currently treats an average of 2 mgd.

Delta Diablo Sanitation District (DDSD)

The DDSD wastewater treatment plant is located on the Pittsburg-Antioch Highway at the border of the two cities and provides wastewater collection services for the community of Bay Point and conveyance, treatment and disposal services for Bay Point, and the Cities of Antioch and

Pittsburg. The treatment plant has a current dry weather permitted capacity of 16.5 mgd with an ultimate capacity of 22.7 mgd. The average dry weather flow to the treatment plant is approximately 13.2 mgd. Effluent from the trickling filter/activated sludge secondary treatment process is disinfected and discharged to New York Slough, a section of the San Joaquin River (within the Delta as defined by Water Code Section 12220). A 12.8 mgd recycled water plant was completed in 2001 and provides the Delta Energy Center and Los Medanos Energy Center (DEC/LMEC) with up to 8,600 acre-feet/year of tertiary treated recycled water for cooling and process water. The facility is one of the largest industrial recycled water projects in the State of California. The 2004 General Agreement for Recycled Water between CCWD and DDSD provides for an additional 1,654 acre-feet/year of recycled water to CCWD irrigation customers located within the Cities of Pittsburg and Antioch. DDSD's recycled water conforms to Title 22 requirements for unrestricted use.

Ironhouse Sanitary District (ISD)

The ISD wastewater treatment facility is located in the City of Oakley. ISD provides sewage collection, treatment and disposal for the City of Oakley, Bethel Island and areas outside of the Oakley City limits. The treatment process consists of two parallel, two-stage aerated ponds. Treated wastewater from the aerated pond system is used to irrigate agricultural lands on ISD's "mainland" property as well as on portions of Jersey Island. The ISD treatment plant produces a non-nitrified secondary effluent meeting a 23 MPN/100 ml coliform count. Much of the treated wastewater from the ISD treatment plant has been identified in the FWSS for use outside of CCWD's current service area.

The existing wastewater treatment plant capacity is 2.7 mgd, with current flows to the plant at 2.4 mgd. ISD is constructing a new wastewater treatment plant to increase treatment and disposal capacity with planned improvements to 4.3 mgd and an ultimate capacity of 6.8 mgd. Completion of the planned improvements is expected in October 2011 and will provide a nitrified, disinfected, tertiary effluent. Effluent disposal will consist of agricultural irrigation on Jersey Island and on property adjacent to the wastewater treatment plant and discharge into the San Joaquin River. The tertiary treated wastewater can provide recycled water suitable for agricultural irrigation, landscape irrigation, and/or industrial uses, once users are identified.

TABLE 5-1. WASTEWATER COLLECTED AND TREATED					
Wastewater Agency	**Treatment Level (1,2,3)[a]**	**Wastewater Treatment Plant Capacity (AFY)**	**Average Flow (AFY)**	**Meets Recycled Water Standard (AFY)**	**Non Recycled Disposal to:[b]**
Ironhouse Sanitary District	2	3,000[c]	2,700	2,700	
Delta Diablo Sanitation District	2 & 3 [d]	18,500	14,800	14,300 [d]	New York Slough
Central Contra Costa Sanitary District [e]	2 & 3	60,300[f]	43,800	4,300[g]	Suisun Bay
Mt. View Sanitary District	2	3,600[h]	2,200		Peyton Slough; wetlands
TOTAL		85,400	68,400	21,500	

a) 1 = Primary Treatment, 2 = Secondary Treatment, 3 = Tertiary Treatment

b) CCWD is located within the statutory limits of the Sacramento-San Joaquin Delta. Drainage and wastewater from CCWD's service area is returned to the Delta or to the Suisun Bay and contributes to a portion of the fresh water flow to the Delta and Suisun Bay. Consequently, a large fraction, and at times all, of the wastewater from CCWD's service area is put to beneficial use (diversion or rediversion by others or as an increment of Delta outflow).

c) Planned 2011 improvements to 4,800 AFY (4.3 mgd) and ultimate capacity of 7,600 AFY (6.8 mgd). New treatment plant will provide tertiary treatment.

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

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

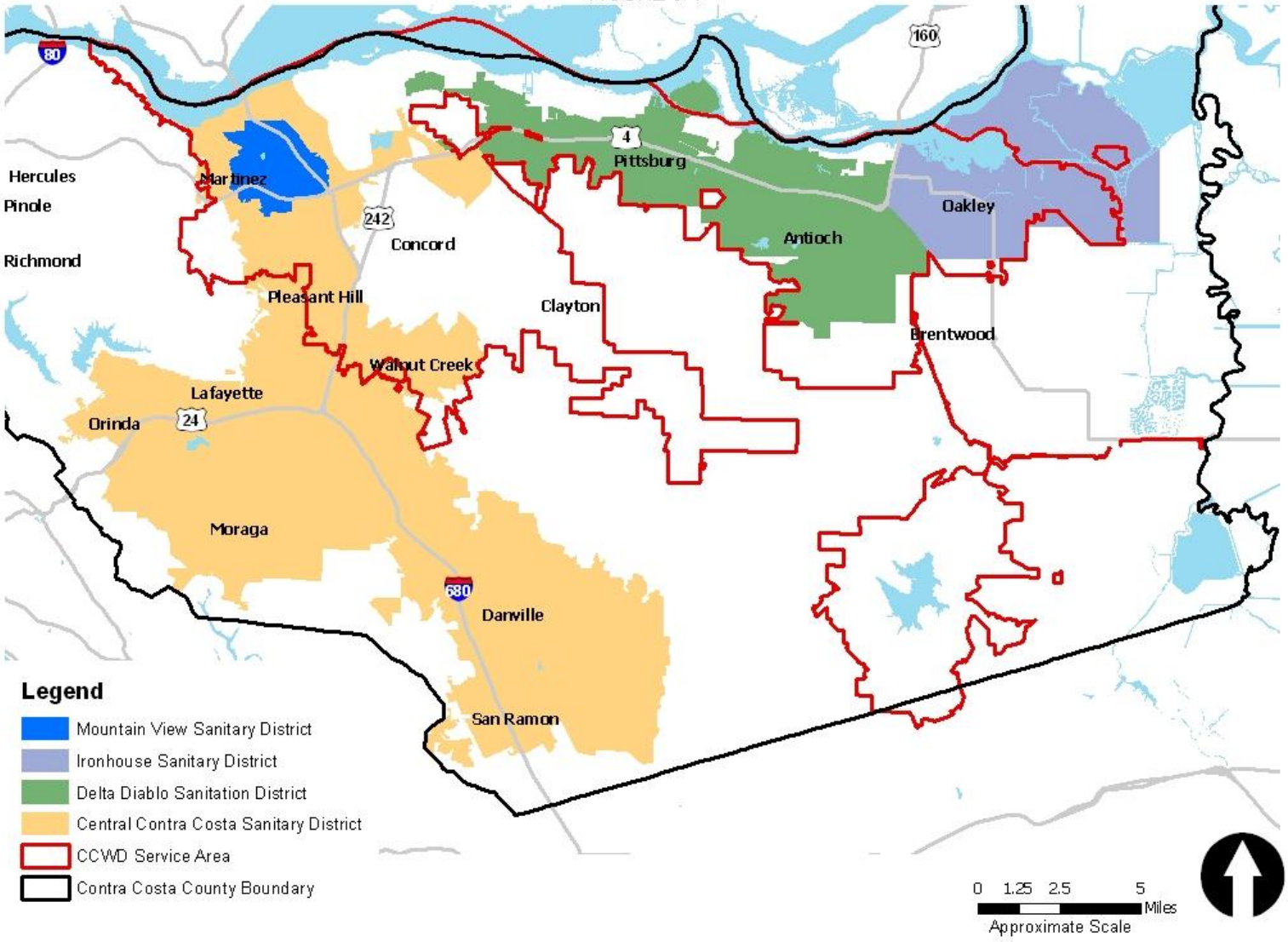
f) Based on dry weather permitted discharge capacity of 53.8 mgd.

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

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

WASTEWATER AGENCIES WITHIN CCWD SERVICE AREA

FIGURE 5-1



Current Recycled Water Use

Central Contra Costa Sanitary District

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 1.5 mgd with max day demands of 2.8 mgd. CCCSD also uses almost 400 million gallons per year (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.

Water not recycled directly by CCCSD is discharged to Suisun Bay, immediately adjacent to and hydraulically connected to the Sacramento-San Joaquin Delta, where, at times, it can provide a beneficial use as defined in the Water Code (Sections 1243-1243.5).

Mt. View Sanitary District

In 1974, MVSD constructed wetlands as a water reclamation project in response to the Clean Water Act. As plant flows increased, the original acreage of wetlands has increased to 151 acres of constructed and natural marshland providing wastewater disposal. Moorhen Marsh is a 21-acre constructed wetland and was the first on the West Coast to use treated effluent as its primary water source. McNabney Marsh (formerly known as Shell Marsh) is a 130-acre restored, seasonally tidal wetland located east of I-680. The marsh complex is an important stop over along the Pacific Flyway and a number of species use the wetlands as nesting habitat including American Avocet, Black-necked Stilt, Canada Goose, Mallard, Marsh Wren, and Ruddy Duck.

Delta Diablo Sanitation District

In 2000, DDSD and CCWD reached an agreement for DDSD to purvey recycled water to DEC/LMEC. Tertiary-treated wastewater from DDSD is used for turbine cooling and make-up 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 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 acre-feet annually.

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 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.

Water not recycled directly by DDSD is discharged to the Sacramento-San Joaquin Delta, where it is available for reuse (direct diversion, rediversion, or as a component of Delta outflow).

Ironhouse Sanitary District

All wastewater treated at ISD is being recycled via land application to agricultural lands for irrigation purposes. Plans for future wastewater disposal are to apply it for irrigation**,** discharge it to the Sacramento-San Joaquin Delta, where it is available for reuse or provide it for landscape irrigation, and/or industrial uses, once users are identified.

The quantity of recycled water currently being used is included in Table 5-3.

Step Three. Potential and Projected Use, Optimization Plan with Incentives

10633 (d-g)
(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.
(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.
(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

Potential Uses of Recycled Water

Potential opportunities identified in the CCWD FWSS include recycled water projects for agricultural irrigation, urban landscape irrigation, industrial reuse, and groundwater recharge. Most projects would require construction of water treatment and distribution facilities. Following are brief discussions of the potential uses of recycled water.

Agricultural Irrigation

ISD currently applies treated wastewater for agricultural irrigation in the vicinity of their treatment plant and on Jersey Island in the Sacramento-San Joaquin Delta. Besides the agricultural irrigation done by ISD, expansion of recycled water for agricultural irrigation use is limited in the CCWD service area due to the lack of available agricultural lands.

Urban Landscape Irrigation

These projects could supply recycled water for landscape irrigation. Potential irrigation sites include parks, schools, golf courses, median strips, business parks, and homeowner's associations. Urban landscape irrigation projects have been implemented in CCWD's service area in conjunction with DDSD and CCCSD. Additional projects could be located in Central

Contra Costa County, Pittsburg/Antioch, and East Contra Costa County. The City of Concord's Reuse Plan for the Concord Naval Weapons Station (CNWS) represents a significant opportunity to maximize the use of recycled water for urban irrigation.

Wildlife Habitat Enhancement and Wetlands

Treated wastewater from MVSD currently enters a series of marsh wetland habitats managed by MVSD. As population within the MVSD service area increases, treated effluent entering the marshland system will also increase. At build-out, average dry weather flows to MVSD are estimated to increase from 2 mgd to 3.2 mgd. Additional opportunities for wildlife enhancement and wetlands using treated wastewater are limited and have not been identified at this time.

Industrial Reuse

These projects could supply highly treated recycled wastewater to selected industrial customers for process and cooling purposes. Industries typically demand very high quality water, requiring tertiary and sometimes de-mineralized treatment. Potential customers include the Tesoro and Shell oil refineries, power plants and other manufacturing facilities. Other uses of recycled water being considered include construction dust control, sewer line cleaning, and other appropriate construction-related uses.

Groundwater Recharge and Indirect Potable Reuse

No technical or economically feasible alternatives for using recycled water for groundwater recharge and indirect potable reuse have been identified within CCWD's service area. Generally, groundwater within CCWD's service area is not suitable for municipal, industrial or irrigation uses, or has limited use potential because of water quality (including high salinity, hardness, boron concentrations and other factors). Aquifers that are used are not overdrafted and recharge regularly.

Although no specific indirect potable reuse projects have been identified, treated wastewater discharged from CCWD's service area is returned to the Delta or to Suisun Bay and provides a beneficial reuse via rediversion by others or as an increment of Delta outflow.

Table 5-2 summarizes the maximum amount of recycled water available for the potential uses described above. Table 5-3 presents the projected future use of recycled water for the technically and economically feasible uses.

TABLE 5-2. POTENTIAL USES OF RECYCLED WATER		
Agency	**Potential Recycled Water Use (AFY)[a]**	**Potential Identified Use**
CCCSD[b]	31,465	Industrial Reuse, Urban Landscape Irrigation
DDSD[c]	14,300	Industrial Reuse, Urban Landscape Irrigation
ISD[d]	7,600	Industrial Reuse, Urban Landscape Irrigation
MVSD[e]	3,580	Wildlife Habitat Enhancement & Wetlands

a) Maximum estimated amount of recycled water that could reasonably be developed. Estimates include current use.
b) Estimate based on CCCSD's Table 2-1 of the 2000 CCCSD Recycled Water Master Plan (28,665 AFY), in addition to CNWS implementation (2,800 AFY).
c) Estimated based on DDSD's full utilization of its 12.8 mgd recycled water facility. DDSD is currently seeking approval to increase permitted capacity to 16.4 mgd.
d) ISD is in the process of expanding treatment and disposal capacity to 4.3 mgd (4,800 AFY) with an ultimate capacity of 6.8 mgd (7,600 AFY).
e) Future flows based on 3.2 mgd (3,580 AFY) average dry weather flows at build-out condition.

