

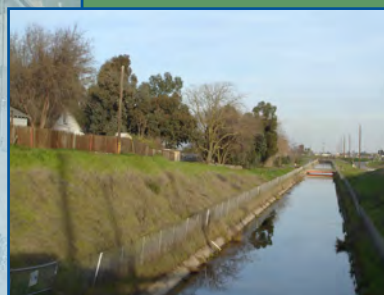


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June 2016

FINAL

2015 Urban Water Management Plan



**CDM
Smith**

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I	Diablo Water District Regulation No. 8, Water Conservation
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K	Diablo Water District Emergency Plan
L	Department of Water Resources AB 1420 Self-Certification Statement

List of Abbreviations

°F	degrees Fahrenheit
Act	Urban Water Management Planning Act of 1983
AF	acre-feet
AWWA	American Water Works Association
BARDP	Bay Area Regional Desalination Project
BMO	basin management objective
BMP	best management practice
Canal	Contra Costa Canal
CCWD	Contra Costa Water District
CII	commercial, industrial, and institutional
CVP	Central Valley Project
CWC	California Water Code
DMM	demand management measures
DWD	Diablo Water District
DWR	California Department of Water Resources
EBMUD	East Bay Municipal Utility District
ECCID	East Contra Costa Irrigation District
ECWMA	East County Water Management Association
GCMs	general circulation models
gpcd	gallons per capita per day
gpf	gallon per flush
gpm	gallons per minute
GSA	groundwater sustainability agency
GSP	Groundwater Sustainability Plan
IRWM	Integrated Regional Water Management
ISD	Ironhouse Sanitary District
LSCE	Luhdorff & Scalmanini Consulting Engineers
MBR	membrane bioreactor
MG	million gallons
mgd	million gallons per day
ppm	parts per million
Reclamation	U.S. Bureau of Reclamation
SBX7-7	Water Conservation Act of 2009
SOI	sphere of influence
SWP	State Water Project
SWRCB	State Water Resources Control Board
UWMP	Urban Water Management Plan
WTP	Water Treatment Plant

Section 1

Introduction

This report constitutes the Diablo Water District's (DWD's) 2015 Urban Water Management Plan (UWMP). All urban water suppliers within the State of California are required to prepare a UWMP every five years. This plan was adopted by DWD and submitted to the California Department of Water Resources (DWR). The UWMP serves as a planning document for DWD's service area, and discusses the water system, supply sources, historical water use, conservation efforts, projected water use compared to water supply sources for the next 20 years, and projected supply reliability during normal, dry, and drought conditions.

1.1 Regulatory Background and Requirements

California Water Code (CWC) Sections 10610 through 10656 detail the information that must be included in these plans, as well as who must file them. An urban water supplier is defined as a supplier, either publicly or privately owned, that provides water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet (AF) of water annually. This plan satisfies the requirements of the Urban Water Management Planning Act of 1983 (the Act) and the subsequent amendments, and provides an update to DWD's 2010 UWMP. A copy of the Act is included in Appendix A, and a checklist cross-referencing the Act's requirements to applicable pages in this UWMP is provided in Appendix B.

Since 2010, several amendments have been added to the Act. These amendments are summarized below:

- Demand management measures: Requires water suppliers to provide narratives describing their water demand management measures, the nature and extent of each water demand management measure implemented over the past five years, and the water demand management measures that the supplier plans to implement to achieve its water use targets. (§10631 (f)(1) and (2))
- Submittal date: Requires each urban water supplier to submit its 2015 UWMP to DWR by July 1, 2016. (§10621 (d))
- Electronic submittal: Requires the UWMP, or amendments to the UWMP, to be submitted electronically to DWR. (§10644 (a)(2))
- Standardized forms: Requires the UWMP, or amendments to the UWMP, to include any standardized forms, tables, or displays specified by DWR. (§10644 (a)(2)) These standardized tables are included as Appendix C.
- Water loss: Requires a UWMP to quantify and report on distribution system water loss. (§10631 (e)(1)(J) and (e)(3)(A) and (B))

- Estimating future water savings: Provides for water use projections to display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans, when that information is available and applicable to an urban water supplier. (§10631 (e)(4))
- Voluntary reporting of energy intensity: Provides for an urban water supplier to include certain energy-related information, including, but not limited to, an estimate of the amount of energy used to extract or divert water supplies. (§10631.2 (a) and (b))
- Defining water features: Requires urban water suppliers to analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas. (§10632)

SBX7-7, the Water Conservation Act of 2009, requires water agencies to reduce per capita water use by 20 percent by 2020 (commonly referred to as “20x2020”). Water suppliers were required to set an interim target for 2015 and a final target for 2020 in their 2010 UWMP using one of four methodologies to calculate per capita water use. Failure to meet adopted targets will result in the ineligibility of a water supplier to receive state grants or loans unless one of two exceptions are met.

1.2 Agency Coordination

Table 1-1 lists the agencies that have coordinated to support the development of this UWMP. These agencies were notified in March 2016 that DWD was updating its UWMP. Copies of these notices are included in Appendix D-1. The agencies also received a copy of the Draft UWMP.

Table 1-1 Coordination with Appropriate Agencies

Coordinating Agencies	Contacted for Assistance	Sent Notice of Preparation	Sent Copy of the Draft Plan
Bethel Island Municipal Improvement District		X	X
Byron-Bethany Irrigation District		X	X
California Department of Public Health		X	X
City of Antioch		X	X
City of Brentwood		X	X
City of Oakley	X	X	X
City of Pittsburg		X	X
Contra Costa County Community Development Department	X	X	X
Contra Costa County Department of Health Services		X	X
Contra Costa Water District	X	X	X
Delta Diablo Sanitation District		X	X
East Contra Costa Irrigation District		X	X
Knightsen Town Advisory Council		X	X
Ironhouse Sanitary District	X	X	X
Town of Discovery Bay		X	X

DWD has been an active participant for many years in integrated water resource planning for East Contra Costa County. Since 1994, the water and wastewater agencies in East Contra Costa County have worked collaboratively to integrate management initiatives and infrastructure in the interest of increasing water supply reliability. DWD is a member of the East County Water Management Association (ECWMA). ECWMA is a group of 12 public agencies in eastern Contra Costa County who participate in regional water supply planning efforts. Aside from DWD, the other 11 agencies consist of the City of Antioch, City of Brentwood, Byron-Bethany Irrigation District, Contra Costa County Flood Control, Contra Costa Water District (CCWD), Delta Diablo Sanitation District, Discovery Bay Community Services District, East Contra Costa County Habitat Conservancy, East Contra Costa Irrigation District (ECCID), Ironhouse Sanitary District (ISD), and City of Pittsburg.

The local cities, districts, and water resource agencies developed and implemented a comprehensive Stormwater Management Plan to protect the beneficial uses of the Delta water system. They developed an innovative habitat conservation plan to reserve endangered species and have launched several ecosystem restoration projects.

In the early 1990s, ECWMA, with DWD participation, developed a comprehensive water management plan, the East County Water Supply Management Study. In July 2005, the association members, including DWD, participated in the completion of the East Contra Costa County Functionally Equivalent Integrated Regional Water Management (IRWM) Plan. This document brought together into a shared vision the integrated water resource planning initiatives being conducted by the various entities serving East Contra Costa County.

The ECWMA has been successful in competing for IRWM grant funding from DWR. In 2011, DWR awarded the East Contra Costa County region \$1,775,000 of Proposition 84 Round 1 implementation funding for regional water management projects. In 2012, the region received over \$450,000 in a Proposition 84 Round 2 planning grant, and in 2014, the region received \$430,000 in a Proposition 84 Round 2 implementation grant.

DWD has also coordinated with East Contra Costa County agencies on groundwater supply management. The City of Brentwood, CCWD, Town of Discovery Bay, East Contra Costa Water District, and the City of Pittsburg formed an advisory group to guide preparation of DWD's 2007 Groundwater Management Plan. The agency representatives participated in meetings on content and reviewed the draft Plan. In response to the Sustainable Groundwater Management Act of 2014, DWD is forming a groundwater sustainability agency (GSA) with other East County agencies to assess the conditions in the local basin and adopt a locally-based sustainability management plan. More information on this effort is discussed in Section 4.

1.3 Plan Adoption

The Draft UWMP was circulated to parties known to DWD that may have an interest in the UWMP (shown in Table 1-1). The Draft UWMP was made available for review at the Oakley Public Library, DWD's office, and online at DWD's website, www.diablowater.org.

The public hearing was held on May 24, 2016 at DWD's offices during a Regular Meeting of the Board of Directors. The public hearing was noticed in the Oakley Press, a weekly local newspaper in DWD's service area, on May 6 and May 13, 2016. A copy of the notice for the public hearing is included in Appendix D-2. Minutes from the meeting are included in Appendix D-3.

The DWD Board of Directors adopted the 2015 UWMP at a Regular Meeting on June 22, 2016. A copy of the resolution of UWMP adoption is included as Appendix E. Within 30 days of adoption, DWD will submit the Final UWMP to DWR, the California State Library, the City of Oakley, and Contra Costa County. The Final UWMP will also be made available to the public on DWD's website.

Section 2

Service Area Description

Section 2 provides the location of the DWD service area, summarizes climate characteristics for the area, and presents current population estimates and population projections.

2.1 Location

DWD is located in the northeastern corner of Contra Costa County, east of the City of Antioch and north of the City of Brentwood. As shown on Figure 2-1, DWD's service area includes the City of Oakley, the Town of Knightsen, and some of Bethel Island. DWD's ultimate service area, or Sphere of Influence (SOI), encompasses the existing service area and incorporated county lands east and south of Oakley. The SOI could also eventually include all of Bethel Island if residents wish to secure water service from DWD. DWD's SOI and Bethel Island encompass approximately 19,000 acres. Currently DWD serves about half of this ultimate area; the remainder is undeveloped or is served by groundwater wells of individual property owners.

The existing treated water system is located in the western part of the ultimate area, where the original Oakley community began. Significant development is planned to occur in the eastern part of the ultimate area, and DWD's treated water system would be expanded to serve the eastern area when necessary.

The terrain is gently rolling, with a gradual slope toward the San Joaquin River. Ground elevation varies from minus 5 feet in the eastern part of the SOI to approximately 100 feet at the southwest corner of DWD's service area.

2.2 Climate Characteristics

DWD's service area experiences a Mediterranean type climate, with mild, rainy winters and hot, dry summers. DWD receives approximately 13 inches of precipitation annually, with 95 percent of this precipitation occurring in the months of October through April. Table 2-1 presents average monthly precipitation, temperature, and evapotranspiration data in the DWD area.

Table 2-1 Climate Data for DWD's Service Area

Month	Monthly Average Maximum Temperature ¹ (°F)	Monthly Average Minimum Temperature ¹ (°F)	Monthly Average Precipitation ¹ (inches)	2015-2016 Evapotranspiration ² (inches)
Jan	54.0	37.1	2.78	0.94
Feb	60.3	41.0	2.43	2.71
Mar	65.5	43.4	2.00	3.61
Apr	71.6	46.4	0.90	5.66
May	78.6	51.4	0.36	6.88
Jun	86.1	56.3	0.09	7.81
Jul	91.1	57.6	0.02	8.44
Aug	89.9	56.9	0.04	7.75

Table 2-1 Climate Data for DWD's Service Area

Month	Monthly Average Maximum Temperature ¹ (°F)	Monthly Average Minimum Temperature ¹ (°F)	Monthly Average Precipitation ¹ (inches)	2015-2016 Evapotranspiration ² (inches)
Sep	86.3	55.3	0.18	6.01
Oct	77.4	50.3	0.64	4.25
Nov	64.4	43.1	1.58	2.23
Dec	54.9	37.4	2.20	1.29
Annual	73.3	48.0	13.22	57.58

¹ Source: Western Region Climate Center, Antioch Pump Plant 3 weather station (#040232), <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca0232>.

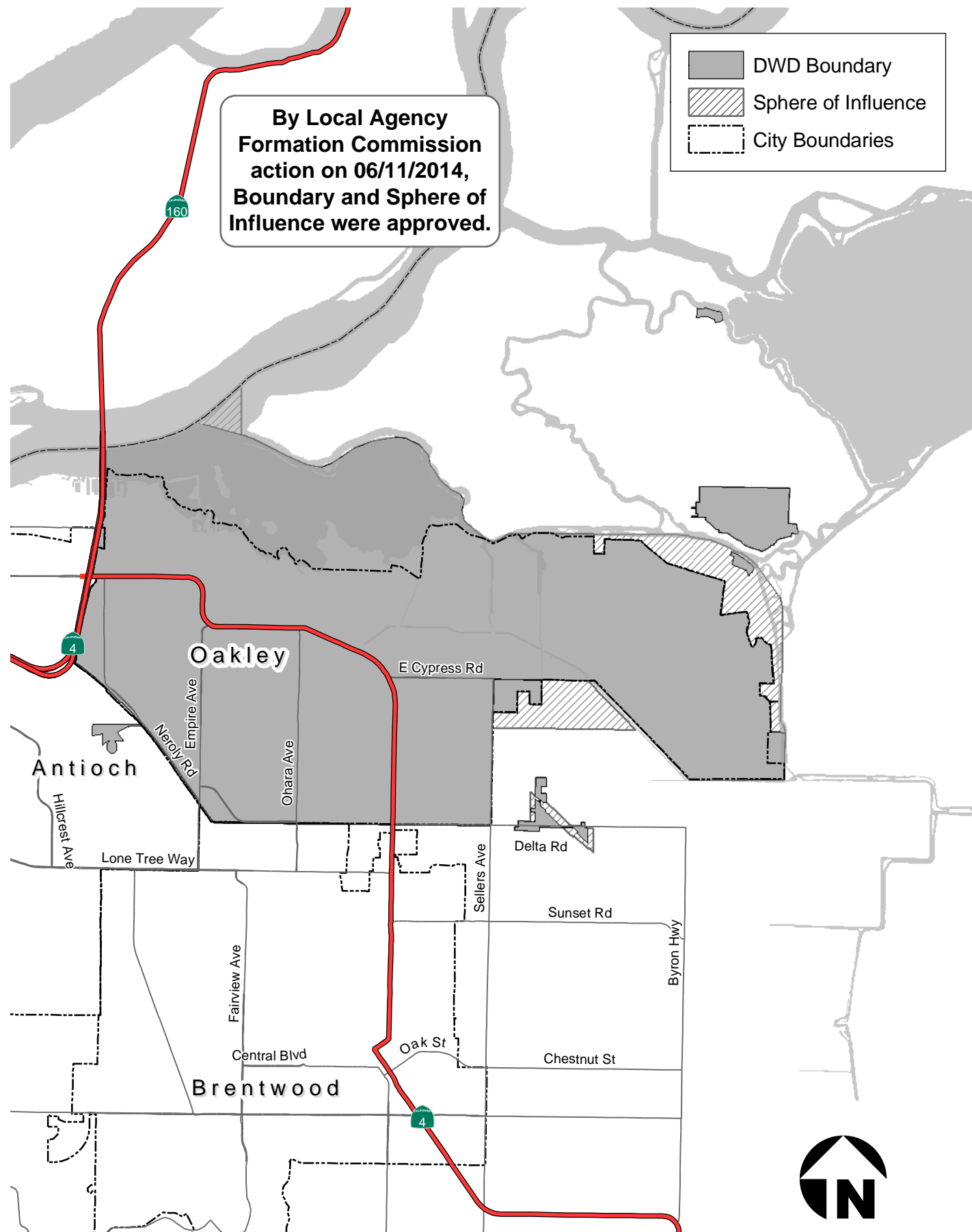
² Source: California Irrigation Management Information System, Brentwood, California station, <http://www.cimis.water.ca.gov/WSNReportCriteria.aspx>.

2.3 Demographic Characteristics

Population and housing projections are all tools utilized to project municipal and industrial water demands. DWD currently serves approximately 34,900 residents of the City of Oakley based on DWR's population tool. According to the 2020 General Plan (amended most recently in 2016), the City's total buildout population is projected to be about 67,000, which includes approximately 49,000 people within the 2002 City limits and 18,000 in the City's expansion areas (the City has now annexed some of these expansions areas into its city limits). In addition, DWD will serve Knightsen and some or all of Bethel Island in the future, although it does not currently provide treated water service to those areas. The Delta Coves subdivision on Bethel Island is under construction and is scheduled start receiving water from DWD in the summer of 2016 for up to 50 homes. Additional potable water infrastructure (looping pipeline, reservoir, and pump station) must be constructed within Delta Coves for the rest of the approximately 500-unit subdivision, anticipated to be completed by the end of 2017, to receive service from DWD.

For this UWMP, ultimate buildout is assumed to occur by 2040. Oakley's General Plan indicates that residential buildout within its planning area will occur at some time after 2020, but does not give a specific timeframe. The population at buildout of DWD's ultimate service area was estimated using planning information from Oakley's General Plan and Contra Costa County General Plan 2005-2020 updated in January 2005 (for the unincorporated areas of Knightsen and Bethel Island). The population was calculated based on buildout residential land uses, the average allowable residential densities, and average household sizes. The buildout population was estimated at about 75,000 persons assuming that DWD serves the entire ultimate area.

Table 2-2 presents the current DWD service area population and population projections from 2020 through 2040. Linear interpolation was used to estimate the population at 5-year intervals between 2015 and 2040. The actual growth in population over time will depend on economic and development cycles. The East Contra Costa County area has experienced alternating periods of slow growth and high growth since the 1980s.



Source: Contra Costa County Department of Conservation and Development, GIS Group, 2014

W:\REPORTS\DW\Urban Water Management Plan_March 2016\Graphics\Figure 2-1 DWD District Boundary and SOL.ai 04/11/16 JJT

Table 2-2 Current and Projected Population for DWD's Ultimate Service Area

Area	2015	2020	2025	2030	2035	2040
City of Oakley	34,900	41,400	47,800	54,200	60,600	67,000
Unincorporated Areas (Bethel Island and Knightsen)	-	1,600	3,200	4,800	6,400	8,000
Ultimate Service Area	34,900	43,000	51,000	59,000	67,000	75,000

Source: 2015 population data from DWR's population tool; population projections based on City of Oakley General Plan and Contra Costa County General Plan.

Section 3

Water Demands

This section details current and future water demands for DWD's service area. These demands comprise various water use sectors including single-family residential, multi-family residential, commercial/institutional, industrial, landscape irrigation, and other uses. Water sectors such as saline water intrusion barriers, groundwater recharge, and conjunctive use do not contribute to water demand in the DWD service area and are not discussed further. Water use projections for the service area are provided in 5-year increments to year 2040.

3.1 Service Area Demands

Table 3-1 presents 2010 and 2015 customer connections and water demand for the DWD service area. The total demand shown is the sum of metered and unaccounted-for water demands in million gallons (MG). Two flat-rate, unmetered commercial/industrial connections were in place in 2010 are not included in Table 3-1. These flat rate connections were not significant water users and were converted to metered connections in 2013. As shown in Table 3-1, DWD's customers responded aggressively to the recent drought, reducing total annual water demand by 324 MG from the 2010 water use of 1,816 MG to only 1,492 MG in 2015.

Table 3-1 Water Meters and Deliveries – 2010 and 2015

Water Use Sectors	2010		2015	
	# of Meters	Volume (MG)	# of Meters	Volume (MG)
Single Family Residential	10,028	1,450	10,740	1,109
Multi-Family Residential	15	35	20	104
Commercial/Institutional	142	115	152	70
Industrial	1	1	2	<1
Landscape Irrigation	139	127	149	115
Other (e.g., hydrants, construction)	91	28	86	33
Total Meters	10,416	--	11,149	--
Total Consumption	--	1,756	--	1,431
Unaccounted-for Water	--	60	--	60
Total Water Demand	--	1,816	--	1,492

Source: Based on DWD records.

Unaccounted-for water is the difference between total water supply production and billed consumption. All water systems have some level of unaccounted-for water, typically ranging from 5 to 10 percent of total demand. Sources of unaccounted-for water in DWD's system may include losses from system leaks, meter inaccuracies, unmetered uses of water, or other unauthorized uses. In 2015, DWD's unaccounted-for water was 4.1 percent of total water supplied (60 MG), based on the American Water Works Association's (AWWA) Water Audit Software, as required by DWR's 2015 UWMP Guidebook. The AWWA Water Audit is provided in Appendix F. Unaccounted-

for water averaged 5.6 percent between 2006 and 2015, and 5.2 percent between 2011 and 2015; these values are well within the acceptable range.

Table 3-2 presents water demand and connection projections for DWD for 2015 through 2040, based on buildout land uses and currently adopted general plans. Over the period from 2015 to 2040, DWD's demand is estimated to increase from 1,492 MG to 5,349 MG, and the number of service connections is estimated to increase from 11,149 to 22,243.

Future connections were estimated based on the calculated number of residential units and estimates of number of non-residential connections per acre from available buildout land use planning information for the service area. Linear interpolation was used to determine the number of connections at 5-year intervals from 2015 to 2040, which assumes a constant growth rate from 2015 to buildout in 2040. The DWD service area has seen periods of slow growth and periods of faster growth depending on overall economic conditions. The exact pace of buildout conditions has not been specifically defined in city and county planning documents, as mentioned in Section 2.

Single family connections equal estimated buildout number of single family housing units. Multi-family connections are based on the estimated number of multi-family housing units, assuming eight units per connection (average density for multi-family land use is eight units per acre). Non-residential connections assume one connection per approximately two acres, which is similar to the current density for areas served. DWD's current accounting system tracks accounts in a combined category for commercial/institutional. Limited growth is assumed for irrigation connections. Limited growth is assumed for others meters typically used for hydrants and construction connections as the number of meters varies throughout the year and over time.