TABLE 5-3. ACTUAL AND PROJECTED FUTURE USE OF RECYCLED WATER									
Recycled Water Use	**2000 Projection for 2005 (AFY)**	**2005 Actual (AFY)**	**2005 Projection for 2010 (AFY)**	**2010 Actual (AFY)**	**2015 (AFY)**	**2020 (AFY)**	**2025 (AFY)**	**2030 (AFY)**	**2035 (AFY_**
Irrigation[a]	1,710	700	Up to 3,360	920	1,410	1,900	2,390	2,880	3,360
Industrial[b]	Up to 12,300	7,920	Up to 9,720	7,050	7,580	8,110	8,640	9,170	9,800
Wildlife Habitat Enhancement & Wetlands[c]	Not Available	Not Available	Not Available	2,240	2,510	2,780	3,050	3,320	3,590
Concord Naval Weapons Station[d]				--	--	500	1,300	2,100	2,800
Total	Up to 14,000	8,620	Up to 13,080	10,210	11,500	13,290	15,380	17,470	19,550

a) CCCSD's Pleasant Hill Project Agreement (1,630 AFY), DDSD's LMEC/DEC Project Agreement (80 AFY) and DDSD/CCWD General Agreement (1,650 AFY). Year 2035 assumes full implementation of these agreements.
b) DDSD's 12.8 mgd water recycling plant provides recycled water to the DEC/LMEC power plants. The power plants are estimated to use up to 8,600 AFY. Industrial use includes 1,200 AFY of CCCSD plant use.
c) Future flows based on 3.2 mgd average dry weather flows at build-out condition (2035).
d) Concord Naval Weapons Station, Water Supply Assessment, June 2010.

Encouraging Recycled Water Use

Authority for the Recycled Water Program was established by the adoption of the Contra Costa Water District Strategic Plan by the Board of Directors in February 1989. In addressing issues regarding development of new markets, the Board adopted a policy statement to develop a market for recycled water in Central and East County. Subsequently, the Board adopted Resolution No. 90-79 declaring certain policies in regard to recycled water that included:

"CCWD will implement recycled water projects which are financially viable, provide beneficial use and are consistent with appropriate legal, public health and environmental requirements."

On November 2, 1994, CCCSD and CCWD and on June 16, 2004, DDSD and CCWD executed general recycled water agreements whereby both districts can develop a joint project or, each district can develop its own individual project(s) by cooperating with the other agency in planning, design, and construction activities. The agreements are intended to address and resolve legal issues, namely duplication of service, arising from the purveying of recycled water by a sanitation district in CCWD's service area. In 2009 CCCSD terminated the General Agreement between CCWD and CCCSD that was adopted in 1994 and amended in 2004. CCWD will continue to evaluate proposed CCCSD recycled water projects on a case-by-case basis. CCWD is collaborating with CCCSD and the City of Concord to maximize the use of recycled water for the development of the former Concord Naval Weapons Station.

Regional Planning

CCWD is a member of the East Contra Costa County Integrated Regional Water Management (IRWM) group that includes DDSD and ISD. CCWD provides a leadership role in the IRWM group by coordinating grant applications and administration. CCWD currently administers the Proposition 50 IRWM grant from the State Water Resources Control Board that includes a total of $1.8 M in funding towards two recycled water projects in DDSD's service area (in Antioch and Pittsburg). In the latest round of Proposition 84 grant funding opportunities from the California Department of Water Resources, CCWD, on behalf of the East Contra Costa County IRWM group, is pursuing an additional $2.1 M in grant funding for recycled water projects, including a landscape irrigation project within the City of Pittsburg using recycled water from DDSD and extension of recycled water service within the City of Brentwood.

Incentives

For the past two years, the District has provided customers with 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. Currently there are more than ten local car wash establishments participating in the Smart-Wash Car Wash Coupon Program. In addition, the District provides rebates to encourage commercial car wash establishments to install recycling systems. Rebates are determined on a case-by-case basis.

Future Development

The City of Concord Community Reuse Plan (Reuse Plan) proposes to redevelop approximately 5,000 acres of the Concord Naval Weapons Station, 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. There are also opportunities to provide up to an additional 3,000 acre-feet annually of recycled water if the planned open spaces and parks are irrigated. CCWD will continue to work collaboratively with municipalities in the CCWD service area to encourage recycled water use in future development projects.

The projected results from the above actions will continue to increase the use of recycled water within the CCWD service area, as indicated in Table 5-3.

Recycled Water Optimization Plan

CCWD fully supports cost-effective conservation and recycled water projects and believes that recycling is an essential water management strategy to help sustainably secure the state's water future. However, the benefits derived from recycling projects vary by region and depend on many factors that need to be carefully considered. CCWD is located within the statutory limits of the Sacramento-San Joaquin Delta, or immediately adjacent thereto and conveniently served with water there from. Drainage and wastewater from CCWD's service area is returned to the Delta or to the Suisun Bay. Consequently, a large fraction, and at times all, of the wastewater from CCWD's service area is put to beneficial use (rediversion by others or as an increment of Delta outflow). As such, recycling wastewater within CCWD, while improving water use efficiency, does not provide a one-to-one statewide benefit in water supply as would recycling water of Delta origin that would otherwise be discharged to the ocean or a salt sink.

Greenhouse gas (GHG) emissions provides another example of how the benefits derived from a recycled water project can vary substantially depending on the location of the project and whether recycled water replaces untreated or treated (potable) water supplies. The Global Warming Solutions Act of 2006 (AB32) requires the California Air Resources Board to develop regulations and market mechanisms to reduce California's GHG emissions to 1990 levels by 2020, representing a 25% reduction statewide, with mandatory caps beginning in 2012 for significant emissions sources. Water recycling can reduce GHG emissions in locations that import water supplies over a long distance with high lifts using significant amounts of energy to run pumps (for example, from the Delta to Southern California); however recycling locally in close vicinity to the Delta can increase GHG emissions compared to surface water diversions in some cases. For example, recycled water can be more energy intensive than untreated surface water for industrial applications that require additional treatment of recycled water, such as nitrification and reverse osmosis. Substituting recycled water for untreated surface water may result in greater overall GHG emissions. Some industrial processes are particularly sensitive to

water quality, and use of recycled water compared to surface water can increase overall water use and further increase GHG emissions. Given these constraints, CCWD encourages water conservation for untreated water customers, which results in multiple benefits of water and energy savings and reduced GHG emissions for the water utility, the customer, and the wastewater utility. For example, CCWD is partnering with local refineries to identify and implement conservation and efficiency projects that accomplish a combined objective of water, energy and wastewater reduction. The initial efforts focus on local refineries and developing projects to optimize boilerfeed and cooling tower systems. These projects will directly reduce water demand and energy use and eliminate the need to provide an alternative water source.

CCWD coordinates with local wastewater agencies to develop future reclaimed water projects and project specific agreements. Due primarily to high initial costs, potential GHG implications, and lack of water supply benefit in times of shortage, CCWD has not developed permanent recycled water projects. Given these constraints and the statewide goals for reduction in water use and GHG emissions, CCWD encourages conservation for existing customers and optimization of recycled water for new development where recycled water offsets potable water demands. The planned development of the Concord Naval Weapons Station presents the most significant opportunity for a well-designed, fully integrated and cost-effective recycled-water use within CCWD's service area.

When evaluated over time and in the context of costs and benefits of other water supplies, these parameters may change. The FWSS provides the analysis necessary to determine when different types of reclaimed water projects may become viable alternatives. Potential recycled water projects identified in the FWSS will continue to be re-examined as a potential source when the FWSS is updated (approximately every five years), or as new technology becomes available.

Dual Distribution Systems

The installation of dual distribution system piping during construction of new development is a means to minimize the costs of recycled water projects. On March 27, 1991, the Contra Costa County Board of Supervisors passed a "Dual Water Systems" Ordinance providing procedures for

> *"county cooperation with public water and wastewater agencies within the County's unincorporated area in the development of projects to incorporate dual water systems whenever feasible and consistent with applicable legal, public health, safety and environmental requirements."*

CCWD coordinated with the City of Concord to prepare the CNWS Reuse Plan, which will incorporate a dual distribution system to facilitate future recycled water use.

SECTION 6: Water Quality Impacts on Reliability

> *10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.*

The quality of water in the Delta, the District's sole source of water, continues to deteriorate despite efforts to improve it. Delta water quality problems are being compounded by increased water use and greater wastewater, storm water and agricultural discharges from statewide development and growth. A number of projects and programs are being developed, or are in place, to address Delta water quality degradation at the statewide level and through local and regional projects. In order to continue to provide high quality water for its customers and meet increasingly stringent drinking water quality standards, the District has initiated or is participating in a number of water quality improvement projects.

CCWD completed the Middle River Intake (Alternative Intake Project) to relocate some of its pumping to a new drinking water intake in the Delta. Because water quality varies widely throughout the Delta, the new intake located further east allows CCWD to divert water of higher quality during dry periods, including droughts. The intake provides CCWD with the flexibility to divert higher quality water from the Delta without increasing the amount of water pumped. The project began operation in July 2010.

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.

In January 2004, CCWD and EBMUD entered into an agreement to wheel water through the Freeport Regional Water Project facilities. In 2007, the EBMUD-CCWD untreated water interconnection was completed, which connected CCWD's Los Vaqueros Pipeline and the EBMUD's Mokelumne Aqueduct in Brentwood. The intertie enables CCWD to divert up to 3,200 acre-feet per year of its CVP supply at the Freeport diversion facility where water quality is better than at CCWD's Delta Intakes. The new intertie also provides for the sharing of water supplies between the agencies during emergency conditions or to support planned maintenance.

In March 2004, the District's 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 the District 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 by early 2012. The project will immediately improve water quality and water supply reliability for the District's customers while providing a net environmental benefit to the Delta.

Also in early 2004, CCWD formed a regional partnership with local water agencies to begin a research project on advanced water treatment processes. The Advanced Treatment Demonstration Project included a full-scale application of new technologies as applied to source water from the Sacramento-San Joaquin Delta. The research examined methods to produce safer drinking water with new and existing disinfectants and advanced filtration. A second phase of the Advanced Treatment Study was initiated to improve understanding of Delta source water quality with respect to levels of various contaminants including endocrine disrupting compounds and pharmaceuticals, and to quantitatively assess removal effectiveness of existing and advanced treatment processes (membrane filtration and chemical addition). The results of the study will be documented in a report scheduled for completion in late 2011.

Water quality impacts to the District's supply reliability have been considered in the development of projected supplies in Section 2.

SECTION 7: Water Service Reliability

Step One. Projected Normal Water Year Supply and Demand
Step Two. Projected Single-Dry-Year Supply and Demand Comparison
Step Three. Projected Multiple-Dry-Year Supply and Demand Comparison

> *10635 (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from the state, regional, or local agency population projections within the service area of the urban water supplier.*
> *(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.*
> *(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.*
> *(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.*

Table 7-1 compares the available supply with projected demands to determine the conditions under which supply deficits are expected to occur over the next 25 years. The District does not anticipate any supply deficits in normal years due to the District's long-term conservation program, existing CVP contract supply, and long-term water transfer agreement with ECCID. In future years, multiple-year drought conditions may result in supply shortfalls of up to approximately 30,000 acre-feet (15% of demand). The water supply reliability goal adopted by the District's Board of Directors is to meet 100 percent of demand in normal years and a minimum of 85 percent of demand during a drought. Any potential supply shortfalls experienced during a drought will be met through a combination of a short-term conservation program or short-term water purchases.

As shown in Table 7-1, CCWD's currently available and planned supplies are sufficient to meet the District's reliability goal and estimated water demands during normal, single dry and multiple dry years during the next 25 years.

TABLE 7-1. PROJECTED SUPPLY AND DEMAND COMPARISON						
Condition [a]	**TOTAL CCWD Demand (af/yr)**	**NET CCWD Demand (af/yr)**	**Adjusted Available Supply (af/yr)**	**Planned Purchases (af/yr)**	**Supply Deficit (af/yr)**	**% of Demand**
Near-Term						
Normal	162,500	146,100	198,500	-	-	0%
Single-Year Drought	162,500	146,100	150,500	-	-	0%
Multi-Year Drought (yr 1)	162,500	146,100	167,500	-	-	0%
Multi-Year Drought (yr 2)	162,500	146,100	150,500	-	-	0%
Multi-Year Drought (yr 3)	162,500	146,100	133,500	-	12,600	9%
2015						
Normal	177,100	155,600	212,600	-	-	0%
Single-Year Drought	177,100	155,600	161,350	-	-	0%
Multi-Year Drought (yr 1)	177,100	155,600	179,650	-	-	0%
Multi-Year Drought (yr 2)	177,100	155,600	161,350	-	-	0%
Multi-Year Drought (yr 3)	177,100	155,600	143,050	-	12,550	8%
2020						
Normal	191,500	162,800	222,200	-	-	0%
Single-Year Drought	191,500	162,800	168,825	-	-	0%
Multi-Year Drought (yr 1)	191,500	162,800	187,975	-	-	0%
Multi-Year Drought (yr 2)	191,500	162,800	168,825	-	-	0%
Multi-Year Drought (yr 3)	191,500	162,800	149,675	-	13,125	8%
2025						
Normal	203,400	173,100	225,700	-	-	0%
Single-Year Drought	203,400	173,100	171,450	-	1,650	1%
Multi-Year Drought (yr 1)	203,400	173,100	190,950	-	-	0%
Multi-Year Drought (yr 2)	203,400	173,100	171,450	-	1,650	1%
Multi-Year Drought (yr 3)	203,400	173,100	151,950	-	21,150	12%
2030						
Normal	215,500	182,200	225,700	-	-	0%
Single-Year Drought	215,500	182,200	171,450	3,100	7,650	4%
Multi-Year Drought (yr 1)	215,500	182,200	190,950	3,100	-	0%
Multi-Year Drought (yr 2)	215,500	182,200	171,450	3,100	7,650	4%
Multi-Year Drought (yr 3)	215,500	182,200	151,950	3,100	27,150	15%
2035						
Normal	223,100	187,100	225,700	-	-	0%
Single-Year Drought	223,100	187,100	171,450	7,200	8,450	5%
Multi-Year Drought (yr 1)	223,100	187,100	190,950	7,200	-	0%
Multi-Year Drought (yr 2)	223,100	187,100	171,450	7,200	8,450	5%
Multi-Year Drought (yr 3)	223,100	187,100	151,950	7,200	27,950	15%

a) Net CCWD demand and Adjusted Available Supply excludes recycled water and conservation savings.

b) Planned purchases consistent with the District's Future Water Supply Implementation Program. The water supply reliability goal adopted by the Board of Directors is to meet at least 85 percent of demand during drought conditions and 100 percent of demand in normal years. The remaining 15 percent would be met by a combination of short-term water purchases and a voluntary short-term conservation program.

SECTION 8: ADOPTION AND IMPLEMENTATION OF UWMP

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644. (a) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption.

Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

10645. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

To encourage the active involvement of diverse social, cultural, and economic elements of the population within its service area prior to and during the preparation of the UWMP, CCWD notified its service area communities that the UWMP was being updated, coordinated with its municipal wholesale customers during preparation of the UWMP, and solicited comments from the public on its draft UWMP. A description of outreach activities is provided in Section 1 of this UWMP, and copies of CCWD's notification letters are provided in Appendix B. CCWD provided copies of the draft UWMP to its municipal customers, wastewater agencies, and cities and counties within its service area in April 2011. During the public review period of May 1 through June 1, 2011, the draft UWMP was also available on CCWD's website through a link provided on the home page. CCWD conducted a public hearing on June 1, 2011 to encourage the involvement of community groups prior to completion of the UWMP. A notice detailing the time and place of the public hearing was published in the Contra Costa Times, a newspaper of general circulation, on May 1 and May 8, 2011. A copy of the public notice is provided in Appendix G.

The public hearing included a presentation of the UWMP contents and a general discussion of the urban retail water supplier's implementation plan for complying with SBX 7-7. Following the public hearing on June 1, 2011, the CCWD Board of Directors adopted the final UWMP. A signed copy of the resolution is provided in Appendix F. The final UWMP is to be submitted to DWR and other agencies involved in the preparation of the UWMP within 30 days following adoption and CCWD will make the UWMP available for public review within 30 days of filing the UWMP with DWR. CCWD will implement its UWMP in accordance with the schedule described herein.

SECTION 9: THE WATER CONSERVATION BILL OF 2009 (SB X7-7)

> *10608.20(e) Include the baseline daily per capita water use, urban water use target, interim water use target, and compliance daily per capita water use. Provide basis for determination and supporting data references.*
> *10608.20(h)(2) An urban retail water supplier shall use the methods developed by the department in compliance [with methodologies and criteria developed by DWR]*
> *10608.36 Wholesale suppliers will provide an assessment of their present and proposed future measures, programs, and policies to achieve water use reduction required in SBX7 7.*

Beginning with the 2010 UWMPs, the Water Conservation Bill of 2009, Senate Billx7-7 (SBx7-7), requires each urban retail water supplier to include the following in its UWMP:

- Baseline daily per capita water use – how much water is used within an urban water supplier's distribution system area on a per capita basis. It is determined using water use and population estimates from a defined range of years.

- Urban water use target – how much water is planned to be delivered in 2020 to each resident within an urban water supplier's distribution system area, taking into account water conservation practices that currently are and plan to be implemented.

- Interim urban water use target – the planned daily per capita water use in 2015, a value halfway between the baseline daily per capita water use and the urban water use target.

In 2015 and 2020, each water supplier will determine a compliance daily per capita water use to assess progress toward meeting interim and 2020 urban water use targets. SBx7-7 allows water suppliers to update their calculation methodologies and water use target in the 2015 UWMP.

CCWD is both a retail and wholesale water supplier. This section fulfills the SBx7-7 requirements for CCWD's retail water service area. CCWD has also prepared a regional alliance analysis in compliance with SBx7-7 requirements, which includes its wholesale municipal customers (Cities of Antioch, Pittsburg, Martinez, Golden State Water Company, and Diablo Water District). The regional alliance analysis is provided in Appendix H of this report.

DWR's "Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan" (Guidebook) outlines four steps water suppliers must complete to meet the 2010 UWMP requirements identified in SBx7-7:

1. Determine Base Daily Per Capita Water Use
2. Determine Urban Water Use Target
3. Compare Urban Water Use Target to the 5-year Baseline
4. Determine Interim Urban Water Use Target

CCWD has completed these steps as follows.

Step 1. Determine Base Daily Per Capita Water Use

As defined in CWC Section 10608.12(b), base daily per capita water use is the average gross water use reported in gallons per capita per day (gpcd) and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water, the water supplier has the option to extend the base period up to an additional five years to a maximum continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010. CCWD meets this requirement for its retail water service area, but has opted to use a 10-year period for the baseline calculation.

The gross water use is defined in CWC Section 10608.12(g) as the total volume of water entering the distribution system excluding recycled water. CCWD's gross water use for its retail water service area was determined as the amount entering the treated water distribution system on behalf of the retail treated water customers. The metered water use only includes treated water from CCWD, therefore recycled water is already excluded.

To calculate per capita water use, CCWD developed service area population estimates according to guidance provided in Section M of DWR's Guidebook, "Water Conservation Bill of 2009 Technical Methodologies." .

CCWD utilized its GIS database and the following sources to calculate population data:

- Available U.S. Census Bureau (Census) data from 1990 and 2000
- Data published by the California Department of Finance (DOF) for non-census years

CCWD's total service area includes areas served by wholesale deliveries from CCWD. The SBx7-7 evaluation is based on an analysis of CCWD's retail treated water service area only. CCWD's retail service area boundaries do not exactly match City boundaries. Therefore, CCWD developed a proportional area approach to incorporate DOF population estimates for the cities and unincorporated areas within the CCWD retail service area. CCWD's retail service area includes the cities of Clayton, Clyde, Concord, Pacheco, Port Costa, and portions of Martinez, Pleasant Hill, and Walnut Creek. The CCWD distribution area does not include large institutions with wholly private water systems, therefore no subtractions were made for this category. A map showing CCWD's retail treated water service area is provided as Figure 2-1.

CCWD's gross water use and population estimates for the 10-year base period of 1999 to 2008 are presented in Table 9-1. The base daily per capita water use is calculated to be 183 gpcd.

TABLE 9-1. BASE DAILY PER CAPITA WATER USE CCWD RETAIL TREATED WATER SERVICE AREA				
Base period year		Distribution System Population	Gross water use (acre-feet)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	1999	190,576	37,770	177
Year 2	2000	191,610	38,700	180
Year 3	2001	192,103	41,340	192
Year 4	2002	195,955	39,540	180
Year 5	2003	196,340	39,810	181
Year 6	2004	196,909	41,620	189
Year 7	2005	196,482	39,540	180
Year 8	2006	194,744	39,920	183
Year 9	2007	194,088	41,070	189
Year 10	2008	195,435	39,710	181
			Base Daily Per Capita Water Use	183

Step 2. Determine Urban Water Use Target

The CWC Section 10608.20(b) provides four methods for calculating the 2020 water use target. Three of the methods are detailed in the CWC. The fourth method was developed by DWR. The following is a summary of the methods along with CCWD's preliminary evaluation of each method:

- Method 1 – Eighty percent of the water supplier's baseline per capita daily water use. This is a straightforward method that yields an urban water use target of 146 gpcd based on CCWD's baseline per capita daily water use determined in Step 1 of this section. For this UWMP, CCWD has utilized this method to set its 2015 interim and 2020 urban water use targets.
- Method 2 – Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscape area water use, and commercial, industrial, and institutional uses. This method requires the use of satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped area. CCWD plans to utilize its GIS database and existing software to evaluate this method in the future.
- Method 3 – Ninety-five percent of the applicable state hydrologic region target as set forth in the state's 20x2020 Water Conservation Plan. CCWD's retail treated water service area falls in the San Francisco Bay hydrologic region, which includes the city of San Francisco, a densely populated area with relatively low landscape irrigation needs and a cooler climate than CCWD's treated water service area. As shown in Figure F-1 of DWR's Guidebook, the urban water use target for the San Francisco Bay hydrologic region is 131 gpcd. This target would require a reduction of more than 28% from CCWD's baseline per capita daily water use.

- Method 4 – Provisional "Water Savings" method developed by DWR and described in Appendix C of DWR's Guidebook. For this method, water savings are achieved by implementing water conservation measures in three water use sectors (indoor residential, CII, and landscape area). The urban water use target is set by subtracting the determined total water savings from the base per capita daily water use. Currently, Method 4 is provisional and will be updated by DWR by December 31, 2014. CCWD will evaluate this method once it is finalized.

Based on a preliminary evaluation of the four methods, CCWD utilized Method 1 to set its 2015 interim and 2020 urban water use targets. CCWD will update its analysis and potentially use an alternative method in its 2015 UWMP. Table 9-2 presents the urban water use target calculation using Method 1.

TABLE 9-2. WATER USE TARGET CALCULATION – METHOD 1
CCWD RETAIL TREATED WATER SERVICE AREA

Required Data	Gallons per capita per day (gpcd)
Baseline Daily per Capita Water Use [(a)]	183
Urban Water Use Target Method 1: 80% of Baseline	146

a) See Table 9-1 for 10-year base daily per capita water use calculation.

Step 3. Compare Urban Water Use Target to the 5-year Baseline

As described in CWC Section 10608.22, water agencies must achieve a minimum daily per capita use reduction of 5 percent of base daily per capita water use, calculated using a five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

Table 9-3 presents CCWD's 5-year base daily per capita water use, which is calculated to be 184 gpcd for the 5-year base period of 2003 to 2007. Methodologies for calculating gross water use and service area population are described in Step 1 of this section.

TABLE 9-3. 5-YEAR BASE DAILY PER CAPITA WATER USE
CCWD RETAIL TREATED WATER SERVICE AREA

Base period year		Distribution System Population	Daily system gross water use (acre-feet)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	2003	196,340	39,810	181
Year 2	2004	196,909	41,620	189
Year 3	2005	196,482	39,540	180
Year 4	2006	194,744	39,920	183
Year 5	2007	194,088	41,070	189
			Base Daily Per Capita Water Use	184

Table 9-4 provides a comparison of the urban water use target to the 5-year baseline target. CCWD is required to use the lesser of the two values as its 2020 urban water use target. Therefore, CCWD's 2020 water use target is 146 gpcd.

TABLE 9-4. WATER USE TARGET CALCULATION
CCWD RETAIL TREATED WATER SERVICE AREA

Required Data	Gallons per capita per day (gpcd)
Baseline Daily per Capita Water Use [a]	183
Comparison of Method 1 target to 5-year baseline target	
Method 1: 80% of Baseline	146
95% of Base Daily per Capita Water Use using 5-year Average [b]	175
Actual 2020 Water Use Target [c]	146
2015 Interim Water Use Target [d]	165

a) See Table 9-1 for 10-year baseline calculation.
b) See Table 9-3 for 5-year baseline calculation.
c) The water use target is the lesser of Method 1 or 95% of the 5-year baseline daily per capita water use.
d) Interim water use target is defined as halfway between 10-year baseline and 2020 water use target.

Step 4. Determine Interim Urban Water Use Target

The interim urban water use target is defined in the CWC Section 10608.12 (j) as the midpoint between the base daily per capita water use and the urban water use target for 2020. As presented in Table 9-4, the 2015 interim water use target is calculated to be 165 gpcd.

Present and Proposed Future Measures, Programs, and Policies to Achieve Water Use Reduction Required in SBx7-7

CCWD has already made significant progress toward meeting its urban water use target as a result of customers' response to recent drought conditions and the current economic downturn. In 2009, CCWD implemented a Drought Management Program that was in effect from May 1, 2009 through April 30, 2010. CCWD's daily per capita water use for its retail treated water service area in 2010 was approximately 136 gpcd, which is lower than the 2020 urban water use target.

To encourage water savings by its customers, CCWD will continue to implement its Water Conservation Program that has been active for over 20 years. CCWD's Water Conservation Program is designed to reduce long-term water demand in conformance with the District's FWSS. Total savings resulting from active and passive conservation activities are estimated to be over 21,000 acre-feet by 2035. The Conservation Program played a key role in helping customers meet their reduction goals for the 2009 DMP and will be an important tool for the District in meeting its 2020 urban water use target.

The following is a summary of key Conservation Program elements, which are described in more detail in Section 7 of this UWMP. These programs are offered by CCWD to both its retail and wholesale service area customers.

- Conservation surveys for single-family, multi-family, CII, and large landscape customers
- Conservation incentives including shower timers, restaurant table tents, smart car wash coupons, and money-saving mulch coupons
- Conservation rebates for high-efficiency toilets, high-efficiency clothes washers, smart sprinkler timers, sprinkler and nozzle retrofits, drip retrofits, and pilot water-efficient landscapes
- Education and outreach programs including flyers on how to read your meter, lawn and landscape watering schedule, and school education programs

In addition to active conservation activities implemented through CCWD's Conservation Program, passive conservation is also achieved through state and local efficiency codes. Efficiency codes that require efficient fixtures and appliances, grant funding to promote water conservation, residential weather-based irrigation controllers, and efficient landscape practices are expected to achieve additional water use reductions in CCWD's treated water service area
Future recycled water projects within CCWD's service area will also contribute towards achieving water use reduction goals. Potential opportunities include recycled water projects for agricultural irrigation, urban landscape irrigation, industrial reuse, and groundwater recharge. Section 5 of this UWMP includes a more detailed discussion of current and future recycled water opportunities, and Table 5-3 provides projected future use of recycled water in the CCWD service area. It is anticipated that by the year 2035, recycled water use will be approximately 14,800 AFY in CCWD's service area.

CCWD will continue to work collaboratively with municipalities in the CCWD service area to encourage recycled water use in future development projects. For example, the City of Concord Community Reuse Plan (Reuse Plan) proposes to redevelop approximately 5,000 acres of the Concord Naval Weapons Station, 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. There are also opportunities to provide up to an additional 3,000 acre-feet annually of recycled water if the planned open spaces and parks are irrigated.

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Appendix A

References

Appendix A – References

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Appendix B

Letters to Municipal Customers and Service Area Communities

Appendix B

Mailing List for UWMP Notifications

Municipal Customers

Mr. Mike Yeraka
General Manager
Diablo Water District
2107 Main Street
Oakley, CA 94561

Mr. Phil Harrington, Director
City of Antioch
Public Works Department
212 H Street, P.O. Box 5007
Antioch, CA 94509

Mr. Walter Pease
Director of Water Utilities
65 Civic Avenue
Pittsburg, CA 94565

Mr. Paul Schubert
District Manager
Golden State Water Company
3035 Prospect Park, Suite 60
Rancho Cordova, CA 95670

Mr. Alan Pellegrini
Water Superintendent
City of Martinez
525 Henrietta Street
Martinez, CA 94553

Cities and Communities

Ms. Catherine Kutsuris
Contra Costa County Development Department
651 Pine Street, 4th Floor, North Wing
Martinez, CA 94553

Ms. Danea Gemmell
City of Concord
1950 Parkside Drive
Concord, CA 94519

Mr. David Woltering
City of Clayton
Community Development Department
6000 Heritage Trail
Clayton, CA 94517

Ms. Rebecca Willis
City of Oakley
Community Development Department
3231 Main Street
Oakley, CA 94561

Cities and Communities (cont'd.)