Table 3-2 Projected Meters and Water Deliveries – 2020 through 2040

Water Use Sectors	2020		2025		2030		2035		2040	
	# of Meters	Volume (MG)	# of Meters	Volume (MG)	# of Meters	Volume (MG)	# of Meters	Volume (MG)	# of Meters	Volume (MG)
Single Family Residential	12,742	1,475	14,744	1,841	16,746	2,206	18,748	2,572	20,750	2,937
Multi-Family Residential	134	326	248	548	362	770	476	992	590	1,214
Commercial/Institutional	242	125	331	180	421	234	510	289	600	344
Industrial	2	73	2	146	3	219	3	292	3	365
Landscape Irrigation	149	124	149	133	150	142	150	151	150	160
Other (e.g., hydrants, construction)	99	36	112	39	124	41	137	44	150	47
Unaccounted-for Water	--	104	--	149	--	193	--	238	--	282
Total Meters	13,368	--	15,586	--	17,806	--	20,024	--	22,243	--
Total Water Demand	--	2,263	--	3,036	--	3,805	--	4,578	--	5,349

Buildout water usage was estimated and then linear interpolation used to determine the usage at 5-year intervals from 2015 to 2040, which assumes a constant growth rate over the entire planning period. By 2040, residential usage will comprise about 82 percent of the total use; and non-residential usage about 18 percent.

Buildout water usage for each customer sector was calculated using buildout land uses from the Oakley General Plan, the East Cypress Corridor Specific Plan, and the Contra Costa County General Plan (for Knightsen and Bethel Island), and unit demand factors for each customer type based on average use per connection over the 2011 through 2014 period. DWD considers the decreased water use seen in 2015 to be indicative of the aggressive conservation measures that were implemented by its customers in response to the Emergency Conservation Regulations, and may not be applicable to future years.

Industrial includes a future large heavy industrial user(s) to replace the former Dupont chemical manufacturing facility, which may use up to a total of 1.1 million gallons per day (mgd) on an average daily basis. Unaccounted-for water was assumed to remain at the historic average of six percent of consumption.

Open space and Delta recreation areas are not irrigated with DWD water. In addition, DWD's policy is to require that large new turf landscape areas use private groundwater wells or non-potable water for irrigation. Landscape irrigation is assumed to increase over existing levels to accommodate small or isolated areas where it is not feasible to provide another source of irrigation water. It is assumed that parks and landscape areas in new development areas, such as the East Cypress Corridor, will irrigate large landscape areas with groundwater, not with DWD water.

DWD does not provide water for agricultural uses, does not sell water to other agencies, and does not participate in exchanges or non-recurring agreements, saline barriers, groundwater banking, or groundwater recharge and conjunctive use programs.

3.2 Low-Income Water Demand

The requirements for the 2015 UWMP call for projections of water demands for low-income customers. Low-income households are classified as households that have an annual income that is 80 percent or less of the area median household income, adjusted by the number of persons in the household (California Health and Safety Code §50079.5).

DWD does not independently track all its customers by income category. Customers can choose to apply for DWD's discounted rate program for low-income senior citizens and the fully disabled. In 2015, DWD served 214 single family customers and 7 multi-family properties (with several meters each) as part of this low-income program. Table 3-3 presents those customers' 2015 water use, and projected water use for low-income program customers through 2040, based on maintaining the current percentage of DWD customers participating in the program. This low-income water use is accounted for in DWD's overall demand projections.

Table 3-3 Current and Projected Water Demands for Low-Income Customers

Type	Water Demand (MG)					
	2015	2020	2025	2030	2035	2040
Single-Family Residential	18	27	37	47	56	66
Multi-Family Residential	29	43	58	73	88	103
Total Low-Income Demand	47	70	95	120	144	169

Source: 2015 water use based on DWD records. 2020-2040 water use projected based on current use levels and maintaining the current ratio of customers participating in the reduced rate program.

3.3 Water Conservation Act of 2009 Requirements

The California Water Conservation Act of 2009, SBX7-7, requires water agencies to reduce per capita water use by 20 percent by the year 2020 (20 x 2020). In the 2010 UWMP, DWD was required to set a water use target for 2020 and an interim target for 2015. The purpose of this section is to define the water conservation targets and measure how DWD is complying with the targets, to help achieve a goal of reducing per capita water use 20 percent statewide by 2020. The section presents the baseline water use, sets mandatory compliance water use targets, and compares the current 2015 water use to the targets.

DWD is part of a regional alliance with CCWD and its other wholesale municipal customers: the Cities of Antioch, Martinez, and Pittsburg; and Golden State Water Company. As part of this regional alliance, CCWD has prepared a regional target; however, members of the alliance must determine their own baseline gross per capita water use, service area population, and individual 2015 and 2020 targets. The following sections first describe this process for DWD and then CCWD's regional alliance analysis.

3.3.1 DWD's Individual Analysis

DWR has published guidelines describing how to determine the baseline gross per capita water demand for water purveyors throughout California. The guidelines allow for use of one of four alternatives to calculate the reduction in baseline per capita demand between baseline levels and 2020 needed to demonstrate compliance. This section presents the calculation of baseline per capita demand values for DWD, interim and final water use targets, and DWD's progress towards meeting those targets.

3.3.1.1 Baseline Gross Per Capita Demand for DWD

Actual per capita water demand for DWD was determined for each calendar year from 1995 through 2010 as the total water demand (including unaccounted-for water) divided by the population. The baseline per capita water demand represents water use over a continuous multi-year base period. To account for year-to-year fluctuations in per capita water use, multi-year averages of annual per capita demand are the basis for the baseline per capita demand. Two base periods were specified by DWR for different functions of the analysis, as follows:

- For the baseline per capita demand, if recycled water made up 10 percent or more of 2008 retail water delivery, use a continuous 10- to 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010. Otherwise, only a continuous 10-

year period can be used to set the baseline per capita demand. DWD does not use recycled water; therefore, a continuous 10-year period was used as the baseline per capita demand.

- For the minimum water use reduction requirement, it is necessary to compute per capita demand over a continuous five-year base period ending no earlier than December 31, 2007, and no later than December 31, 2010. The 2020 urban water use target is not to exceed 95 percent of the per capita demand over this base period.

The averages of per capita demand over the evaluated base periods provided a basis for selecting a baseline per capita demand of 177 gallons per capita per day (gpcd), as shown in Table 3-4. DWD selected the maximum value of the base period averages, which occurred for the period of 1995-2004, to represent the baseline per capita demand. The historical populations presented in Table 3-4 were provided by DWR's Population Tool, developed in 2015 to account for published 2010 Census block population data, as required by the Act. DWD's water service area was uploaded to the Population Tool, along with the total number of connections for the Census years 1990, 2000, and 2010. The 10-year baseline per capita water use was set at 175 gpcd in 2010; however, using the DWR Population Tool a revised baseline use of 177 gpcd was calculated.

Table 3-4 Computation of Baseline Per Capita Water Demand for DWD

Year	Population ¹	Annual Demand (MG) ²	Annual Per Capita Demand (gpcd)	10-Year Average Per Capita Demand (gpcd) ³
1995	19,251	1,488	212	NA
1996	20,768	1,457	192	NA
1997	21,375	1,620	208	NA
1998	22,095	1,296	161	NA
1999	22,645	1,234	149	NA
2000	23,043	1,457	173	NA
2001	23,999	1,446	165	NA
2002	25,013	1,529	167	NA
2003	26,018	1,564	165	NA
2004	26,514	1,715	177	177
2005	26,960	1,761	179	174
2006	31,124	1,755	154	170
2007	31,108	1,943	171	166
2008	31,224	1,993	175	168
2009	32,778	1,815	152	168
2010	32,670	1,816	152	166
Baseline Per Capita Demand (maximum of multi-year average per capita demand)				177

¹ Population data was obtained through DWR's Population Tool.

² Water use data based on DWD records.

³ Ten-year averages of per capita demand for setting DWD's baseline per capita demand cannot end earlier than 2004 or later than 2010.

CWC §10608.22 specifies a minimum water use reduction requirement, which sets a value for baseline per capita demand that computed targets for compliance in 2020 are not to exceed,

unless the 5-year base period average is less than 100 gpcd. The minimum water use reduction requirement for DWD is computed in Table 3-5. This value would be used as the urban water use target per capita water demand if estimates of the urban water use target per capita water demand using other methods (described in Section 3.3.1.2) are greater. The historical populations presented in Table 3-4 were provided by DWR's Population Tool, developed in 2015 to account for published 2010 Census block population data, as required by the Act. The 5-year baseline per capita water use was set at 157 gpcd in 2010; however, using the DWR Population Tool a revised 5-year baseline use of 163 gpcd was calculated.

Table 3-5 Computation of Minimum Water Use Reduction Target for DWD

Year	Population ¹	Annual Demand (MG) ²	Annual Per Capita Demand (gpcd)	5-Year Average Per Capita Demand (gpcd) ³
2003	26,018	1,564	165	NA
2004	26,514	1,715	177	NA
2005	26,960	1,761	179	NA
2006	31,124	1,755	154	NA
2007	31,108	1,943	171	169
2008	31,224	1,993	175	171
2009	32,778	1,815	152	166
2010	32,670	1,816	152	161
Minimum Water Use Reduction Requirement (0.95 * max five-year average per capita water demand)				163

¹ Population data was obtained through DWR's Population Tool.

² Water use data based on DWD records.

³ Five-year average of per capital water demand for setting the minimum water use reduction requirement cannot end earlier than 2007 or later than 2010.

3.3.1.2 Urban Water Use Target for DWD

The urban water use target is the per capita demand that would result in compliance with the requirements of the Water Conservation Act of 2009. DWD's per capita demand in 2020 must be reduced to the urban water use target to demonstrate compliance. In addition, development of an interim urban water use target, equal to the mid-point between baseline use and the 2020 urban water use target, is required.

DWR provides four alternative methods to compute an individual urban water use target for a water supplier. DWR allows an urban water supplier to use any of the four methods. The methods are briefly summarized below:

- Method 1: 80 percent of the water supplier's baseline per capita demand.
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscaped area water use; and commercial, industrial, and institutional uses.
- Method 3: 95 percent of the applicable state hydrologic region target as stated in the State's February 2010 20x2020 Water Conservation Plan.

- Method 4: Calculates water demand savings through implementation of the conservation best management practices (BMPs). The target represents the water demand if the BMPs are implemented within the service area at saturation levels.

The urban water supplier must choose one of the four methods to set its 2020 per capita water use target. In the 2010 UWMP, DWD selected Method 3 to compute its urban water use target per capita demand. Table 3-6 presents the target setting calculations using Method 3. DWD's baseline per capita demand of 177 gpcd, computed in Table 3-4, must be reduced to 163 gpcd by 2020. The interim target for 2015 is 170 gpcd.