Ms. Sandra Meyer
City of Walnut Creek
Community Development Department
1666 North Main Street
Walnut Creek, CA 94596

Mr. Steve Wallace
Community Development Department
City of Pleasant Hill
100 Gregory Lane
Pleasant Hill, CA 94523

Mr. Terry Blount
City of Martinez
Community Development Department
525 Henrietta Street
Martinez, CA 94553

Mr. Eric Brennan
Water Operations Manager
City of Brentwood
104 Oak Street
Brentwood, CA 94513

Other Agencies

Ms. Ann Farrell
Director of Engineering
Central Contra Costa Sanitary District
5019 Imhoff Place
Martinez, CA 94553-4392

Ms. Caroline Quinn
Engineering Services Director
Delta Diablo Sanitation District
2500 Pittsburg-Antioch Highway
Antioch, CA 94509-13732

Mr. Michael D. Roe
District Manager
Mt. View Sanitary District
P.O. Box 2757
Martinez CA, 94553

Mr. Tom Williams
General Manager
Ironhouse Sanitary District
450 Walnut Meadows Drive
Oakley, CA 94561

Ms. Priyanka K. Jain
Senior Civil Engineer
East Bay Municipal Utility District
375 Eleventh Street
Oakland, CA 94607

510252

CONTRA COSTA
WATER DISTRICT

1331 Concord Avenue
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(925) 688-8000 FAX (925) 688-8122
www.ccwater.com

June 22, 2010

Mr. Phil Harrington
Director of Public Works
City of Antioch
Public Works Department
212 H Street, P.O. Box 5007
Antioch, CA 94509

Subject: 2010 Urban Water Management Plan Update

Dear Mr. Harrington:

The California Urban Water Management Planning Act (California Water Code Division 6, Part 2.6, Sections 10610 through 10656) requires that each urban water supplier, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, shall prepare, update and adopt its urban water management plan (UWMP) at least once every five years. The next UWMP is due to the Department of Water Resources by July 1, 2011. This update will include an analysis of baseline daily per capita water use and 2020 water use target to comply with Senate Bill 7 legislation requiring urban retail water suppliers to achieve a 20% reduction in per capita use by 2020.

To prepare for the UWMP update, the Contra Costa Water District (District) would like to meet with our municipal customers to discuss upcoming work on the UWMP, ongoing water conservation activities, to coordinate future exchange of information, and discuss a regional approach to complying with the requirements of the 20% by 2020 legislation. The District will be contacting you regarding an initial meeting in July. If you prefer we contact someone else in your organization regarding the 2010 UWMP update, please let me know.

The District looks forward to working with you on the UWMP update. Please contact me at (925) 688-8310 or Kimberly Lin at (925) 688-8127 if you have any questions.

Sincerely,

Jeff Quimby

Jeff Quimby
Principal Engineer

JQ/rlr

CONTRA COSTA
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October 8, 2010

Ms. Catherine Kutsuris
Contra Costa County Development Department
651 Pine Street, 4th Floor, North Wing
Martinez, CA 94553

Subject: Urban Water Management Plan Update

Existing state law requires each urban water supplier to prepare and adopt an urban water management plan at least once every 5 years. The Contra Costa Water District (District) is currently preparing an update to its Urban Water Management Plan (UWMP), which was last adopted in December 2005. A copy of the 2005 UWMP is available at the District's website (http://www.ccwater.com/files/UWMP05.pdf). The UWMP documents the District's plans to ensure adequate water supplies to meet existing and future demands for water under a range of water supply conditions, including water shortages.

In conformance with California Water Code Division 6, Part 2.6, Section 10621, the District is notifying any city or county within which the District provides water supplies that the UWMP is being reviewed and updated. A copy of the draft plan will be provided to all wholesale municipal customers of the District and city and county planning departments in April 2011. The final plan will be submitted to the California Department of Water Resources by July 1, 2011.

Please contact me at (925) 688-8310 if you have any questions about the District's Urban Water Management Plan update.

Sincerely,

Jeff Quimby

Jeff Quimby
Principal Engineer

File: Project #510252

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October 8, 2010

Ms. Ann Farrell
Director of Engineering
Central Contra Costa Sanitary District
5019 Imhoff Place
Martinez, CA 94553-4392

Subject: Urban Water Management Plan Update

Existing state law requires each urban water supplier to prepare and adopt an urban water management plan at least once every 5 years. The Contra Costa Water District (District) is currently preparing an update to its Urban Water Management Plan (UWMP), which was last adopted in December 2005. A copy of the 2005 UWMP is available on the District's website (http://www.ccwater.com/files/UWMP05.pdf). The UWMP documents the District's plans to ensure adequate water supplies to meet existing and future demands for water under a range of water supply conditions, including water shortages.

The UWMP will include a description of the wastewater collection and treatment systems in the District's service area, recycled water currently being used, quantification of the potential uses of recycled water, and the projected use of recycled water in the District's service area.

A draft of the District's UWMP will be provided to you for review in April 2011. The final UWMP will be submitted to the California Department of Water Resources by July 1, 2011.

Please contact me at (925) 688-8310 if you have any questions about the District's Urban Water Management Plan update.

Sincerely,

Jeff Quimby
Principal Engineer

File: Project #510252

CONTRA COSTA
WATER DISTRICT

1331 Concord Avenue
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February 7, 2011

Mr. Alan Pellegrini
Water Superintendent
City of Martinez
525 Henrietta Street
Martinez, CA 94553

Subject: Urban Water Management Plan – Supply Reliability Analysis and SBx7-7 Requirements

Dear Mr. Pellegrini:

The Contra Costa Water District (District) is currently preparing an update to its Urban Water Management Plan (UWMP). In conformance with California Water Code Division 5, Part 2.6, Section 10635, the District has prepared an assessment of its water supply reliability. This analysis is being provided to all wholesale municipal customers of the District for use in the preparation of their UWMPs.

Enclosed are two tables that include water supply reliability information. Table 1 presents the existing sources of supply and their expected availability under various supply conditions over the next 25 years.

Table 2 provides a comparison between projected water supply and demand over the next 25 years. The water supply reliability goal approved by the District's Board of Directors is to meet 100 percent of demand in normal years and at least 85 percent of demand during drought conditions. The remaining 15 percent would be met by a combination of short-term water purchases and a voluntary short-term conservation program.

Additionally, the District and its wholesale municipal customers are required to comply with SBx7-7, which sets a goal of achieving a 20 percent statewide reduction in urban per capita water use and requires water suppliers to report interim and 2020 water use targets in their 2010 UWMPs. Water suppliers can comply with SBx7-7 individually and/or through a regional alliance. As discussed during our meeting in July 2010, the District is preparing a "20 by 2020" analysis for our regional alliance, which consists of the District and its wholesale municipal customers (Cities of Martinez, Antioch, and Pittsburg, Diablo Water District, and Golden State Water

Company). Each agency is required to report its individual water use target in its 2010 UWMP, and include a statement that the agency is a member of the District's regional alliance. This allows the agency to comply with SBx7-7 on an individual or regional basis. The District will submit a letter to DWR stating that a regional alliance has been formed along with a list of members. We will contact you prior to sending the letter to DWR.

We will follow up this letter with a phone call to you to discuss any questions or concerns you may have about the enclosed information. If you have any questions prior to hearing from our office, please feel free to contact me at (925) 688-8310.

Sincerely,

Jeff Quimby
Principal Engineer

KL/JQ/rlr

Enclosures

TABLE 1. PROJECTED WATER SUPPLY

Condition [a]	CVP[b]	Industrial Diversions	Mallard Slough [c]	Antioch Diversions[d]	Groundwater [e]	ECCID Purchases	Los Vaqueros Supply[f]	Recycled Water	Conservation Savings [g]	Total Firm Supply
	(af/yr)	(af/yr)	(af/yr)	(af/yr)	(af/yr)	(af/yr)	(af/yr)	(af/yr)	(af/yr)	(af/yr)
Near-Term										
Normal	170,000	10,000	3,100	6,400	3,000	6,000	-	8,500	11,900	218,900
Single-Year Drought	127,500	0	0	0	3,000	10,000	10,000	8,500	11,900	170,900
Multi-Year Drought (yr 1)	144,500	0	0	0	3,000	10,000	10,000	8,500	11,900	187,900
Multi-Year Drought (yr 2)	127,500	0	0	0	3,000	10,000	10,000	8,500	11,900	170,900
Multi-Year Drought (yr 3)	110,500	0	0	0	3,000	10,000	10,000	8,500	11,900	153,900
2015										
Normal	183,000	10,000	3,100	6,400	3,000	7,100	-	10,500	14,500	237,600
Single-Year Drought	137,250	0	0	0	3,000	11,100	10,000	10,500	14,500	186,400
Multi-Year Drought (yr 1)	155,550	0	0	0	3,000	11,100	10,000	10,500	14,500	204,700
Multi-Year Drought (yr 2)	137,250	0	0	0	3,000	11,100	10,000	10,500	14,500	186,400
Multi-Year Drought (yr 3)	118,950	0	0	0	3,000	11,100	10,000	10,500	14,500	168,100
2020										
Normal	195,000	10,000	3,100	6,400	3,000	8,200	-	12,500	17,200	255,400
Single-Year Drought	146,250	0	0	0	3,000	12,200	10,000	12,500	17,200	201,200
Multi-Year Drought (yr 1)	165,750	0	0	0	3,000	12,200	10,000	12,500	17,200	220,700
Multi-Year Drought (yr 2)	146,250	0	0	0	3,000	12,200	10,000	12,500	17,200	201,200
Multi-Year Drought (yr 3)	126,750	0	0	0	3,000	12,200	10,000	12,500	17,200	181,700
2025										
Normal	195,000	10,000	3,100	6,400	3,000	8,200	-	13,300	19,500	258,500
Single-Year Drought	146,250	0	0	0	3,000	12,200	10,000	13,300	19,500	204,300
Multi-Year Drought (yr 1)	165,750	0	0	0	3,000	12,200	10,000	13,300	19,500	223,800
Multi-Year Drought (yr 2)	146,250	0	0	0	3,000	12,200	10,000	13,300	19,500	204,300
Multi-Year Drought (yr 3)	126,750	0	0	0	3,000	12,200	10,000	13,300	19,500	184,800
2030										
Normal	195,000	10,000	3,100	6,400	3,000	8,200	-	14,100	21,700	261,500
Single-Year Drought	146,250	0	0	0	3,000	12,200	10,000	14,100	21,700	207,300
Multi-Year Drought (yr 1)	165,750	0	0	0	3,000	12,200	10,000	14,100	21,700	226,800
Multi-Year Drought (yr 2)	146,250	0	0	0	3,000	12,200	10,000	14,100	21,700	207,300
Multi-Year Drought (yr 3)	126,750	0	0	0	3,000	12,200	10,000	14,100	21,700	187,800
2035										
Normal	195,000	10,000	3,100	6,400	3,000	8,200	-	14,800	23,700	264,200
Single-Year Drought	146,250	0	0	0	3,000	12,200	10,000	14,800	23,700	210,000
Multi-Year Drought (yr 1)	165,750	0	0	0	3,000	12,200	10,000	14,800	23,700	229,500
Multi-Year Drought (yr 2)	146,250	0	0	0	3,000	12,200	10,000	14,800	23,700	210,000
Multi-Year Drought (yr 3)	126,750	0	0	0	3,000	12,200	10,000	14,800	23,700	190,500

a) Basis of water year data is as follows: Normal (Average) represents a below normal or wetter year on the Sacramento River Hydrologic Region 40-30-30 Water Supply Index. Single-Year drought represents 1977 conditions. Multiple-Year drought sequence represents 1987-1992 conditions.

b) The CVP conditions used for supply planning are defined as follows: Normal is Adjusted Historical Use. Single Year Drought supply is 75 percent of Historical Use. Multi-year drought (year 1) supply is 85 percent of Historical Use. Multi-Year Drought (year 2) is 75 percent of Historical Use. Multi-Year Drought (year 3) is 65 percent of Historical Use.

c) Mallard Slough average annual diversion over 15 year period (1995 - 2009).

d) Antioch Diversions is average annual diversion over 11 year period since pumping plant improvements (1999-2009).

e) Groundwater represents production from Mallard Wells, municipal customer owned wells, and miscellaneous other wells in the District's service area.

f) Anticipated water supply reliability benefit resulting from expansion of Los Vaqueros Reservoir.

g) Anticipated conservation savings, including both active and passive conservation.

TABLE 2. PROJECTED SUPPLY AND DEMAND COMPARISON

Condition	TOTAL CCWD Demand	NET CCWD Demand[a]	Adjusted Available Supply[a]	Planned Purchases[b]	Supply Deficit	% of Demand[c]
	(af/yr)	(af/yr)	(af/yr)	(af/yr)	(af/yr)	
Near-Term						
Normal	166,460	146,060	198,500	-	-	0%
Single-Year Drought	166,460	146,060	150,500	-	-	0%
Multi-Year Drought (yr 1)	166,460	146,060	167,500	-	-	0%
Multi-Year Drought (yr 2)	166,460	146,060	150,500	-	-	0%
Multi-Year Drought (yr 3)	166,460	146,060	133,500	-	12,560	9%
2015						
Normal	180,610	155,610	212,600	-	-	0%
Single-Year Drought	180,610	155,610	161,350	-	-	0%
Multi-Year Drought (yr 1)	180,610	155,610	179,650	-	-	0%
Multi-Year Drought (yr 2)	180,610	155,610	161,350	-	-	0%
Multi-Year Drought (yr 3)	180,610	155,610	143,050	-	12,560	8%
2020						
Normal	194,550	164,850	225,700	-	-	0%
Single-Year Drought	194,550	164,850	171,450	-	-	0%
Multi-Year Drought (yr 1)	194,550	164,850	190,950	-	-	0%
Multi-Year Drought (yr 2)	194,550	164,850	171,450	-	-	0%
Multi-Year Drought (yr 3)	194,550	164,850	151,950	-	12,900	8%
2025						
Normal	206,010	173,210	225,700	-	-	0%
Single-Year Drought	206,010	173,210	171,450	-	1,760	1%
Multi-Year Drought (yr 1)	206,010	173,210	190,950	-	-	0%
Multi-Year Drought (yr 2)	206,010	173,210	171,450	-	1,760	1%
Multi-Year Drought (yr 3)	206,010	173,210	151,950	-	21,260	12%
2030						
Normal	218,160	182,360	225,700	3,100	-	0%
Single-Year Drought	218,160	182,360	171,450	3,100	7,810	4%
Multi-Year Drought (yr 1)	218,160	182,360	190,950	3,100	-	0%
Multi-Year Drought (yr 2)	218,160	182,360	171,450	3,100	7,810	4%
Multi-Year Drought (yr 3)	218,160	182,360	151,950	3,100	27,310	15%
2035						
Normal	225,890	187,390	225,700	7,300	-	0%
Single-Year Drought	225,890	187,390	171,450	7,300	8,640	5%
Multi-Year Drought (yr 1)	225,890	187,390	190,950	7,300	-	0%
Multi-Year Drought (yr 2)	225,890	187,390	171,450	7,300	8,640	5%
Multi-Year Drought (yr 3)	225,890	187,390	151,950	7,300	28,140	15%

a) Net CCWD demand and Adjusted Available Supply excludes recycled water and conservation savings.
b) Planned purchases consistent with the District's Future Water Supply Implementation Program. The water supply reliability goal adopted by the Board of Directors is to meet at least 85 percent of demand during drought conditions and 100 percent of demand in normal years. The remaining 15 percent would be met by a combination of short-term water purchases and a voluntary short-term conservation program.

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Appendix C

DWR Guidebook Table I-1 Checklist

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Table I-1 Urban Water Management Plan checklist, organized by legislation number

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)	System Demands	Retail analysis provided in Section 9. Wholesale (regional alliance) analysis provided in Appendix H.	**Section 9 and Appendix H**
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	System Demands	Retailer and wholesalers have slightly different requirements	**Wholesale – Appendix H** **Retail – Section 8-9**
3	Report progress in meeting urban water use targets using the standardized form.	10608.40	Not applicable	Standardized form not yet available	**Not applicable for 2010 UWMP**
4	Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)	Plan Preparation		**Section 1**
5	An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.	10620(f)	Water Supply Reliability		**Section 1**
6	Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.	10621(b)	Plan Preparation		**Section 1 and Appendix B**

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No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
7	The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).	10621(c)	Plan Preparation		**Section 1 and Section 8**
8	Describe the service area of the supplier	10631(a)	System Description		**Section 2, Step 2**
9	(Describe the service area) climate	10631(a)	System Description		**Section 2, Step 2**
10	(Describe the service area) current and projected population . . . The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier . . .	10631(a)	System Description	Provide the most recent population data possible. Use the method described in “Baseline Daily Per Capita Water Use.” See Section M.	**Section 2, Step 2**
11	. . . (population projections) shall be in five-year increments to 20 years or as far as data is available.	10631(a)	System Description	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	**Section 2, Step 2**
12	Describe . . . other demographic factors affecting the supplier's water management planning	10631(a)	System Description		**Section 2, Step 2**
13	Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).	10631(b)	System Supplies	The ‘existing’ water sources should be for the same year as the “current population” in line 10. 2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	**Section 2, Steps 3-4**

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No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
14	(Is) groundwater . . . identified as an existing or planned source of water available to the supplier . . .?	10631(b)	System Supplies	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	**Section 2, Steps 3-4**
15	(Provide a) copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management. Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)	System Supplies		**Not applicable to CCWD**
16	(Provide a) description of any groundwater basin or basins from which the urban water supplier pumps groundwater.	10631(b)(2)	System Supplies		**Not applicable to CCWD**
17	For those basins for which a court or the board has adjudicated the rights to pump groundwater, (provide) a copy of the order or decree adopted by the court or the board	10631(b)(2)	System Supplies		**Not applicable to CCWD**
18	(Provide) a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree.	10631(b)(2)	System Supplies		**Not applicable to CCWD**
19	For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.	10631(b)(2)	System Supplies		**Not applicable to CCWD**

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No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
20	(Provide a) detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(3)	System Supplies		**Not applicable to CCWD**
21	(Provide a) detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.	10631(b)(4)	System Supplies	Provide projections for 2015, 2020, 2025, and 2030.	**Not applicable to CCWD**
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following: (A) An average water year, (B) A single dry water year, (C) Multiple dry water years.	10631(c)(1)	Water Supply Reliability . . .		**Section 2, Steps 3 and 4**
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)	Water Supply Reliability . . .		**Section 2, Steps 3 and 4**
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)	System Supplies		**Section 2, Step 5**
25	Quantify, to the extent records are available, past and current water use, and projected water use (over the same five-year increments described in subdivision (a)), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses: (A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof;(I) Agricultural.	10631(e)(1)	System Demands	Consider “past” to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	**Section 2, Step 6**

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No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
26	(Describe and provide a schedule of implementation for) each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following: (A) Water survey programs for single-family residential and multifamily residential customers; (B) Residential plumbing retrofit; (C) System water audits, leak detection, and repair; (D) Metering with commodity rates for all new connections and retrofit of existing connections; (E) Large landscape conservation programs and incentives; (F) High-efficiency washing machine rebate programs; (G) Public information programs; (H) School education programs; (I) Conservation programs for commercial, industrial, and institutional accounts; (J) Wholesale agency programs; (K) Conservation pricing; (L) Water conservation coordinator; (M) Water waste prohibition;(N) Residential ultra-low-flush toilet replacement programs.	10631(f)(1)	DMMs	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	**Section 2, Step 7**
27	A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.	10631(f)(3)	DMMs		**Section 2, Step 7**
28	An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.	10631(f)(4)	DMMs		**Section 2, Step 7**

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No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
29	An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following: (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors; (2) Include a cost-benefit analysis, identifying total benefits and total costs; (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.	10631(g)	DMMs	See 10631(g) for additional wording.	**Section 2, Step 8**
30	(Describe) all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.	10631(h)	System Supplies		**Section 2, Step 9**
31	Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.	10631(i)	System Supplies		**Section 2, Step 10**

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No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
32	Include the annual reports submitted to meet the Section 6.2 requirement (of the MOU), if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	DMMs	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	**Section 3, Appendix D-E**
33	Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).	10631(k)	System Demands	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	**Not applicable to CCWD**
34	The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)	System Demands		**Section 2, Step 6**
35	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.	10632(a)	Water Supply Reliability . . .		**Section 4, Step 1**
36	Provide 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.	10632(b)	Water Supply Reliability . . .		**Section 4, Step 2**
37	(Identify) 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.	10632(c)	Water Supply Reliability . . .		**Section 4, Step 3**

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No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
38	(Identify) additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)	Water Supply Reliability . . .		**Section 4, Step 4**
39	(Specify) consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)	Water Supply Reliability . . .		**Section 4, Step 4**
40	(Indicated) penalties or charges for excessive use, where applicable.	10632(f)	Water Supply Reliability . . .		**Section 4, Step 4**
41	An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)	Water Supply Reliability . . .		**Section 4, Step 5**
42	(Provide) a draft water shortage contingency resolution or ordinance.	10632(h)	Water Supply Reliability . . .		**Section 4, Step 6 and Appendix F**
43	(Indicate) a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)	Water Supply Reliability . . .		**Section 4, Step 6**
44	Provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area	10633	System Supplies		**Section 5, Steps 1 and 2**
45	(Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)	System Supplies		**Section 5, Steps 1 and 2**

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No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
46	(Describe) the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)	System Supplies		**Section 5, Steps 1 and 2**
47	(Describe) the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)	System Supplies		**Section 5, Steps 1 and 2**
48	(Describe and quantify) the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)	System Supplies		**Section 5, Step 3**
49	(Describe) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.	10633(e)	System Supplies		**Section 5, Step 3**
50	(Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)	System Supplies		**Section 5, Step 3**
51	(Provide a) plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)	System Supplies		**Section 5, Step 3**
52	The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.	10634	Water Supply Reliability . . .	For years 2010, 2015, 2020, 2025, and 2030	**Section 6**

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No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
53	Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)	Water Supply Reliability . . .		**Section 7, Steps 1-3**
54	The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.	10635(b)	Plan Preparation		**Section 7, Steps 1-3**
55	Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642	Plan Preparation		**Section 1**
56	Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area.	10642	Plan Preparation		**Section 8 and Appendix G**
57	After the hearing, the plan shall be adopted as prepared or as modified after the hearing.	10642	Plan Preparation		**Section 8**
58	An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.	10643	Plan Preparation		**Section 8**

APPENDIX C

No.	UWMP requirement [a]	Calif. Water Code reference	Subject [b]	Additional clarification	UWMP location
59	An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.	10644(a)	Plan Preparation		**Section 8**
60	Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.	10645	Plan Preparation		**Section 8**

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.

Appendix D

California Urban Water Conservation Council Annual Reports

APPENDIX D

CUWCC BMP Report
FY09-10
Contra Costa Water District

The Contra Costa Water District (CCWD or District) was one of the original signatories of the California Urban Water Conservation Council's (CUWCC) Memorandum of Understanding Regarding Urban Water Conservation in California (MOU) in 1991 and has implemented a successful water conservation program ever since. As evidence of its commitment to water conservation, the District met the ten-year requirements of the Best Management Practices (BMPs) ending FY08. The BMP Coverage Report for Ten Years of Program Ending FY08 is provided as Appendix E to the 2010 UWMP.

Section E of the Department of Water Resources Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan (DWR Guidebook) states the following:

"If the new CUWCC database is not completed or ready for use at the time a supplier is to release its plan for public review, the supplier can self-certify its full compliance with the MOU. For this purpose, a supplier will self-certify full compliance by supplying all the data required for documenting BMP, Flex Track Menu, or gallons per capita per day (GPCD) consumptions implementation. The supplier will also include documentation that coverage level for each BMP or equivalent program has been met. This documentation is to be included as part of the plan when it is released for public review and as adopted by the board."

The CUWCC Reporting database was not available at the time the 2010 UWMP and BMP Report for FY09-FY10 were being prepared. Therefore, the District is providing all the data required for documenting BMPs, per the DWR Guidebook. The District has organized this report based on the requirements of each BMP.

Contra Costa Water District hereby self-certifies it is in compliance with the CUWCC MOU.

The following report presents the District's conservation activities for FY09 and FY10 and demonstrates the District is in compliance with the MOU and is meeting or exceeding each of the BMPs. The information is organized based on the traditional BMP format of Exhibit 1 (BMP Definitions, Schedules, and Requirements) of the CUWCC MOU. The CUWCC Reporting database was not available at the time this report was prepared. The District has organized this report based on the requirements of each BMP.

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BMP TABLE 1. BASE YEAR DATA CCWD RETAIL SERVICE AREA	
Base Year Information	**FY08**
Number of unmetered potable water accounts in base year*	0
Number of SF Customers in base year*	52,954
Number of MF Units in base year*	30,587
Number of SF Housing units built prior to 1992**	48,565
Number of MF housing units built prior to 1992**	29,057
Average number of toilets per SF household***	2.08
Average number of toilets per MF household***	1.38
Five year average resale rate of SF households***	3%
Five year average resale rate of MF households***	3%
Average number of persons per SF household***	2.82
Average number of persons per MF household***	2.14
Number of Commercial Accounts (treated water)*	2,740
Number of Industrial Accounts (treated water)*	5
Number of Institutional Accounts (treated water)*	212
Total water use (AF) by CII accounts (treated water)*	5,401
Number of Industrial Accounts (un-treated water)*	21
Total water use (AF) by Industrial accounts (untreated water)*	30,039
Number of dedicated irrigation accounts (treated)*	1,323
Total water use (AF) by dedicated irrigation accounts*	4,402
Estimated number of CII accounts serving both interior and irrigation****	1,208

**Data from CCWD Customer Service report from July 2008*
***Data from CCWD Customer Service report from January 1992*
****Data from CCWD Conservation Savings Model*
*****Data based on calculation sent to CUWCC via email in January 2006*

BMP TABLE 2. FY09 WATER SUPPLY SOURCES			
Supply Source Name	**FY09 Quantity Supplied (AF)**	**FY09 Water Supply Type**	**Potable or Non-Potable Source**
Central Valley Project (CVP)	86,911	Contract	Non-Potable
Mallard Slough	458	Local Water Rights	Non-Potable
Los Vaqueros Water	4,242	Local Water Rights	Non-Potable
East Contra Costa Irrigation District (ECCID)	15,683	Contract	Non-Potable

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BMP TABLE 3. FY10 WATER SUPPLY SOURCES			
Supply Source Name	**FY10 Quantity Supplied (AF)**	**FY10 Water Supply Type**	**Potable or Non-Potable Source**
Central Valley Project (CVP)	90,124	Contract	Non-Potable
Mallard Slough	1,736	Local Water Rights	Non-Potable
Los Vaqueros Water	0	Local Water Rights	Non-Potable
East Contra Costa Irrigation District (ECCID)	15,868	Contract	Non-Potable

BMP TABLE 4. FY09 RETAIL TREATED (POTABLE) WATER ACCOUNTS AND USE			
Customer Type	**FY09 Metered Services**	**FY09 Metered Water Use (AF)**	**Un-Metered Services**
SF Residential	53,079	19,258	0
MF Residential	2,509	5,660	0
Commercial	2,738	3,830	0
Industrial	4	91	0
Institutional	221	989	0
Irrigation (Residential)	507	1,440	0
Irrigation (Commercial)	402	1,474	0
Irrigation (Institutional)	397	687	0
Temporary	113	64	0
Total		**33,493**	**0**

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BMP TABLE 5. FY09 RETAIL UNTREATED (NON-POTABLE) WATER ACCOUNTS AND USE				
Customer Type	**FY09 Metered Accounts**	**FY09 Metered Use (AF)**	**FY09 Un-Metered Accounts**	**FY09 Un-Metered Use (AF)**
Landscape (flat)			319	204
Landscape Group (flat)			7	0
Landscape Meter	46	781		
Landscape Meter Group	26	418		
Industrial	21	30,158		
Agricultural	20	97		
Livestock	4	2		
Temporary	2	0		
Unsold Deliveries- UW	7	144		
Unsold Deliveries- TW	2	2,101		
Total Metered (Untreated Water)	**128**	**33,701**		
Total Un-metered (Untreated Water)			**326**	**204**

BMP TABLE 6. FY09 MUNICIPAL WHOLESALE ACCOUNTS			
Customer Type	**FY09 Metered Accounts**	**FY09 Metered Water Use (AF)**	**Un-Metered Accounts**
Municipal Untreated	7	31,580	0
Municipal Treated	7	14,642	0
Total		**46,222**	**0**

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BMP TABLE 7. FY10 RETAIL TREATED (POTABLE) WATER ACCOUNTS AND USE			
Customer Type	**FY10 Metered Services**	**FY10 Metered Water Use (AF)**	**FY10 Un-Metered Services**
SF Residential	53,040	16,252	0
MF Residential	2,509	5,180	0
Commercial	2,735	3,385	0
Industrial	4	83	0
Institutional	225	859	0
Irrigation (Residential)	509	1,028	0
Irrigation (Commercial)	401	979	0
Irrigation (Institutional)	402	447	0
Temporary	97	19	0
Total		28,232	0

BMP TABLE 8. FY10 RETAIL UNTREATED (NON-POTABLE) WATER ACCOUNTS AND USE				
Customer Type	**FY10 Metered Accounts**	**FY10 Metered Use (AF)**	**FY10 Un-Metered Accounts**	**FY10 Un-Metered Use (AF)**
Landscape (flat)			314	204
Landscape Group (flat)			7	-
Landscape Meter	46	520		
Landscape Meter Group	26	262		
Industrial	22	26,664		
Agricultural	20	18		
Livestock	4	2		
Temporary	3	2		
Unsold Deliveries- UW	0	0		
Unsold Deliveries- TW	0	0		
Total Metered (Untreated Water)	**121**	**27,916**		
Total Un-metered (Untreated Water)			**321**	**204**

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BMP TABLE 9. FY10 MUNICIPAL WHOLESALE ACCOUNTS			
Customer Type	**FY10 Metered Accounts**	**FY10 Metered Water Use (AF)**	**FY10 Un-Metered Accounts**
Municipal Untreated	6	22,488	0
Municipal Treated	7	14,031	0
Total		**36,519**	**0**

FOUNDATIONAL BMPs

1.1 Operations Practices

Coverage Requirements

1) Conservation Coordinator (DMM # L)

Staff and maintain the position of trained conservation coordinator, or equivalent consulting support, and provide that function with the necessary resources to implement BMPs.