Table 3-6 Method 3 Computation of DWD's 20x2020 Target

Demand Category	gpcd
San Joaquin River Hydrologic Region Baseline Water Use Target	174
95% of San Joaquin River Region Target	165
Minimum Water Use Reduction Calculation (see Table 3-5)	163
Required 2020 Target (minimum of 95% of Region's Target or Minimum Water Use Reduction)	163
Baseline Daily Per Capita Water Use (see Table 3-4)	177
Interim 2015 Target (mid-point of Baseline Water Use and Required 2020 Target)	170

3.3.1.3 2015 Interim Target Compliance

A new requirement in the Act is that retail water suppliers must meet their 2015 interim urban water target by December 31, 2015, to be eligible for funding opportunities with DWR. DWD's 2015 average per capita water use was 117 gpcd, which is below the 2015 Interim Target of 170 gpcd. Table 3-7 shows DWD's compliance with the 2015 interim target.

Table 3-7 Compliance with 2015 Interim Target

2015 Interim Target	2015 Actual Per Capita Use	Adjustments	Actual as Percentage of Target	In Compliance? Y/N
170 gpcd	117 gpcd	N/A	69%	Y

3.3.1.4 2020 Target

DWD has already achieved the 2020 target of 163 gpcd. However, the prolonged drought and mandatory water use restrictions imposed by DWD have clearly resulted in major reductions in per capita water use. If the drought eases and water use restrictions are lifted, there is the potential for water use trends to rebound. DWD will need to remain vigilant in reviewing per capita water use in the interim period before 2020 to ensure it remains on track to achieve compliance in 2020.

3.3.1.5 Method for Demonstrating DWD's Compliance with the Water Conservation Bill Requirements

DWD will demonstrate compliance if the per capita demand during the final year of the 2016-2020 reporting period is less than or equal to the 2020 urban water use target. Compliance assessments will be reported in DWD's 2020 UWMP. DWD estimated recent per capita demand to determine how effective current conservation measures have been toward reducing the per capita demand from average levels over the 1995 – 2004 baseline period. As shown in Table 3-7,

DWD's urban per capita water use in 2015 was 117 gpcd, which equates to a 34 percent reduction from the baseline per capita demand of 177 gpcd and is consistent with the required 2015 interim goal of 170 gpcd.

The demand reduction currently estimated to be necessary to reduce future per capita demand to the final urban water use target is shown in Table 3-8, assuming the 2020 urban water use target remains in place for future years. DWD's per capita water use is currently below both the 2015 interim target and the 2020 target. This demonstrates that DWD's existing water conservation program has been very successful. Other factors potentially contributing to the demand reduction include recent drought conditions, the economic downturn, and a drop in Dupont's water use, which is expected to rebound in the future.

Table 3-8 Computation of Demand Reduction Needed for DWD to Comply with the Water Conservation Bill

Planning Year	Demand (MG) ¹	Population - Current and Projected ²	Per Capita Demand - Current and Projected (gpcd)	Per Capita Demand Target (gpcd) ³	Demand Reduction Needed to Reduce Projected Per Capita Demand to Target Levels (MG)
2015	1,492	34,900	117	170	0
2020	2,263	42,900	145	163	0
2025	3,035	51,000	163	163	0
2030	3,806	59,000	177	163	296
2035	4,578	67,000	187	163	592
2040	5,349	75,000	195	163	887

¹ Based on demand projections presented in Table 3-2.

² Based on 2015 population provided by DWR's Population Tool, and population projections for 2020-2040 presented in Table 2-2.

³ 2015 and 2020 urban water use targets presented in Table 3-6, assuming 2020 target remains in place after 2020.

Based on the population and demand projections shown above, per capita demand in DWD's service area is currently estimated to increase over time. To ensure compliance with the 2020 target, DWD will regularly monitor its per capita demand and maintain it to at or below the target levels. To achieve these goals, DWD may implement the following activities in the future, as needed:

- Ensure correct application of more stringent design standards related to indoor and outdoor water use for new development projects (e.g., Statewide Model Water Efficient Landscape Ordinance).
- Enforce prohibited water uses during Stage A per the Emergency Water Conservation Ordinance (see Section 5.4.2).
- Enhance demand management measure implementation (see Section 6).
- Encourage the City of Oakley and Contra Costa County to establish appropriate graywater system permitting exemptions for residential applications pursuant to regulations set by the California Building Standards Commission. California Senate Bill 1258 authorizes a city,

county, or other local agency to adopt building standards that prohibit the use of graywater, or that are more restrictive than State requirements, thus allowing residential graywater systems except where an agency specifically does not allow it. The residential graywater standard divides graywater installations into three types of systems, two of which usually require treatment:

- Clothes washer system (commonly referred to as laundry-to-landscape systems) or single fixture system, which usually does not need to be treated and can be installed without a permit when certain conditions are followed.
 - Simple system, reusing up to 250 gallons per day and requiring a permit.
 - Complex system, reusing over 250 gallons per day and requiring a permit.
- Implement residential rainwater collection: Create a policy to support permitting and regulation of residential rainwater systems. Develop a program to distribute rainwater barrels to homeowners to capture water runoff from homes for irrigation uses.
 - Require commercial rainwater collection: Create a policy that requires collection, storage, and use of rainwater from commercial roof surfaces for on-site landscape irrigation uses and establish a financial incentive program to assist property owners. Concurrently, distribute information regarding rainwater collection systems to commercial property owners and assist them in securing financial support for implementation.
 - Develop incentives for residential plumbing fixture upgrades: Plumbing retrofits, low-flow showerheads, aerators, and toilet displacement fixtures are responsible for significant water savings. DWD could increase the funding and scope associated with existing incentive programs to increase water efficiency and conservation.
 - Incentivize water conservation: DWD's billing structure could be modified to include more significant incentives for water conservation, such as additional tiers in its rate structure. However, this must be approached extremely carefully to account for the financial realities of water conveyance. DWD has certain fixed costs for water supply operation and treatment, regardless of water use levels. DWD's current tiered rates are based on the actual cost of serving water to both the upper tier and lower tier.
 - Develop a business outreach program: Create a business outreach program on water conservation to provide reduction strategies to businesses within the community.

3.3.2 CCWD's Regional Alliance Analysis

As mentioned above, DWD is submitting an individual UWMP and is meeting all SBX7-7 requirements on an individual basis. However, DWD is also participating in the CCWD Regional Alliance. The Regional Alliance Report and verification forms will be submitted by CCWD on behalf of the regional alliance member agencies. Additionally, a letter dated June 8, 2011 was submitted to DWR providing the list of water suppliers forming the regional alliance.

Section 4

Water Supply Sources

This section details current and future water supplies for DWD's service area.

4.1 Introduction

DWD's primary water supply for its distribution system is treated surface water from the United States Bureau of Reclamation's (Reclamation's) Central Valley Project (CVP) purchased from CCWD. CVP water is conveyed through the Contra Costa Canal (Canal) and Los Vaqueros system, and treated at the Randall-Bold Water Treatment Plant (WTP) in Oakley, which is jointly owned by DWD and CCWD.

In addition, DWD developed its own groundwater supply system to provide additional supply reliability. The first groundwater well came online in 2006. When fully implemented, groundwater may comprise up to 20 percent of DWD's total supply. Table 4-1 summarizes the current and projected available water supply from DWD's sources, which are described in more detail below.

Table 4-1 Current and Projected Available Water Supplies

Water Supply Sources	2015 (MG)	2020 (MG)	2025 (MG)	2030 (MG)	2035 (MG)	2040 (MG)
Surface Water Purchased from CCWD ¹	2,738	4,563	4,563	5,475	5,475	5,475
DWD Groundwater ²	672	924	924	1,176	1,176	1,176
Total Supply	3,410	5,487	5,487	6,651	6,651	6,651

¹ DWD currently has 15-million gallons per day (mgd) treatment capacity for surface water with the ability to purchase an additional 15 mgd in capacity in 5-mgd increments as needed to meet future peak demands. The 15-mgd current capacity provides an average day supply of 7.5 mgd (2,738 MG per year). A total of 30-mgd ultimate capacity for maximum day will provide an average day supply of 15 mgd (5,475 MG per year). It is anticipated that DWD will purchase 5 mgd in additional capacity in 2020 and 2.5 mgd in 2030 in order to meet demands and water quality blending goals.

² Groundwater supply in 2015 is from two potable water wells, each with approximately 2.0-mgd capacity, which supplied 240 MG in 2015. It is currently anticipated that an additional 1.5-mgd well will be developed by 2020 and another well by 2030. Ultimately, groundwater may provide up to about 20 percent of the District's supply, which would be a total ultimate well capacity of about 7 mgd.

4.2 Surface Water Purchased from CCWD

DWD purchases CVP water from CCWD, its wholesale supplier, who has a contract with Reclamation for 195,000 AF per year through February 2045. Raw surface water is supplied via the Canal that can convey water either from Rock Slough in the Sacramento-San Joaquin River Delta, Los Vaqueros Reservoir, or CCWD's other intakes on Old River and Victoria Canal (near Middle River). The Canal is owned by Reclamation and operated by CCWD. The Los Vaqueros Reservoir is a 160,000-AF storage facility located 8 miles south of Brentwood. Water to fill the reservoir comes from a pump station intake on Old River near Highway 4 or Victoria Canal near Middle River. CCWD owns and operates the Los Vaqueros Reservoir and its related intake,

pumping, conveyance, and blending facilities. The reservoir provides water quality and emergency supply benefits.

The raw surface water from the Canal and/or Los Vaqueros Reservoir is treated at the Randall-Bold WTP in Oakley. The Randall-Bold WTP is jointly owned by DWD and CCWD, and is operated and maintained by CCWD. DWD has a joint powers agreement with CCWD for 15 million gallons per day (mgd) of treated water from the Randall-Bold WTP, with the right to purchase additional capacity up to a total of 30 mgd. DWD intends to purchase additional treated surface water capacity from CCWD, when needed, as its primary supply for future development. As required by the Act, DWD's water demand projections, local supplies, and any needs for supplemental water are provided to CCWD.

Accommodating buildout of DWD's ultimate service area will require either purchase of additional excess capacity at the existing WTP, if any is available, or expansion of the existing WTP, which was initially designed and constructed with a capacity of 40 mgd and is expandable to 80 mgd. The Randall-Bold WTP was designed assuming that it would be expanded in the future to serve future development within its planned service area.

DWD's current capacity of 15 mgd from the Randall-Bold WTP provides an average day supply of 7.5 mgd (2,738 MG). A total of 30-mgd ultimate capacity for maximum day demand conditions will provide an average day supply of 15 mgd (5,475 MG). In accordance with current agreements, DWD must purchase additional supply in no larger than 5-mgd increments. It is anticipated that DWD will purchase a total of 7.5 mgd in additional capacity between 2020 and 2030 in order to meet demands and water quality blending goals for the groundwater system.

4.3 Groundwater

DWD has taken steps to protect and actively manage its groundwater basin. The sections below describe the basin characteristics, groundwater management plan, DWD groundwater supplies, and efforts related to the Sustainable Groundwater Management Act of 2014.