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

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

Contact Information

Chris Dundon
Water Conservation Supervisor
925-688-8136
cdundon@ccwater.com

2) Water Waste Prevention (DMM #M)

Water Agency shall do one or more of the following:

a. Ordinance or Terms of Service prohibiting water waste
b. Ordinance or requirements for efficient new development
c. Support of legislation or regulations that prohibit water waste
d. Support of local ordinance that prohibit water waste
e. Support local ordinances that establish water efficient permit requirements for new design

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

3) Wholesale Agency Programs (DMM #J)

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Describe how the District does the following:

1.2 Financial investments
1.3 Technical support
1.4 Program management
1.5 Water shortage allocation
1.6 Non-signatory reporting
1.7 Encourage CUWCC membership

The District meets this requirement. The District 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, the District's public outreach program and school education includes the entire service area. Attachment 1 to this BMP Report presents the FY09 and FY10 conservation activities conducted in each of the District's wholesale customer service areas.

1.2 Water Loss Control (DMM #C)

Requirements for documenting:

1. Complete AWWA Standard Water Audit and Water Balance worksheets annually
2. Maintain validation for data
3. Maintain records of audit results, methods, and worksheets for each audit
4. Maintain records of component analysis
5. Maintain the following:
    a. Records of interventions, reports on leak repairs, economic value of apparent losses, real losses, miles of system surveyed, pressure reduction actions, volumes of water saved, and costs
    b. Prepare yearly summary of this info

The District meets this requirement. The AWWA Standard Water Audit and Water Balance Worksheets are provided as Attachment 2. The District is in compliance with the CUWCC MOU requirements for data validation and records maintenance.

1.3 Metering (DMM #D)

The District meets this requirement.

Does agency have any unmetered (potable) service connections? NO
Are all new service connections being metered? YES
Are all new service connections being billed volumetrically? YES
Has your agency submitted a plan and/or program to test and repair meters? YES

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FY09 RETAIL ACCOUNTS				
Account Type	**Billing Frequency (Number of times per year)**	**Number of Metered Accounts**	**Number of Metered Accounts Read**	**Number of Metered Accounts billed by Volume**
Single Family	6	53,079	53,079	53,079
Multi-Family	6	2,509	2,509	2,509
Commercial	6	2,738	2,738	2,738
Industrial	6	4	4	4
Institutional	6	211	211	211
Dedicated Irrigation	6	1,356	1,356	1,356

FY09 WHOLESALE ACCOUNTS				
Account Type	**Billing Frequency (Number of times per year)**	**Number of Metered Accounts**	**Number of Metered Accounts Read**	**Number of Metered Accounts billed by Volume**
Municipal Untreated	12	6	6	6
Municipal Treated	12	7	7	7

FY10 RETAIL ACCOUNTS				
Account Type	**Billing Frequency (Number of times per year)**	**Number of Metered Accounts**	**Number of Metered Accounts Read**	**Number of Metered Accounts billed by Volume**
Single Family	6	53,040	52,954	52,954
Multi-Family	6	2,509	2,507	2,507
Commercial	6	2,735	2,740	2,740
Industrial	6	4	5	5
Institutional	6	225	212	212
Dedicated Irrigation	6	1,312	1,323	1,323

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FY10 WHOLESALE ACCOUNTS				
Account Type	**Billing Frequency (Number of times per year)**	**Number of Metered Accounts**	**Number of Metered Accounts Read**	**Number of Metered Accounts billed by Volume**
Municipal Untreated	12	6	6	6
Municipal Treated	12	7	7	7

1.4 Retail Conservation Pricing (DMM #K)

To be in compliance with this BMP, revenue from agencies volumetric charges must be equal to or greater than 70% of the sum of the volumetric revenue + customer meter/service charge revenue.

The District meets this BMP requirement. 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. See Attachment 3.

2.1 Public Information Programs (DMM # G)

To be in compliance with this BMP, agencies shall maintain an active public information program to promote and educate customers about water conservation. At a minimum, a public information program shall consist of the following components:

1) Contacts with the public (minimum of 4 per year)
2) Contacts with media (minimum of 4 per year)
3) An actively maintained website that is updated regularly (minimum of 4 per year)
4) Description of materials used to meet minimum requirement
5) Annual budget for public outreach program
6) Description of all other outreach programs

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.

Public Outreach

Is a Wholesale Agency Performing Public Outreach? Yes, CCWD is a wholesale and retail agency. Other retailer agencies served by CCWD provide outreach.

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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 contacts during the past two years. The majority of the contacts were regarding water supply conditions, drought management plan requirements, and conservation information.

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.

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

Budget

The public outreach program is budgeted in the Public Affairs Department. The following table shows the budgets and expenditures for FY09 and FY10.

	FY09	**FY10**
Public Outreach Budget	$560,000	$420,000
Public Outreach Expenditures	$505,000	$380,000

* Public Outreach Annual Budget in FY09 included additional drought program outreach and does not include labor.

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.

2.2 School Education (DMM # H)

Agencies shall maintain an active school education program to educate students in the agency's service area about water conservation and efficient water use.

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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-8th. The program includes in-class presentations, assembly programs, water treatment plant tours, watershed programs, and other elements. The following summarizes the school education program for FY09 and FY10.

Do the materials met state requirements? YES

- Purchased materials from commercial sources and produced materials in-house including brochures, newsletters, and worksheets to support presentations.

Materials distributed to K-6 and 7-12 students: YES

- A variety of publications including: AWWA, Story of Drinking Water; DWR, California Water; Channing Bete, The Water Cycle; and other publications that support classroom presentations and water education field trips.
- FY09 number of materials distribution: 17,214
- FY10 number of materials distributed: 17,550

Materials distributed to K-6 and 7-12 students: YES

- Specific materials as requested including water quality reports, facility brochures, water testing kits, and special edition magazines.
- FY09 number of materials distributed: 90
- FY10 number of materials distributed: 190

Voluntary School Program Activities
Classroom presentations

- FY09: 464 presentations reaching 11,153 students (classroom, water treatment plant and watershed)
- FY10: 455 presentations reaching 11,949 students (classroom, water treatment plant and watershed)

Large group assemblies

- FY09: 50 presentations reaching 14,000 students
- FY10: 50 presentations reaching 14,000 students

Children's water festivals or other events

- Various community events reaching children and other community representatives

Cooperation efforts with existing science/water education programs (workshops, science fair awards or judging) and follow up:

- Coordination with local high schools to judge science fairs
- Project WET
- Environmental Science Camp

- Delta Discover Voyage
- FY09: Number of Events: 91 Attendees: 6,356
- FY10: Number of Events: 84 Attendees: 5,910

FY09 Budget for school education program: $200,600 (not including staff time)
FY10 Budget for school education program: $205,000 (not including staff time)

PROGRAMMATIC BMPS

3.0 Residential

3.1 Residential Assistance Program (DMM #A and B)

Provide leak detection assistance to an average of 1.5% per year of current single-family accounts and 1.5% per year of current multi-family units during the first ten years after signing the MOU. After completing the ten-year 15% target, agencies will maintain a program at the level of high-bill complaints or not less than 0.75% per year of current single family accounts and 0.75% per year of current multi-family units. Showerhead distribution will be considered complete when 75% market saturation is achieved.

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 E of the 2010 UWMP 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.

Activity	Annual Requirement	FY09 Retail Activities	FY10 Retail Activities	On track
SF Surveys (includes indoor and landscape)	400	739	922	Yes
SF Showerheads	0	1,515	1,291	Yes
SF Faucet Aerators	0	2,338	1,761	Yes
MF Surveys	225	494	1,259	Yes
MF Showerheads	0	2,066	1,351	Yes
MF Faucet Aerators	0	1,635	956	Yes

3.2 Landscape Water Survey (DMM A)

Provide landscape water surveys to an average of 1.5% per year of current single-family accounts during the first ten years after signing the MOU. After completing the ten-year 15% target, agencies will maintain a program at the level of high-bill complaints or no less than 0.75% per year of current single family accounts.

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 of the 2010 UWMP 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. 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 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. The FY09 and FY10 activities are listed in the table above.

3.3 Clothes Washers (DMM #F)

Provide financial incentives for the purchase of high-efficiency clothes washing machines (HECWs) that meet an average water factor value of 5.0. If the WaterSense Specification is less than 5.0, then the average water factor value will decrease to that amount. Incentives shall be provided to 0.9% of current single-family accounts during the first reporting period following BMP implementation, rising to 1.0% per year of current single family accounts for the remainder of ten year period following signing of the MOU. An alternative method is to demonstrate 1.4% per year of the market penetration during the first ten years after signing the MOU.

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 E of the 2010 UWMP 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.

Activity	Annual Requirement	FY09 Retail Activities	FY10 Retail Activities	On track
Residential HEW Rebates	477	2,027	2,246	Yes

3.4 WaterSense Specification (WSS) Toilets (DMM #N)

A financial incentive shall continue to be offered for toilets meeting the current WSS and updated standard whenever a more efficient toilet is identified by WSS. Compliance will entail demonstrating a number of toilet replacements of 3.5gpf or greater toilets at or above the level achieved through a retrofit on resale ordinance until 2014, or a market saturation of 75% is demonstrated, whichever is sooner.

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.

Activity	Annual Requirement	FY09 Retail Activities	FY10 Retail Activities	On track
SF HET Rebates	–	1755	1493	Yes
MF HET Rebates	–	234	373	Yes
Total HET Rebates	**1,728***	**1,989**	**1,866**	**Yes**

*Based on remaining high volume toilets X 3% assumed annual housing resale rate

4.0 Commercial Industrial and Institutional (DMM #I)

Agencies are required to implement measures to achieve the water savings goal for CII accounts of 10% of the baseline water use over a 10-year period. Baseline water use is defined as water consumed by CII accounts in the agency's service area in 2008. Credit for prior activities, as reported through the BMP database, will be given for up to 50% of the goal.

Agencies will be considered on track if estimated savings as a percent of baseline water use equals or exceeds the following:
0.5% by the end of the first reporting period (year two)
2.4% by the end of year four
4.3% by the end of year six
6.4% by the end of year eight
9.0% by the end of year ten
Percentages will be adjusted for up to 50% past credit

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. The following presents CCWD's CII water use during the base year and compliance year (FY10).

Customer Class	Base Year Number of Accounts	Base Year Water Use (AF)	Compliance Year Number of Accounts	Compliance Year Water Use (AF)	Compliance Year Required Reduction at 0.5% * Base (AF)	Compliance Year Achieved Reduction (AF)	Compliance Year Achieved Reduction (%)
Commercial	2,740	4,244	2,735	3,385	21	859	20%
Industrial	5	120	4	83	1	37	31%
Institutional	212	1,037	225	859	5	178	17%
Industrial (UW)	21	30,039	22	26,664	150	3,375	11%
Total		**35,440**			**177**	**4,449**	**12.5%**

*Base year = FY08, *Compliance year = FY10

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.

5.0 Landscape (DMM# E)

1. *Agencies shall develop ETo-based water use budgets for 90% of the CII accounts with dedicated irrigation meters at an average rate of 9% per year over ten years.*
2. *Agencies shall offer site-specific technical assistance annually to all accounts that are 20% over budget within six years of the date implementation was to commence.*
3. *Agencies shall complete irrigation water use surveys for not less than 15% of CII accounts with mixed use meters and un-metered accounts within ten years of the date implementation is to commence.*

   An agency will be considered on track if the percent of CII accounts with mixed-use meters receiving a landscape water use survey equals or exceeds the following: 1.5% by the end of year two; 3.6% by the end of year four; 6.3% by the end of year six; 9.6% by the end of year eight; and 13.5% by the end of year ten.

   Agencies may credit 100% of the number of landscape water use surveys for CII accounts with mixed-use meters completed prior to July 1, 2007 that have received a follow-up inspection against the coverage requirement; agencies may credit 50% of the surveys that have not received follow-up inspections. Agencies may credit 100% of the number of landscape water use surveys completed for CII accounts with mixed-use meters after July 1, 2007 against the coverage requirement.
4. *Agencies shall implement and maintain a customer incentive program for irrigation equipment retrofits.*

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 E of the 2010 UWMP 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.

Activity	Annual Requirement	FY09 Retail Activities	FY10 Retail Activities	On track
Landscape Surveys at Mixed Use	18	5	10	Yes
Landscape Surveys at Dedicated Irrigation	-	9	47	Yes
CII Smart Irrigation Timer Rebates	-	73 Rebates operating 828 stations	68 Rebates operating 1,031 stations	Yes
Drip Retrofit	-	92 irrigation stations	99 irrigation stations	Yes
Efficient Sprinkler Heads	-	789 old sprinkler heads replaced with efficient heads	1,483 sprinkler heads replaced with efficient heads	Yes
Efficient Sprinkler Nozzles	-	928 low volume rotating nozzles installed	2,992 low volume rotating nozzles installed	Yes

BMP Report FY09-FY10 – Attachment 1

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 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 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

BMP Report FY09-FY10 – Attachment 2

AWWA WLCC Free Water Audit Software: Reporting Worksheet

WAS v4.2

Back to Instructions

? Click to access definition

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

WAS v4.2

Back to Instructions

? Click to access definition

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

WAS v4.2

Back to Instructions

? Click to access definition

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

WAS v4.2

Back to Instructions

? Click to access definition

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 Report FY09-FY10 – Attachment 3

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%	

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Appendix E

California Urban Water Conservation Council
10-Year BMP Coverage Report

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 F

CCWD Board Resolutions and Regulations

Appendix F - Board Resolutions and Regulations

This Appendix lists the Board resolutions and regulations pertaining to the Urban Water Management Plan and other District water conservation efforts. The resolutions are listed in Table F-1 and the regulations in Table F-2. The text of the resolution adopting the 2010 Urban Water Management Plan is included in this Appendix and follows Table F-2. Also provided in this appendix is a copy of Ordinance 09-01.