4.3.1 Groundwater Basin Overview

DWD and its wells overlie the northwestern portion of the Tracy Subbasin, which is 1 of 16 subbasins in the San Joaquin Valley Groundwater Basin. DWR's Bulletin 118¹ provides the following description of the Tracy Subbasin:

"The San Joaquin Valley comprises the southernmost portion of the Great Valley Geomorphic Province of California. The Great Valley is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east and the complexly folded and faulted Coast Ranges on the west. The Tracy Subbasin is defined by the areal extent of unconsolidated to semiconsolidated sedimentary deposits that are bounded by the Diablo Range on the west; the Mokelumne and San Joaquin Rivers on the north; the San Joaquin River to the east; and the San Joaquin-Stanislaus County line on the south. The Tracy Subbasin is located adjacent to the Eastern San Joaquin Subbasin on the east and

¹ DWR. 2006. *California's Groundwater: Bulletin 118, San Joaquin River Hydrologic Region, San Joaquin Valley Groundwater Basin, Tracy Subbasin*. <http://www.water.ca.gov/groundwater/bulletin118/basindescriptions/5-22.15.pdf>. January 20, 2006.

the Delta-Mendota Subbasin on the south. All of the above mentioned subbasins are located within the larger San Joaquin Valley Groundwater Basin. The Tracy Subbasin also lies to the south of the Sacramento Valley Groundwater Basin, Solano Subbasin.

The Tracy Subbasin is drained by the San Joaquin River and one of its major westside tributaries; Corral Hollow Creek. The San Joaquin River flows northward into the Sacramento and San Joaquin Delta and discharges into the San Francisco Bay.”

Bulletin 118 indicates that groundwater levels in most wells in the subbasin remained stable for at least 10 years prior to the 2006 Bulletin update. DWR does not identify the subbasin as being in overdraft conditions.

4.3.2 Groundwater Management Plan

In 2007, DWD voluntarily adopted a groundwater management plan according to the procedures outlined in the Groundwater Management Planning Act (CWC §10750-10546). The Groundwater Management Plan can be viewed at www.diablowater.org/documents. The purpose of the Groundwater Management Plan is to provide a management framework for maintaining a high quality, reliable, and sustainable supply of groundwater from the Tracy Subbasin within DWD’s sphere of influence. To accomplish this, DWD intends to manage groundwater conjunctively with its surface water resources and support basin management objectives (BMOs) directed toward the sustainability of groundwater supplies on regional and local scales (e.g., groundwater basin and subbasin). Groundwater management involves coordinated actions related to groundwater withdrawal, replenishment, and protection to achieve long-term sustainability of the resource without detrimental effects on other resources and the environment. The Groundwater Management Plan sets forth the framework and related actions necessary to accomplish DWD’s purposes while satisfying regional BMOs.

Regional BMOs addressed by the Groundwater Management Plan include the following:

- **Assessment of Groundwater Basin Conditions.** Monitoring programs and reporting on groundwater levels, groundwater quality, and pumping are necessary to ensure that undesirable effects such as long-term groundwater level declines, groundwater quality degradation, and significant inelastic land subsidence are avoided. Regional coordination of groundwater monitoring is important, and monitoring programs should be reevaluated periodically. Currently, comprehensive regional evaluation is not conducted on a regular basis. However, results from individual monitoring programs are made available to other agencies to aid in effective groundwater resource management and accomplishment of BMOs.
- **Avoidance of Overdraft.** It is important that groundwater pumping in the Tracy Subbasin not exceed the sustainable yield of the subbasin in order to avoid chronic water level declines that could lead to overdraft conditions or cause significant inelastic land subsidence.
- **Preservation of Groundwater Quality.** This objective involves actions needed to sustain a supply of good quality groundwater for beneficial uses in the basin. It includes coordinated efforts that identify short- and longer-term water quality trends, wellhead and recharge

area protection, and actions to avoid salt accumulation and/or mobility of naturally occurring constituents. It also includes active characterization and solution of any groundwater contamination problems through cooperation with responsible parties or through independent action.

- **Preservation of Interrelated Surface Water and Groundwater Resources.** Several entities in the Tracy Subbasin, including DWD, use both surface water and groundwater. There are opportunities to expand these programs in the future and to increase the use of recycled water to meet existing and projected demands.

Local BMOs addressed by the Groundwater Management Plan include the following:

- **Understanding Local Groundwater Conditions.** Monitoring programs and reporting on groundwater levels, groundwater quality, and pumping have been implemented to assess groundwater conditions in the DWD service area. These programs are necessary to ensure that undesirable effects such as long-term groundwater level declines, groundwater quality degradation, and significant inelastic land subsidence are avoided.
- **Preservation of Groundwater Quality.** This objective involves actions needed to sustain a supply of good quality groundwater in the DWD service area. It includes coordinated efforts that identify short- and longer-term water quality trends, wellhead and recharge area protection, and actions to avoid salt accumulation and/or mobility of naturally occurring constituents.
- **Avoid Impacts to Shallow Groundwater.** This objective involves actions needed to avoid deleterious impacts to shallow wells that exist throughout DWD's sphere of influence. These wells may serve individual households or small community systems.
- **Local Groundwater Monitoring and Coordination with Regional Monitoring Program.** DWD has conducted intermittent monitoring of groundwater levels and quality within its service area. Coordination of the DWD groundwater monitoring program with other regional monitoring programs will eliminate duplication and ensure that adequate monitoring is being conducted and enhance its own understanding of conditions in its area.

To accomplish the BMOs discussed above, the Groundwater Management Plan incorporates a number of components that are divided into five categories: 1) monitoring program; 2) water resource sustainability; 3) groundwater resource protection; 4) agency coordination and public outreach; and 5) plan implementation and updates. The Groundwater Management Plan components reflect the focus on local groundwater management in the Tracy Subbasin by DWD and continuing cooperation with the members of the ECWMA and other stakeholders in the subbasin. The components, listed below, include actions to accomplish the regional and local BMOs.

- Category 1: Monitoring Program
 - 1A. Elements of Monitoring Program
 - 1B. Evaluation and Reporting of Monitoring Data

- Category 2: Water Resource Sustainability
 - 2A. Maintaining Stable Groundwater Levels
 - 2B. Water Conservation
 - 2C. Implementation of Conjunctive Water Management
 - 2D. Integration of Recycled Water
- Category 3: Groundwater Resource Protection
 - 3A. Well Construction and Destruction Policies
 - 3B. Management and Mitigation of Contaminated Groundwater
 - 3C. Long-Term Salinity Management
 - 3D. Identification and Management of Recharge Areas and Wellhead Protection Areas
- Category 4: Agency Coordination and Public Outreach
 - 4A. Continuation of Local, State, and Federal Agency Relationships
 - 4B. Public Outreach
 - 4C. Water Awareness Education
- Category 5: Plan Implementation and Updates
 - 5A. Plan Implementation and Reporting
 - 5B. Provisions to Update the Groundwater Management Plan

4.3.3 DWD Groundwater Supply Facilities

DWD is operating a groundwater supply system that provides additional supply reliability. The system currently consists of groundwater from two wells in Oakley, conveyed in a dedicated well supply pipeline to a blending facility located near the Randall-Bold WTP. At the blending facility, the groundwater is treated and blended with treated surface water within DWD's distribution system, prior to distribution to any customers, so that there is negligible impact on water quality. The amount of groundwater used in proportion to surface water is automatically controlled to maintain good water quality with a target hardness of 140 milligrams per liter (except in times of drought when the target hardness may be higher).

The first phase of the groundwater supply system included a 320-foot deep well and pump station located in Glen Park in Oakley, the blending facility at the Randall-Bold WTP, and an 18-inch diameter, 18,250-foot-long dedicated well supply pipeline connecting the well and the blending facility. The pipeline is sized for the anticipated ultimate groundwater use of seven mgd to allow flexibility to meet future demands; however, installation of the pipeline does not commit DWD to implementing future phases of the well project. The Glen Park Well was put into service in 2006 and has a pumping capacity of approximately 2.0 mgd.

A second well, the Stonecreek Well, was placed into service in June 2011. The Stonecreek Well is approximately one-half mile northeast of the existing Glen Park Well and constructed to similar standards. The Stonecreek Well has a pumping capacity of approximately 2.0 mgd and a yield similar to that of the Glen Park Well at 336 MG per year. Figure 4-1 presents the facilities of DWD's Well Utilization Project.

Table 4-2 presents the amount of groundwater supplied by DWD's two wells from 2011 through 2015. The amount of groundwater used during this period was below full groundwater capacity, reflective of water conservation efforts that were in place throughout the DWD service area. There were no limitations or challenges in the sufficiency of groundwater pumped. DWD is actively monitoring its local groundwater, especially near the wells, and no water quality issues have arisen.

Table 4-2 Groundwater Use from 2011 to 2015

Year	2011	2012	2013	2014	2015
Groundwater Supply (MG)	399	212	256	314	240

Source: DWD records.

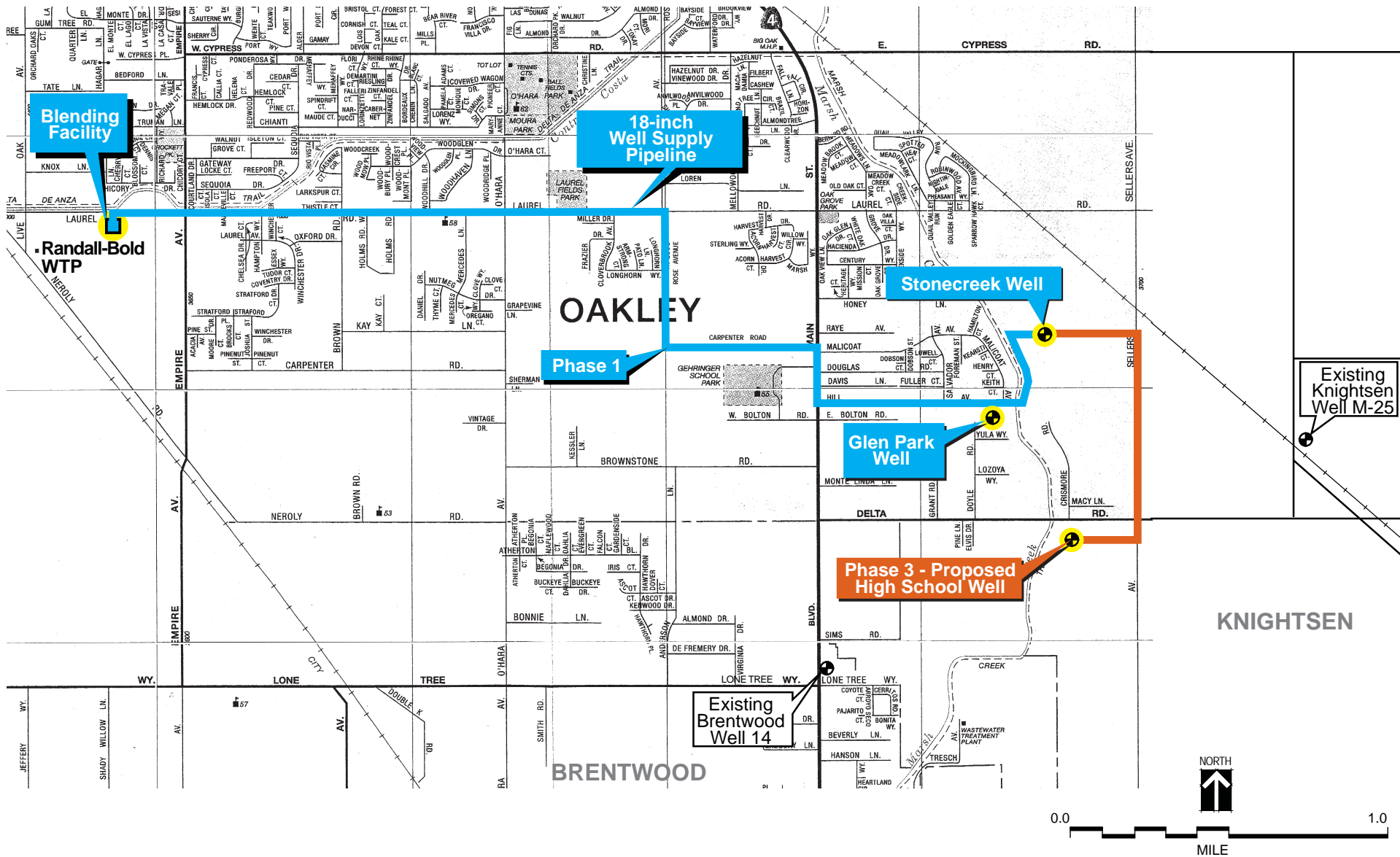
Each pump motor is operated using a variable frequency drive which allows DWD to control the flow rate produced from each well. The wells operate year-round to reduce annual operating costs, since groundwater supply is lower cost than surface water, and at higher flow rates to meet peaking needs during the higher demand summer months. DWD operates one or more wells at a time, at a variety of flow rates, based upon time of use periods, and seasonal groundwater basin water quality parameters and elevations.

Table 4-1 presents the projected amount of groundwater available from the Well Utilization Project through 2040. With completion of the second well, DWD developed a total groundwater supply capacity of 4.0 mgd. By 2020, DWD expects to develop an additional 1.5 mgd in well capacity, and another 1.5 mgd in well capacity by 2030. Ultimately, groundwater may provide up to about 20 percent of DWD's supply, which would be a total ultimate well capacity of about 7 mgd. Future wells are assumed to have the same ratio of pumping capacity to annual yield as the Glen Park well.

DWD will implement additional wells in future phases. Future wells may also be located in the eastern part of DWD's Sphere of Influence. Specific locations of such wells will be determined as part of future well siting studies. DWD will base the decision to expand the groundwater supply system on the performance of the Glen Park and Stonecreek Wells. Based on available information, it is possible that up to seven mgd of ultimate pumping capacity can be achieved from the local groundwater basin; however, the long-term ability of the groundwater basin to provide these quantities is not known with certainty. As the first and second wells continue to be operated, ongoing data collection and monitoring conducted by DWD will provide better information. If future investigations indicate that it will not be possible to provide the anticipated amount of groundwater supply to meet demands, then DWD will either procure additional surface water supply from CCWD and/or investigate other local supply sources.

4.3.4 Local Groundwater Basin Characteristics

DWD's existing and future wells are located in a groundwater basin that has been studied since the late 1990s by Luhdorff & Scalmanini Consulting Engineers (LSCE). The last LSCE study of the groundwater basin was the "Investigation of Groundwater Resources in East Contra Costa County" (March 1999). The groundwater basin is not adjudicated and has not been studied by DWR beyond the information provided in Bulletin 118. The groundwater basin is not overdrafted.



The wells are located within the region identified as the Marginal Delta Dunes in LSCE's 1999 study. The 1999 study, and subsequent detailed investigations by LSCE, identified a favorable hydro-geologic area for well locations within DWD's service area. When groundwater is withdrawn from an aquifer, groundwater levels are lowered around the well, creating a cone of depression. Additional pumping could increase the amount of drawdown and decrease the productivity of existing wells in the area. Under certain conditions this could result in a lowered water table, which in turn could adversely affect certain shallow wells, trees, and creeks. However, the potential for such impacts from DWD's groundwater supply system has been investigated several times and found to be low, as described below.

In 1999, a regional groundwater investigation was completed for DWD. This investigation determined that there is a hydraulic connection with the alluvial plain to the south, where a significant amount of groundwater pumping already exists for municipal uses (City of Brentwood) and agricultural uses (ECCID). As part of the regional groundwater investigation, test borings and wells were completed to obtain geological and water quality information. LSCE also conducted an investigation of potential impacts on nearby wells in 2002. Approximately 35 wells, including the Knightsen municipal well, private domestic wells, and irrigation wells, were identified within 2,500 feet of the Glen Park well site. Thirty-four of these wells are shallower than 200 feet.

The deep annular seal of each of the Glen Park and Stonecreek Wells extends to 200 feet below the ground surface and serves to isolate nearby wells from significant pumping impacts. The results of testing performed by DWD to date indicates that the operation of the Glen Park Well since 2006 has had no measurable or discernable impact on the water levels or water quality in nearby shallow wells. In March/April 2007, DWD drilled a test hole and monitoring well at the Stonecreek site to assess hydrogeologic conditions and suitability for siting of a production well. The results indicated the site to be similar with regards to consistency in samples and geophysical logs as compared to the Glen Park site; as a result, it is anticipated that the maximum pumping capacity from the Stonecreek Well site is approximately two mgd. Evaluation of groundwater levels from a 150-foot deep well approximately 2,000 feet from the Stonecreek well has shown no discernable impact on water levels since the operation of DWD's well.

Besides demand and blending constraints, other considerations may dictate that pumping be limited to less than the maximum capacity stated above. These other considerations include mutual pumping interference, potential impacts to local wells, and groundwater management considerations as contained in DWD's Groundwater Management Plan. The plan embodies an impact-avoidance strategy based on phased development and ongoing testing and monitoring to ensure that pumping from DWD facilities do not induce adverse impacts on local and regional scales.

As part of the Groundwater Management Plan, DWD will continue to monitor groundwater levels and consult other well operators to monitor effects on other wells in the region. In the event local wells were to be adversely affected (i.e., lowering of groundwater below existing pumps or degradation of water quality), decisions about mitigation actions would be made on a case-by-case basis. Mitigation measures may include, but not be limited to, supplying the property with a different source of water, lowering or replacing pumps, or installing new wells.

4.3.5 Sustainable Groundwater Management Act Activities

As mentioned in Section 1.2, DWD is forming a GSA with other East Contra Costa County agencies to assess the conditions in the local basin and adopt a locally-based sustainability management plan. A GSA is able to require registration of groundwater wells, measure and manage groundwater extraction, require reports from groundwater users, and assess fees to support the creation of a groundwater sustainability plan (GSP).

The Tracy Subbasin has been designated as a medium-priority basin by DWR, and is not in overdraft conditions. As such, the GSA must adopt a GSP by January 31, 2022. The GSP must include a physical description of the basin, including groundwater levels, groundwater quality, subsidence, information on groundwater-surface water interaction, data on historical and projected water demands and supplies, monitoring and management provisions, and a description of how the plan will affect other plans, including city and county general plans. All medium priority basins must achieve sustainable management of the basin within 20 years of adopting a GSP.

4.4 Other Water Sources

This section discusses the wastewater and recycled water service in the DWD service area, and other potential water supply sources for both DWD and CCWD.

4.4.1 Wastewater and Recycled Water

This section provides information on the wastewater and recycled water service provided by Ironhouse Sanitary District (ISD), the only agency collecting, treating, or discharging municipal wastewater both generated and treated within the DWD service area. ISD owns and operates the wastewater treatment and collection systems in DWD's service area. ISD's service area encompasses all of DWD's service area, along with Jersey Island and part of Holland Tract.

The Water Recycling Facility, completed in 2011, produces tertiary-treated recycled water using membrane bioreactor (MBR) basins and ultraviolet disinfection. The average daily flow to the plant in 2015 was 2.3 mgd. The dry weather treatment capacity is approximately 4.3 mgd. Wastewater is collected and conveyed to the Water Recycling Facility by a network of gravity sewer mains and force mains where needed due to ground elevations.

4.4.1.1 Wastewater Collection, Treatment, and Disposal

Table 4-3 shows the wastewater flows generated within ISD's service area that are collected and conveyed to the Water Recycling Facility. These quantities include flows from Bethel Island (which does not currently receive drinking water from DWD) as well as the Oakley area. The average daily flow in 2015 was 2.3 mgd and the maximum daily flow was 3.8 mgd.

Table 4-3 Current and Projected Wastewater Generated and Collected in ISD Service Area

	2015		Projected				
	Projected in 2010 UWMP	Actual	2020	2025	2030	2035	2040
Average Daily Flows (mgd)	2.8	2.3	4.0	5.0	6.0	7.0	8.0

Currently, recycled water is either stored on-site in a 76-MG holding pond for distribution through fill stations, recycled by being land-applied on ISD-owned agricultural land on Jersey Island (outside the DWD service area), or conveyed to an outfall pipe in the San Joaquin River.

4.4.1.2 Recycled Water System

In October 2011, ISD completed construction of its new Water Recycling Facility. The new facility has an average operating capacity of 4.3 mgd with future expansion capacity up to of 6.8 mgd. The facility accepts raw sewage from the ISD service area. The raw sewage enters the influent pump station which delivers the water to the headworks building where it undergoes two-stage screening, grit removal, and metering. From there, it enters the drum screens. Wastewater is then piped to the anoxic/aeration basins to remove soluble matter and nitrogenous compounds from the wastewater. The water is then lifted to the MBR basins and disinfected using ultraviolet light. This process treats the water to Title 22 unrestricted reuse requirements.

4.4.1.3 Recycled Water Beneficial Uses

Currently, the effluent recycled water from ISD's Water Recycling Facility is land-applied on agricultural land that ISD owns on nearby Jersey Island. On June 20, 2015, ISD officially opened a Residential Recycled Water Fill Station. The Fill Station allows the Oakley and Bethel Island residents free access to available recycled water at the ISD headquarters. Residents are required to fill out an agreement form that states how the recycled water will be used, what type of container the water will be collected in, along with information regarding recycled water. The recycled water at the Fill Station is intended to be used for watering trees, gardens, vegetables, lawn irrigation, washing cars, cleaning outdoor furniture, and washing hard surfaces. Starting in October 2015, the Fill Station waters were made available to non-residents for a fee of \$1 per load.