TABLE F-1. Resolutions Regarding the Urban Water Management Plan Update and Water Waste Prohibitions

Resolution Number	Title	Status
11-20	A Resolution of the Board of Directors of the Contra Costa Water District Adopting the Urban Water Management Plan	Passed
09-01	An Ordinance of the Board of Directors of Contra Costa Water District Authorizing Drought Management Program Regulations	Passed
09-03	A Resolution of the Board of Directors of Contra Costa Water District Declaring a Water Shortage Condition and Directing Preparation of a Proposed Ordinance to Include Water Use Reduction Goals by Customer Class and Other Elements Deemed Necessary to Sufficiently Conserve Available Water Supply	Passed
05-25	A Resolution of the Board of Directors of the Contra Costa Water District Authorizing Approval of the Urban Water Management Plan	Passed
00-28	A Resolution of the Board of Directors of the Contra Costa Water District Authorizing Approval of the Urban Water Management Plan	Passed
95-60	A Resolution of the Board of Directors of the Contra Costa Water District Adopting the Urban Water Management Plan	Passed
95-57	A Resolution of the Board of Directors of the Contra Costa Water District Authorizing Execution of a Project Specific Agreement for the Zone 1 Recycled Water Project Between Central Contra Costa Sanitary District and Contra Costa Water District	Passed
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	Passed
92-02	A Resolution of the Board of Directors of the Contra Costa Water District Adopting the Urban Water Shortage Contingency Plan of Said District	Passed. Superceded by resolution to adopt the update of the 1995 Urban Water Management Plan.
91-60	A Resolution of the Board of Directors of the Contra Costa Water District Amending the Drought Emergency Regulations of the District	Passed on December 11, 1991. Amended section 1 of Resolution No. 91-11 regarding effective period of regulations.
91-31	A Resolution of the Board of Directors of the Contra Costa Water District Amending Drought Emergency Regulations	Passed on June 26, 1991. Repealed mandatory water reduction provisions passed with Resolution No. 91-11

TABLE F-1. Resolutions Regarding the Urban Water Management Plan Update and Water Waste Prohibitions

Resolution Number	Title	Status
91-11	A Resolution of the Board of Directors of the Contra Costa Water District Adopting Drought Emergency Regulations Restricting the Quantity and Use of Water Supplied by the District and Imposing Penalties for Non-Compliance	Passed on March 6, 1991
91-10	A Resolution of the Board of Directors of the Contra Costa Water District Declaring a Water Shortage Emergency Condition to Prevail Within the Area Served by the District	Passed in February 1991
91-01	A Resolution of the Board of Directors of the Contra Costa Water District Amending the Urban Water Management Plan of Said District and Directing the Implementation of the Plan	Passed on January 9, 1991
90-79	A Resolution of the Board of Directors of the Contra Costa Water District Declaring Certain Policies in Regard to Recycled Water	Passed on November 7, 1990
90-59	A Resolution of the Board of Directors of the Contra Costa Water District Declaring the Urgent Need to Conserve Water and Challenging All Customers of the District to Improve Water Use Efficiency and to Avoid the Waste and Unnecessary Use of Water	Passed on July 11, 1990
90-44	A Resolution of the Board of Directors of the Contra Costa Water District Approving Revised Water Conservation Guidelines for New Developments and Urging Local Municipalities to Adopt Said Guidelines	Passed on May 16, 1990
88-25	A Resolution of the Board of Directors of the Contra Costa Water District Declaring the Need to Conserve Water and Urging the Raw Water Customers of the District to Improve Water Use Efficiency and to Avoid Waste and Unnecessary Use of Water	Passed on April 20, 1988
88-24	A Resolution of the Board of Directors of the Contra Costa Water District Declaring the Need to Conserve Water and Urging the Treated Water Customers of the District to Improve Water Use Efficiency and to Avoid Waste and Unnecessary Use of Water	Passed on April 20, 1988
85-31	A Resolution of the Board of Directors of the Contra Costa Water District Adopting Regulation No. 137, the Urban Water Management Plan of Contra Costa Water District	Passed on December 18, 1985
72-3	A Resolution of the Board of Directors of the Contra Costa Water District of Intent to Negotiate a Contract to Purchase Reclaimed Water	Passed on January 26, 1972
71-39	A Resolution of the Board of Directors of the Contra Costa Water District Declaring its Intention to Negotiate a Contract with Central Contra Costa Sanitary District for Reuse of Reclaimed Water	Passed on November 17, 1971

TABLE F-2. Regulations Regarding Water Conservation

Chapter in District Regulations	Title
5.04	General Provisions
5.44	Water Conservation
7.20	Operating Plans

CERTIFIED A TRUE COPY OF THE ORIGINAL

Mary A. Neher, District Secretary
Contra Costa Water District

RESOLUTION NO. 11-20

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CONTRA COSTA WATER DISTRICT ADOPTING THE URBAN WATER MANAGEMENT PLAN

WHEREAS, the Urban Water Management Planning Act (Act), which is codified at California Water Code Section 10610 et seq. (Chapter 1009, Statutes of 1983 and subsequent amendments thereto, including SB X7-7, the Water Conservation Act of 2009), requires that every urban water supplier which provides 3,000 acre-feet or more of water annually, or which directly or indirectly supplies water for municipal purposes to more than 3,000 customers, shall prepare an Urban Water Management Plan (Plan), the primary objective of which is to plan for the reliable delivery of urban water supplies and for the conservation and efficient use of water; and

WHEREAS, the Contra Costa Water District is an urban water supplier providing in excess of 3,000 acre-feet of water per year to over 3,000 treated water customer connections, and providing additional untreated and treated water at wholesale to municipal and industrial customers; and

WHEREAS, the Act requires that the Plan shall be periodically reviewed at least once every five years, and that the District shall make amendments or changes to its Plan which are indicated by the review and the District has engaged in the required review; and

WHEREAS, the revised 2010 Plan must be adopted by July 1, 2011, after public review and a Public Hearing by the District, and must be filed with the California Department of Water Resources within 30 days after adoption by the District's Board of Directors; and

WHEREAS, the District notified the county and cities in its jurisdiction, along with other interested parties, of the preparation of this 2010 Urban Water Management Plan, and coordinated with those agencies for its preparation; and

WHEREAS, the District has heretofore prepared, and commencing on May 1, 2011, circulated for public review, a Draft 2010 Urban Water Management Plan, in compliance with the requirements of the Act, and duly noticed a Public Hearing on said Draft Plan, and having conducted a Public Hearing before the Board of Directors in accordance with said notice on June 1, 2011, and no objections having been raised, said Draft Plan now may be finalized and adopted as prepared.

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

1. The Board does hereby find, determine, and declare that:
    a. The District has prepared said Draft Urban Water Management Plan (Draft Plan), dated May 2011.
    b. A copy of the Draft Plan has been available for public inspection at the principal office of the District and on the District's website continuously since May 1, 2011.
    c. On June 1, 2011, this Board held a Public Hearing on the Draft Plan. Notice of the time and place of said Hearing was published in the Contra Costa Times, a newspaper of general circulation, on May 1, 2011 and May 8, 2011.
    d. The Board has considered public comment received and hereby approves and adopts the 2010 Urban Water Management Plan dated June 2011 prepared by the District.
    e. This 2010 UWMP updates and supersedes all previous UWMPs prepared by the District.
2. The General Manager or his designee is hereby authorized and directed to submit three copies of the Plan to the California Department of Water Resources within 30 days after this date.

3. The General Manager shall from time to time submit to this Board recommended policies and actions to implement effective and equitable water conservation and allocation programs in accordance with the Plan and to meet urban water targets as required by the Water Conservation Act of 2009.

* * * * * * * * * * * *

The foregoing Resolution was duly and regularly adopted at a regular meeting held on the 1st day of June 2011, by the Board of Directors of the Contra Costa Water District by the following vote of the Board.

AYES: Wandry, Borba, Burgh, Campbell

NOES:

ABSENT: Boatmun

Joseph L. Campbell, President

ATTEST:

Mary A. Neher
District Secretary

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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Appendix G

Public Notice

CONTRA COSTA WATER DISTRICT
1331 Concord Avenue
PO Box H2O
Concord, CA 94524

NOTICE OF PUBLIC HEARING

The Contra Costa Water District will hold a public hearing to accept comments on its draft 2010 URBAN WATER MANAGEMENT PLAN which was developed in compliance with the State of California's Urban Water Management Planning Act which is codified under the California Water Code Section 10610 et seq.

Date: Wednesday, June 1, 2011

Time: 6:30 PM

Place: Board Room
Contra Costa Water District
1331 Concord Avenue
Concord, California

A copy of the draft report is available for review on the District's website (www.ccwater.com) and at the District Office located at 1331 Concord Ave.

CCT# 3979402
May 1, 8, 2011

Appendix H

Water Conservation Bill of 2009
Regional Alliance Analysis

APPENDIX H
THE WATER CONSERVATION BILL OF 2009
REGIONAL ALLIANCE ANALYSIS

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.
10608.20(e) Include the baseline daily per capita water use, urban water use target, interim water use target, and compliance daily per capita water use. Provide basis for determination and supporting data references.
10608.20(h)(2) An urban retail water supplier shall use the methods developed by the department in compliance [with methodologies and criteria developed by DWR]

10608.28. (a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:
(1) Through an urban wholesale water supplier.
(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).
(3) Through a regional water management group as defined in Section 10537.
(4) By an integrated regional water management funding area.
(5) By hydrologic region.
(6) Through other appropriate geographic scales for which computation methods have been developed by the department.
10608.36 Wholesale suppliers will provide an assessment of their present and proposed future measures, programs, and policies to achieve water use reduction required in SBX7 7.

Beginning with the 2010 UWMPs, the Water Conservation Bill of 2009, Senate Billx7-7 (SBx7-7), requires each urban retail water supplier to include the following in its UWMP:

- Baseline daily per capita water use – how much water is used within an urban water supplier's distribution system area on a per capita basis. It is determined using water use and population estimates from a defined range of years.

- Urban water use target – how much water is planned to be delivered in 2020 to each resident within an urban water supplier's distribution system area, taking into account water conservation practices that currently are and plan to be implemented.

- Interim urban water use target – the planned daily per capita water use in 2015, a value halfway between the baseline daily per capita water use and the urban water use target.

In 2015 and 2020, each water supplier will determine a compliance daily per capita water use to assess progress toward meeting interim and 2020 urban water use targets. SBx7-7 allows water suppliers to update their calculation methodologies and water use target in the 2015 UWMP.

CCWD is both a retail and wholesale water supplier. CCWD fulfilled its SBx7-7 reporting requirements for its retail treated water service area in Section 9 of the 2010 UWMP. Appendix H of the 2010 UWMP provides an analysis of the SBx7-7 requirements for CCWD's wholesale service area. The regional alliance includes CCWD's retail service area and CCWD's wholesale municipal customers (Cities of Antioch, Pittsburg, and Martinez, Golden State Water Company, and Diablo Water District). As required by DWR, CCWD submitted a letter to DWR on June 8, 2011 stating that a regional alliance was formed and providing a list of the water supplier members. A copy of this letter is provided at the end of Appendix H. Additionally, CCWD's wholesale municipal customers have provided a statement in their 2010 UWMPs that they are members of CCWD's regional alliance.

DWR's "Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan" (Guidebook) outlines four steps water suppliers must complete to meet the 2010 UWMP requirements identified in SBx7-7:

1. Determine Base Daily Per Capita Water Use
2. Determine Urban Water Use Target
3. Compare Urban Water Use Target to the 5-year Baseline
4. Determine Interim Urban Water Use Target

CCWD has completed these steps for its regional alliance analysis as follows.

Step 1. Determine Base Daily Per Capita Water Use

As defined in CWC Section 10608.12(b), base daily per capita water use is the average gross water use reported in gallons per capita per day (gpcd) and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water, the water supplier has the option to extend the base period up to an additional five years to a maximum continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010. The regional alliance does not meet this requirement, and will therefore use a 10-year period for the baseline calculation.

The gross water use is defined in CWC Section 10608.12(g) as the total volume of water entering the distribution system excluding recycled water. CCWD's gross water use for its total water service area was determined as the sum of the total water deliveries into CCWD's untreated water conveyance facility (Contra Costa Canal) plus wholesale customers' water use from other water supply sources. These water deliveries are metered and do not include any recycled water use.

To calculate per capita water use, CCWD developed service area population estimates according to guidance provided in Section M of DWR's Guidebook, "Water Conservation Bill of 2009 Technical Methodologies.

CCWD utilized its GIS database and the following sources to calculate population data:

- Available U.S. Census Bureau (Census) data from 1990 and 2000
- Data published by the California Department of Finance (DOF) for non-census years

CCWD's total service area includes CCWD's retail service area and areas served by wholesale deliveries from CCWD. CCWD's total service area boundaries do not exactly match City boundaries. Therefore, CCWD developed a proportional area approach to incorporate DOF population estimates for the cities and unincorporated areas within CCWD's service area. CCWD's service area covers a total area of more than 140,000 acres, including the largely unpopulated Los Vaqueros (LV) watershed (19,100 acres). For the proportional area estimation method, the LV watershed area was subtracted from the CCWD distribution area. The CCWD distribution area does not include large institutions with wholly private water systems, therefore no subtractions were made for this category. A map showing CCWD's service area is provided as Figure H-1.

CCWD's gross water use and population estimates for the 10-year base period of 1995 to 2004 are presented in Table H-1. The base daily per capita water use is calculated to be 261 gpcd.

TABLE H-1: 10-YEAR BASE DAILY PER CAPITA WATER CCWD REGIONAL ALLIANCE				
Base period year		**Distribution System Population**	**Daily system gross water use (acre-feet)**	**Annual daily per capita water use (gpcd)**
Sequence Year	**Calendar Year**			
Year 1	1995	378,909	112,431	265
Year 2	1996	383,409	118,693	276
Year 3	1997	389,899	123,738	283
Year 4	1998	397,962	113,253	254
Year 5	1999	409,361	118,756	259
Year 6	2000	417,477	120,913	259
Year 7	2001	420,462	123,172	262
Year 8	2002	435,167	125,385	257
Year 9	2003	439,858	120,822	245
Year 10	2004	445,059	126,924	255
Base Daily Per Capita Water Use				261

Step 2. Determine Urban Water Use Target

The CWC Section 10608.20(b) provides four methods for calculating the 2020 water use target. Three of the methods are detailed in the CWC. The fourth method was developed by DWR. The following is a summary of the methods along with CCWD's preliminary evaluation of each method:

- Method 1 – Eighty percent of the water supplier's baseline per capita daily water use. This is a straightforward method that yields a regional alliance water use target of 209 gpcd based on the baseline per capita daily water use determined in Step 1 of this section. For this UWMP, CCWD has utilized this method to set its 2015 interim and 2020 regional alliance water use targets. Method 2 – Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscape area water use, and commercial, industrial, and institutional uses. This method requires the use of satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped area. CCWD will coordinate with its wholesale customers to evaluate this method in the future.
- Method 3 – Ninety-five percent of the applicable state hydrologic region target as set forth in the state's 20x2020 Water Conservation Plan. CCWD's total service is split between the San Francisco Bay (SF Bay) and San Joaquin River (SJR) hydrologic regions. The city of San Francisco is densely populated with relatively low landscape irrigation needs and a cooler climate than CCWD's water service area. As shown in Figure F-1 of the DWR Guidebook, the urban water use target for the SF Bay and SJR hydrologic regions are 131 gpcd and 174 gpcd, respectively. A rough estimate based on surface area indicates that CCWD's service area is split 60/40 between the SF Bay and SJR hydrologic regions. Using Method 3 yields an urban water use target of

approximately 148 gpcd for the regional alliance. This target would require a reduction of more than 40% from the regional alliance baseline per capita daily water use.