4.4.1.4 Actions to Encourage and Optimize Future Recycled Water Use

Since all wastewater is currently recycled by ISD, DWD is taking no current actions to encourage or optimize additional use of recycled water. DWD's policy is to require that large new turf landscape areas use private groundwater wells or non-potable water for irrigation. The separate irrigation systems to serve these areas could be supplied by recycled water if such a system is determined to be economically feasible by ISD.

In the future, if DWD identifies large potential users of recycled water within its service area, DWD will coordinate with ISD to determine whether an economic feasibility study may be warranted. For example, such users may include large industries requiring cooling water or other non-potable uses, or large landscape areas that would otherwise irrigate with potable water.

ISD is in the process of revising its recycled water master plan and is working aggressively to develop a market for recycled water. ISD is working with the City of Oakley to evaluate ways to develop recycled water infrastructure to the new developments along the East Cypress corridor as a cost-neutral alternative to well water use for irrigation.

4.4.2 Water Transfers and Exchanges

Most of DWD's water is purchased from CCWD; therefore, no exchange or transfer opportunities exist for DWD except through CCWD. CCWD anticipates meeting supply shortfalls through a combination of short-term demand management measures and/or water transfers.

CCWD's location in the Sacramento-San Joaquin River Delta provides access to supplies from the Sacramento and San Joaquin Rivers and their tributaries. In addition, the DWR State Water Project (SWP) and CVP direct their supplies through the Delta to delivery points in the San Joaquin Valley and Southern California. CCWD's location provides direct or indirect access to virtually all water supply and storage facilities in the Central Valley.

Current and future opportunities through CCWD are summarized below.

4.4.2.1 East Contra Costa Irrigation District Contract for Long-Term Water Transfer

CCWD's February 2000 Agreement with the ECCID is for a long-term water transfer. It provides up to approximately 2,296 MG (8,200 AF) in normal years and includes provisions for an additional 1,120 MG (4,000 AF) through groundwater exchange when the CVP is in a shortage condition.

4.4.2.2 Other Long-Term Water Transfer Opportunities

CCWD anticipates that an additional water transfer will be needed in the future. The following water transfer opportunities are evaluated on an ongoing basis by CCWD:

- **Conjunctive Use with Long-term Contract:** CCWD could partner with an agricultural district holding surface water rights and co-invest in conjunctive use facilities, such as new groundwater wells. The new wells could allow the agricultural district to shift use from surface water to groundwater supplies in dry years and exchange its surface water supplies to CCWD to meet dry year demand.
- **Groundwater Banking:** CCWD could extend the reliability of its existing CVP supplies by groundwater banking, through groundwater storage, surplus CVP entitlement, or other available wet year supplies. CCWD could draw upon the banked water supplies to meet demand when needed.
- **Lease/Purchase Water Rights and Remarket Surplus Supplies:** CCWD could 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 could be remarketed through a long-term contract with a third-party buyer or the spot market.
- **Co-Investment in Agricultural Conservation:** This option could involve forming a long-term relationship with an agricultural partner holding surface water rights. CCWD could invest in agricultural conservation infrastructure, such as canal lining and weed abatement projects. A fixed amount of conserved supplies could 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 could fallow land or shift crops to make water supplies available.

4.4.2.3 Short-Term Water Transfers

CCWD has experience in implementing short-term water transfers. For example, CCWD purchased approximately 952 MG (3,400 AF) from Western Water in 2000 and 1,400 MG (5,000 AF) from Yuba County Water Agency in 2003 and 2004. CCWD also purchased 560 MG (2,000 AF) of transfer water from Woodbridge Irrigation District in 2013. This supply was conveyed through the CCWD-East Bay Municipal Utility District (EBMUD) intertie, which was constructed in 2007. 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.

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

4.4.3 Desalinated Water

Desalination involves removing salts and impurities from seawater or non-potable surface water or groundwater using treatment technologies such as reverse osmosis membranes or distillation methods. Desalination facilities are costly to construct and operate relative to DWD's current supply sources. There are also significant environmental and permitting issues associated with the water intake and with disposal of brine from the treatment process.

CCWD, in partnership with five other major Bay Area water agencies, including Alameda County Water District, Zone 7 Water Agency, EBMUD, San Francisco Public Utilities Commission, and Santa Clara Valley Water District, jointly developed a regional brackish water desalination pilot project (Bay Area Regional Desalination Project or BARDP) to evaluate ways to improve the region's water supply reliability, especially during droughts and emergencies. In 2007, the agencies completed a Feasibility Study, which identified three potential Bay Area locations for a regional desalination project. A pilot study was conducted in 2009 to 2010 at CCWD's Mallard Slough Pump Station that demonstrated that desalination is technically feasible, pending further development of institutional and other technical issues related to environmental impacts, water rights and water conveyance. Through 2014, the partners performed site-specific hydraulic studies to determine available capacity in transmission lines, water quality changes, and storage optimization options. A broader coalition of Bay Area water agencies is currently evaluating the project as part of a regional reliability study.

BARDP could 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 BARDP 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; and

- Promoting strong regional cooperation through joint ownership, operation, and management of a regional facility serving the needs of multiple Northern California water districts.

4.4.4 Non-Potable Water

DWD no longer uses its existing well at the Rose Avenue Corporation yard under normal conditions due to poor water quality. It is a standby emergency well only. The well is 12 inches in diameter and has a capacity of 1,100 gallons per minute (gpm). The well has not been used to any extent over the past 15 years.

In 2009, DWD explored the option of using the Rose Avenue well as a non-potable supply. The potential project would utilize the poor quality well water for construction water purposes. A connection would be made from the well to a fill hydrant to be located at the ISD parking lot, which is adjacent to the DWD Corporation Yard and well. DWD did not move forward with this project in 2009 because drought conditions lessened and the additional supply was not necessary. This project could be implemented at any time if a source of non-potable supply is needed to lessen potable demands.

4.4.5 Indirect Potable Water Reuse

DWD currently does not use and does not have any plans to implement indirect potable water reuse.

Section 5

Water Supply Reliability and Shortage Contingency Plan

This section of the UWMP describes the reliability of each of DWD's water supplies, compares planned water supplies with projected water demand between 2020 and 2040, and discusses factors that affect water supply reliability. This evaluation of water reliability requires the integration of information provided in previous sections of this UWMP, including Section 3, which presents DWD's projection of water demands, and Section 4 describing and quantifying the various local and imported sources of water supply available to meet water demands. Section 5 also includes DWD's Water Shortage Contingency Plan

5.1 Water Supply Reliability by Source

5.1.1 Surface Water from CCWD

CCWD, DWD's wholesale supplier of surface water, provided information regarding its supply reliability to year 2040 in the February 16, 2016 letter included in Appendix G. CCWD's supply planning includes all of its supply sources, including surface water from the CVP. The CCWD supply reliability conditions are:

- Normal (average) year: 2004 conditions;
- Single-year drought: 1977 conditions; and
- Multiple-year drought sequence: 1990-1992 conditions.

CCWD's water supply planning includes other supply sources to make up for cutbacks in CVP supply, e.g., transfer/exchange agreements discussed in Section 4.4.2, in order to meet their supply reliability goals. The water supply reliability goal approved by the CCWD 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 by CCWD and a voluntary short-term conservation program by CCWD retail customers, and its wholesale customers, including DWD.

CCWD expects to meet demands to 2040 under all supply conditions except the second and third year of a drought. Additional actions will be needed under the second year of a three-year drought starting in 2035 and in the third year of a three-year drought starting in 2020. These actions include short-term water purchases by CCWD, in conjunction with a request for a 2 to 15 percent demand reduction. Table 5-1 summarizes the expected reliability of supplies during a normal year, a single dry year, and a multiple-year drought period. As indicated in Table 5-1, DWD should not experience any severe rationing during a three-year drought or other shortage situation. During the critical 1977/1978 drought, DWD customers voluntarily conserved water to such an extent that DWD did not need to impose mandatory rationing.

Table 5-1 Summary of CCWD Water Supply Reliability (% of Demand)

Year	Normal Water Year	Single Dry Year	Multi-Year Drought		
			Year 1	Year 2	Year 3
2020	100%	100%	100%	100%	90%
2025	100%	100%	100%	100%	90%
2030	100%	100%	100%	100%	90%
2035	100%	100%	100%	98%	88%
2040	100%	100%	100%	94%	85%

Source: Appendix G, CCWD Supply Reliability Analysis.

5.1.2 Groundwater

As discussed in Section 4.3, DWD is implementing its Well Utilization Project and has been using this supply continuously since 2006. The groundwater is available to supplement surface water supplies. If surface supplies are reduced, DWD will operate its wells to make up the difference. The combination of surface water and groundwater supply will meet all of DWD's demands.

The first well has a capacity of 2 mgd. The second well, placed into service in June 2011, also provides approximately 2 mgd. Future wells are planned that will ultimately increase the groundwater supply up to a maximum capacity of 7 mgd, providing up to 20 percent of DWD's total supply. DWD does not utilize a 100 percent groundwater supply on a regular basis given DWD's commitment to keeping the hardness of the water to its customers as low as possible. During times of drought, DWD will utilize more of the groundwater supply. If future investigations indicate that it will not be possible to provide the anticipated amount of groundwater supply, then DWD will either procure additional surface water supply from CCWD and/or investigate other local supply sources.

5.2 Water Reliability by Categorical Year Type

The water supply reliability assessment shown in Tables 5-2 through 5-4 presents comparisons of water supply and demand for three hydrologic year types: normal; single dry year; and multiple dry years. Results of the comparisons show surpluses of water supply compared with demand all conditions. The data used to develop these comparisons reflects the variability in surface water supplies from CCWD, as shown in Table 5-1. As indicated in Tables 5-2 through 5-4, DWD has adequate supply sources to meet future needs under all conditions.

Table 5-2 Water Supply and Demand Comparison for a Normal Hydrologic Condition

Supply / Demand (MG)	2020	2025	2030	2035	2040
CCWD ¹	4,563	4,563	5,475	5,475	5,475
DWD Groundwater ²	924	924	1,176	1,176	1,176
Total Supply	5,487	5,487	6,651	6,651	6,651
Demand Projection	2,263	3,036	3,805	4,578	5,349
Additional Conservation ³	0	0	296	592	887
Total Demand	2,263	3,036	3,509	3,986	4,462
Surplus/(Deficit) ⁴	3,224	2,451	3,142	2,665	2,189
Surplus/(Deficit) as % of Supply	59%	45%	47%	40%	33%
Surplus/(Deficit) as % of Demand	142%	81%	90%	67%	49%

¹ Based on supply available from CCWD shown in Table 4-1, applying reliability factors shown in Table 5-1.

² Based on supply available from groundwater shown in Table 4-1.

³ Estimate of demand reduction needed to maintain urban water use target 163 gpcd after 2020.

⁴ Total supply minus total demand.