- Method 4 – Provisional "Water Savings" method developed by DWR and described in Appendix C of DWR's Guidebook. For this method, water savings are achieved due to metering of unmetered water connections and implementing water conservation measures in three water use sectors (indoor residential, CII, and landscape area). The urban water use target is set by subtracting the determined total water savings from the base per capita daily water use. Currently, Method 4 is provisional and will be updated by DWR by December 31, 2014. CCWD will evaluate this method once it is finalized.

Based on a preliminary evaluation of the four methods, CCWD utilized Method 1 to set its 2015 interim and 2020 regional alliance water use targets. CCWD will update its analysis and potentially use an alternative method in its 2015 UWMP. Table H-2 presents the urban water use target calculation using Method 1.

TABLE H-2: WATER USE TARGET CALCULATION
CCWD REGIONAL ALLIANCE

Required Data	Gallons per capita per day (gpcd)
Baseline Daily per Capita Water Use [a]	261
Urban Water Use Target Method 1: 80% of Baseline	209

a) See Table H-1 for 10-year base daily per capita water use calculation.

Step 3. Compare Urban Water Use Target to the 5-year Baseline

As described in CWC Section 10608.22, water agencies must achieve a minimum daily per capita use reduction of 5 percent of base daily per capita water use, calculated using a five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

Table H-3 presents CCWD's 5-year base daily per capita water use, which is calculated to be 247 gpcd for the 5-year base period of 2003 to 2007. Methodologies for calculating gross water use and service area population are described in Step 1 of this section.

TABLE H-3: 5-YEAR BASE DAILY PER CAPITA WATER
CCWD REGIONAL ALLIANCE

Base period year		Distribution System Population	Daily system gross water use (acre-feet)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	2003	439,858	120,822	245
Year 2	2004	445,059	126,924	255
Year 3	2005	446,412	121,282	243
Year 4	2006	445,175	120,746	242
Year 5	2007	447,922	125,433	250
			Base Daily Per Capita Water Use	247

Table H-4 provides a comparison of the urban water use target to the 5-year baseline target. The regional alliance is required to use the lesser of the two values as its 2020 urban water use target. Therefore, the regional alliance 2020 water use target is 209 gpcd.

TABLE H-4: WATER USE TARGET CALCULATION CCWD REGIONAL ALLIANCE

Required Data	Gallons per capita per day (gpcd)
Baseline Daily per Capita Water Use [a]	261
2020 Water Use Target	
Method 1: 80% of Baseline	209
95% of Base Daily per Capita Water Use using 5-year Average [b]	235
Actual 2020 Water Use Target [c]	209
2015 Interim Water Use Target [d]	235

a) See Table H-1 for 10-year baseline calculation.
b) See Table H-3 for 5-year baseline calculation.
c) The water use target is the lesser of Method 1 or 95% of the 5-year baseline daily per capita water use.
d) Interim water use target is defined as halfway between 10-year baseline and 2020 water use target.

Step 4. Determine Interim Urban Water Use Target

The interim urban water use target is defined in the CWC Section 10608.12 (j) as the midpoint between the base daily per capita water use and the urban water use target for 2020. As presented in Table H-4, the 2015 interim water use target for the regional alliance is calculated to be 235 gpcd.

Present and Proposed Future Measures, Programs, and Policies to Achieve Water Use Reduction Required in SBx7-7

CCWD and its wholesale customers have already made significant progress towards meeting the regional alliance urban water use target. Some of the progress can be attributed to customers' response to recent drought conditions and the current economic downturn. In 2009, CCWD implemented a Drought Management Program that was in effect for CCWD's total service area from May 1, 2009 through April 30, 2010. The daily per capita water use for CCWD's total water service area was approximately 190 gpcd in 2010, which is lower than the 2020 urban water use target.

The future measures, programs, and policies presented in Section 9 of the UWMP for CCWD's retail treated water service area also apply to CCWD's total service area and the regional alliance. CCWD will continue to implement its Water Conservation Program that has been active for over 20 years. CCWD offers its Conservation Program services to both its retail and wholesale service area customers. The Water Conservation Program is designed to reduce long-term water demand in conformance with the District's FWSS. Total savings resulting from

active and passive conservation activities are estimated to be over 21,000 acre-feet by 2035. The Conservation Program played a key role in helping customers meet their reduction goals for the 2009 DMP and will be an important tool for the regional alliance in meeting its 2020 urban water use target.

The following is a summary of key Conservation Program elements, which are described in more detail in Section 7 of the UWMP.

- Conservation surveys for single-family, multi-family, CII, and large landscape customers
- Conservation incentives including shower timers, restaurant table tents, smart car wash coupons, and money-saving mulch coupons
- Conservation rebates for high-efficiency toilets, high-efficiency clothes washers, smart sprinkler timers, sprinkler and nozzle retrofits, drip retrofits, and pilot water-efficient landscapes
- Education and outreach programs including flyers on how to read your meter, lawn and landscape watering schedule, and school education programs

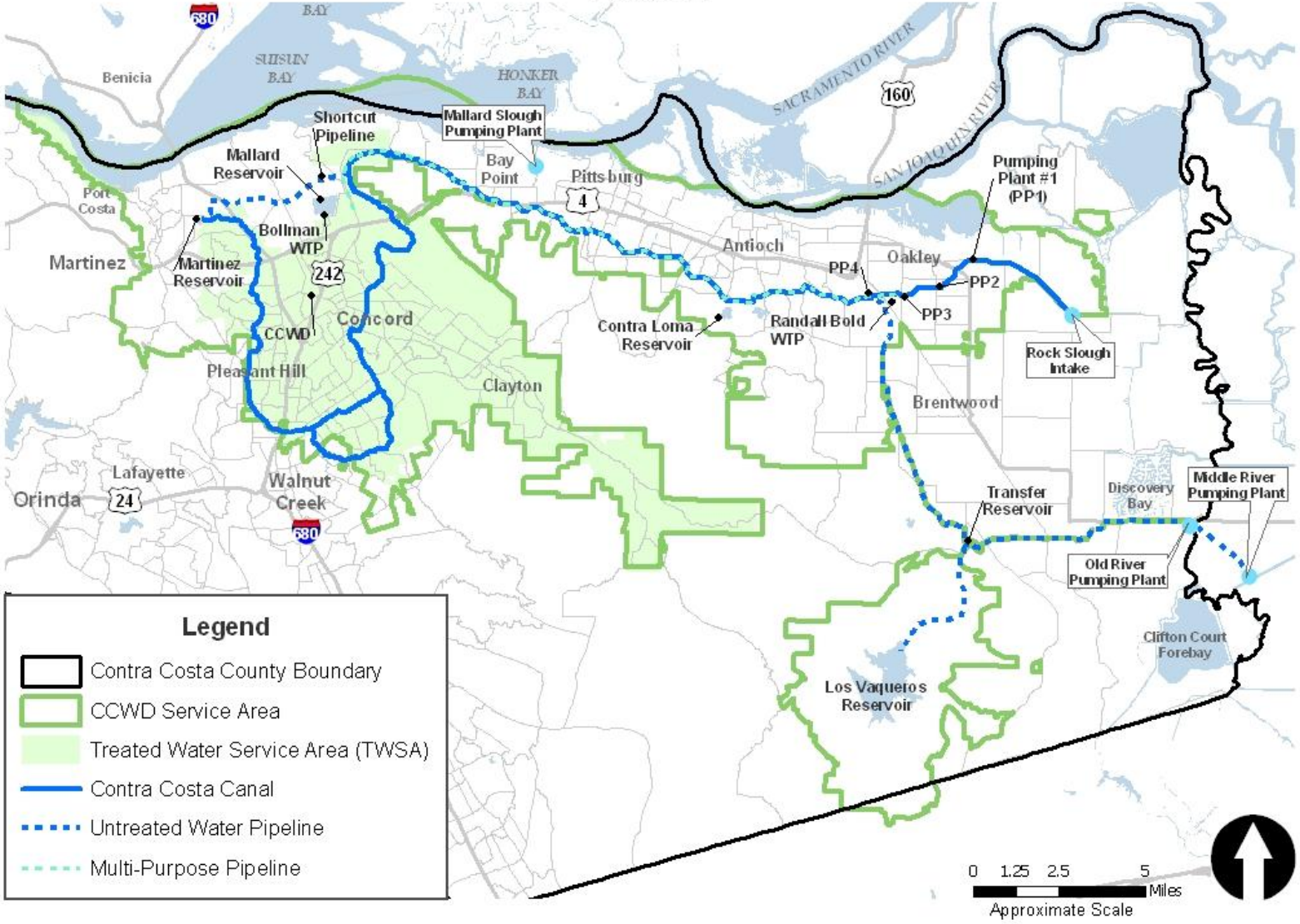
In addition to active conservation activities implemented through CCWD's Conservation Program, passive conservation is also achieved through state and local efficiency codes. Efficiency codes that require efficient fixtures and appliances, grant funding to promote water conservation, residential weather-based irrigation controllers, and efficient landscape practices are expected to achieve additional water use reductions in CCWD's service area.

Future recycled water projects within CCWD's service area will also contribute towards achieving water use reduction goals. Potential opportunities include recycled water projects for agricultural irrigation, urban landscape irrigation, industrial reuse, and groundwater recharge. Section 5 of this UWMP includes a more detailed discussion of current and future recycled water opportunities, and Table 5-3 provides projected future use of recycled water in the CCWD service area. It is anticipated that by the year 2035, recycled water use will be approximately 14,800 AFY. CCWD will continue to work collaboratively with its wholesale customers and municipalities in the CCWD service area to encourage recycled water use in future development projects.

An example of a future development in CCWD's service area that would incorporate significant water conservation measures and recycled water standards is the City of Concord Community Reuse Plan (Reuse Plan), which proposes to redevelop approximately 5,000 acres of the Concord Naval Weapons Station located within CCWD's treated water service area. 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. There are also opportunities to provide up to an additional 3,000 acre-feet annually of recycled water if the planned open spaces and parks are irrigated.

There are also potential future opportunities for industrial reuse projects within CCWD's service area. These projects could supply highly treated recycled wastewater to selected industrial customers for process and cooling purposes. Potential customers include the Tesoro and Shell oil refineries, power plants and other manufacturing facilities.

CONTRA COSTA WATER DISTRICT
SERVICE AREA MAP
FIGURE H-1



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CONTRA COSTA
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June 8, 2011

Mr. Peter Brostrom
Urban Water Use and Efficiency Branch
California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236

Subject: 2010 Urban Water Management Plan – Regional Alliance

Dear Mr. Brostrom:

The purpose of this letter is to inform the California Department of Water Resources of the regional alliance Contra Costa Water District (CCWD) has formed with its wholesale municipal customers. The regional alliance includes the following members:

- Contra Costa Water District
- City of Antioch
- City of Martinez
- City of Pittsburg
- Diablo Water District
- Golden State Water Company (Bay Point)

Each member of the regional alliance has prepared an individual Urban Water Management Plan that includes individual baseline and water use target analyses required by the Water Conservation Bill of 2009 (SBX 7-7) as well as acknowledgement that the agency is participating in the CCWD regional alliance. The regional alliance analysis was prepared by CCWD and is included in Appendix H of CCWD's 2010 Urban Water Management Plan.

If you have any questions or concerns, please feel free to contact me at (925) 688-8310.

Sincerely,

Jeff Quimby
Principal Engineer

KL:cmn

cc: Mr. Phil Harrington, City of Antioch
Mr. Alan Pellegrini, City of Martinez
Mr. Walter Pease, City of Pittsburg
Mr. Mike Yeraka, Diablo Water District
Mr. Ernie Gisler, Golden State Water Company

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Appendix I

Acronyms and Abbreviations

APPENDIX I. ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ABAG	Association of Bay Area Governments
AF	acre-feet
AFY or af/yr	acre-feet per year
BMP	Best Management Practice
CCCSD	Central Contra Costa Sanitary District
CCWD	Contra Costa Water District
cfs	cubic feet per second
CII	Commercial, Institutional and Industrial
CIMIS	California Irrigation Management Information System
CIP	Capital Improvement Program
CNWS	Concord Naval Weapons Station
CPA1	Conservation Program Alternative 1
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CWC	California Water Code
DDSD	Delta Diablo Sanitation District
DEC	Delta Energy Center
DMM	Demand Management Measure
DMP	Drought Management Program
DOF	Department of Finance
DWD	Diablo Water District
DWR	Department of Water Resources
EBMUD	East Bay Municipal Utility District
ECCID	East Contra Costa Irrigation District
EGIA	Electric Gas Industries Association
EOP	Emergency Operations Plan
ETo	Reference Evapotranspiration
FWSS	Future Water Supply Study
FY	Fiscal Year
GHG	Greenhouse Gas
gpcd	gallons per capita per day
gpf	gallons per flush
gpm	gallons per minute
HET	High Efficiency Toilet
ISD	Ironhouse Sanitary District
IRWM	Integrated Regional Water Management
LMEC	Los Medanos Energy Center
LVE	Los Vaqueros Reservoir Expansion
LVP	Los Vaqueros Project
MF	multi-family
mgd	million gallons per day
mg/L	milligrams per liter
MOA	Memorandum of Agreement

MOU	Memorandum of Understanding
MPP	Multi-Purpose Pipeline
MVSD	Mountain View Sanitation District
M&I	Municipal and Industrial
SB	Senate Bill
SF	single family
SRIP	Seismic Reliability Improvement Project
SWP	State Water Project
TWMP	Treated Water Master Plan
TWSA	Treated Water Service Area
UAW	Unaccounted for Water
ULFT	Ultra Low Flow Toilet
USBR	United States Bureau of Reclamation
UV	ultraviolet
UWSA	Untreated Water Service Area
WBIC	Weather-Based Irrigation Controller
WEP	Water Education Program

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