Table 5-3 Water Supply and Demand Comparison for a Single Dry Year Hydrologic Condition

Supply / Demand (MG)	2020	2025	2030	2035	2040
CCWD ¹	4,563	4,563	5,475	5,475	5,475
DWD Groundwater ²	924	924	1,176	1,176	1,176
Total Supply	5,487	5,487	6,651	6,651	6,651
Demand Projection	2,263	3,036	3,805	4,578	5,349
Additional Conservation ³	0	0	296	592	887
Total Demand	2,263	3,036	3,509	3,986	4,462
Surplus/(Deficit) ⁴	3,224	2,451	3,142	2,665	2,189
Surplus/(Deficit) as % of Supply	59%	45%	47%	40%	33%
Surplus/(Deficit) as % of Demand	142%	81%	90%	67%	49%

¹ Based on supply available from CCWD shown in Table 4-1, applying reliability factors shown in Table 5-1.

² Based on supply available from groundwater shown in Table 4-1.

³ Estimate of demand reduction needed to maintain urban water use target 163 gpcd after 2020.

⁴ Total supply minus total demand.

Table 5-4 Water Supply and Demand Comparison for a Multiple-Dry Year Hydrologic Condition

Year	Supply / Demand (MG)	2020	2025	2030	2035	2040
First Year of Supply	CCWD ¹	4,563	4,563	5,475	5,475	5,475
	DWD Groundwater ²	924	924	1,176	1,176	1,176
	Total Supply	5,487	5,487	6,651	6,651	6,651
	Demand Projection	2,263	3,036	3,805	4,578	5,349
	Additional Conservation ³	0	0	296	592	887
	Total Demand	2,263	3,036	3,509	3,986	4,462
	Surplus/(Deficit) ⁴	3,224	2,451	3,142	2,665	2,189
	Surplus/(Deficit) as % of Supply	59%	45%	47%	40%	33%
	Surplus/(Deficit) as % of Demand	142%	81%	90%	67%	49%
Second Year of Supply	CCWD ¹	4,563	4,563	5,475	5,366	5,147
	DWD Groundwater ²	924	924	1,176	1,176	1,176
	Total Supply	5,487	5,487	6,651	6,542	6,323
	Demand Projection	2,263	3,036	3,805	4,578	5,349
	Additional Conservation ³	0	0	296	592	887
	Total Demand	2,263	3,036	3,509	3,986	4,462
	Surplus/(Deficit) ⁴	3,224	2,451	3,142	2,555	1,860
	Surplus/(Deficit) as % of Supply	59%	45%	47%	39%	29%
	Surplus/(Deficit) as % of Demand	142%	81%	90%	64%	42%
Third Year of Supply	CCWD ¹	4,106	4,106	4,928	4,818	4,654
	DWD Groundwater ²	924	924	1,176	1,176	1,176
	Total Supply	5,030	5,030	6,104	5,994	5,830
	Demand Projection	2,263	3,036	3,805	4,578	5,349
	Additional Conservation ³	0	0	296	592	887
	Total Demand	2,263	3,036	3,509	3,986	4,462
	Surplus/(Deficit) ⁴	2,767	1,994	2,594	2,008	1,368
	Surplus/(Deficit) as % of Supply	55%	40%	43%	33%	23%
	Surplus/(Deficit) as % of Demand	122%	66%	74%	50%	31%

¹ Based on supply available from CCWD shown in Table 4-1, applying reliability factors shown in Table 5-1.

² Based on supply available from groundwater shown in Table 4-1.

³ Estimate of demand reduction needed to maintain urban water use target 163 gpcd after 2020.

⁴ Total supply minus total demand.

5.3 Factors Affecting Supply Reliability

Several factors affect water supply reliability in DWD's service area for both surface water and groundwater, including:

- Existing or potential future water quality;
- Potential impacts of long-term climate change;
- Environmental issues; and
- Non-drought conditions.

The impact of these factors on supply yield depends upon many issues unique to each type of supply, discussed in more detail in the subsections that follow. This section summarizes the reliability of each source of supply and the influence of reduced yields on DWD's ability to meet current and projected water demand. Reductions from normal supply volume are a result of these factors. To assess their impact on current water supplies, Table 5-5 provides an estimate of the minimum water supply volume from CCWD surface water and DWD groundwater during each of the next three years, based on the information presented in the subsections that follow.

Table 5-5 Estimated Minimum Water Supply Over the Next Three Years (2016-2018)

Water Supply Source	2016	2017	2018
Surface water ¹	2,053	2,053	2,053
Groundwater ²	672	672	672
Total	2,725	2,725	2,725

¹ Based on CCWD's supply reliability analysis which assumed continuing drought conditions, providing 75% of demand in each year.

² Based on DWD's groundwater supply reliability under multiple dry year conditions.

5.3.1 Water Quality

DWD tests the water quality of its supplies daily, weekly, monthly, and annually. Once a year, DWD issues a water quality report, which is called the Annual Consumer Confidence Report and reports water testing results. Current and past Consumer Confidence Reports are available on DWD's website at <http://www.diablowater.org/waterquality/>. The latest report, from 2014, is included as Appendix H.

5.3.1.1 Surface Water

The Los Vaqueros Reservoir is part of the CCWD raw water supply system. DWD is no longer subject to the impacts of seasonal or climatic shortages as severely as before the Los Vaqueros Reservoir was in service. Prior to construction of the 100,000-AF Los Vaqueros Reservoir in 1998, surface water quality was affected by seasonal shortages or dry hydrologic conditions. During periods of water shortage there are insufficient river flows in the Delta to push back the salt water from the San Francisco Bay. As a result, salt water flows into the Delta thus reducing the quality of the water at the water supply intakes located at Rock Slough and Old River. In 2012, CCWD completed an expansion of Los Vaqueros Reservoir that increased the storage capacity to 160,000 AF and raised the dam height by 34 feet. The project improved water quality especially during droughts and in late summer/fall months, and improved water supply reliability. A further expansion of the reservoir to 275,000 AF has also been studied and could be implemented if additional partners and funding are secured.

The quality of the water in the Delta is typically measured by its chloride content. Current drinking water standards require chloride concentrations not to exceed 250 parts per million (ppm), with short term limits of 500 to 600 ppm. The chloride concentration at the water supply intakes has historically fluctuated between 20 and 250 ppm and in some instances has gone above 250 ppm during drought conditions. Low chloride concentration water is transferred into the Los Vaqueros Reservoir when higher-quality water is available. The stored water is then blended as needed with water from the water supply intakes in order to achieve a consistent water quality of 65 ppm 100 percent of the time.

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 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 1,900-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 AF 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.

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 River 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 Project 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 were documented in a report in March 2011.

5.3.1.2 Groundwater

DWD's Well Utilization Project is being implemented to provide additional water supply. Treatment and monitoring are provided at the centralized blending facility to ensure that all drinking water standards are met. A water quality evaluation of the first well, the Glen Park Well, indicated that the groundwater is generally of good quality. Based on the water quality data, the only treatment required on water from the well system is disinfection. Water from the two wells is blended to ensure compliance with all Maximum Contaminant Level requirements.

Based on several groundwater investigations conducted by LSCE from 1999 through April 2004, it has been determined that the proposed groundwater pumping at a rate of one to two mgd would not induce groundwater quality degradation locally or regionally. This assessment was confirmed during the testing of the Glen Park Well in April 2004, when it was found that water

quality was essentially the same as found in the monitoring well previously installed in Glen Park. DWD will monitor groundwater quality continuously during the system's operation.

The most common scenario would be water quality degradation by introducing nitrates from the shallower aquifer and manganese from the deep aquifer. However, groundwater quality impacts are unlikely to occur given the presence of multiple clay layers between the aquifers, and the 200-foot annular seal on the deep well.

5.3.2 Climate Change

While climate change is a global-scale concern, it is particularly important in the West and Pacific Coast of the United States where water resources are currently constrained. As such, California is leading the way with laws that require reductions in greenhouse gas emissions and requirements to incorporate climate change and impacts in water planning.

To understand some of the key issues surrounding climate change impacts, it is important to put it into the context of DWD's water supplies. California lies within multiple climate zones. Therefore, each region will experience unique impacts to climate change. Because DWD relies on both local and imported water sources, it is necessary to consider the potential impacts climate change could have on locally as well as the Sierra Nevada watershed where a significant portion of imported water originates.

Generally speaking, any water supplies that are dependent on natural hydrology are vulnerable to climate change, especially if the water source originates from mountain snow pack. In addition to water supply impacts, changes in local temperature and precipitation are expected to alter water demand patterns. Scientists predict future scenarios using highly complex computer general circulation models (GCMs). Although most of the scientific community agrees that climate change is occurring and, as a result, mean temperatures for the planet will increase, the specific degree of this temperature increase cannot be accurately predicted. Predictions of changes in precipitation are even more speculative, with some scenarios showing precipitation increasing in the future and others showing the opposite. To place the global coarse-scale climate projections to a regional level that incorporates local weather and topography, the GCMs are "downscaled". Generally, the GCMs predict the following impacts throughout California:

- An increase in average temperatures that will be more pronounced in the summer than in the winter;
- An increase in heat waves and droughts that will extend for a longer duration;
- A decrease in precipitation that, coupled with higher temperatures, will increase evaporation/transpiration; and
- An increase in short-duration/high volume intense storm events during the winter.

The impacts of these climate effects will likely be increased water demands for irrigation and cooling purposes, and decreased total local surface runoff. Other impacts might include increased fire events that could impact water quality and sedimentation, as well as decreased groundwater recharge due to lower soil moisture.

Most studies on climate change impacts to California's water supply have been conducted for the Northern California region, which supplies both the CVP and the SWP. The 2008 Reclamation Central Valley Operations Criteria and Plan evaluated the sensitivity of CVP and SWP deliveries to potential climate change and related sea level rise. Reclamation presented results from the CalSim II model, which simulates key water resources infrastructure in the Central Valley and Bay Delta region, for four different climate change scenarios and one sea level rise assumption. The climate change forecasts range from less warming to more warming, and drier to wetter. Figure 5-1 shows the resulting CVP deliveries to municipal and industrial water contractors north of the Delta (the portion of the CVP service area to which CCWD belongs) for past hydrologic year types for the base case, the sea level rise case (baseline with a one-foot increase in sea level), and the two extremes of the four climate change scenarios.

The baseline average delivery for these municipal and industrial water contractors is 201,000 AF per year, and with a one-foot sea level rise this baseline delivery is projected to decrease to 196,000 AF due to salinity restrictions and reverse flows in the Delta. The drier with more warming scenario further decreases deliveries to 181,000 AF, and the wetter, less warming scenario has the largest average deliveries at 207,000 AF per year.

The primary effects of climate change to the Delta supply include, among others:

- More precipitation will fall as rain than snow;
- Reduced Sierra snowpack;
- Shifted timing of snowmelt runoff into streams – spring runoff comes earlier resulting in increased winter flows and decreased spring flows;
- Increased flood events; and
- The most severe climate impacts in California are expected to occur in the Sierra watershed, which is where the SWP and CVP supplies originate. Therefore, imported water supply is extremely vulnerable to climate change.

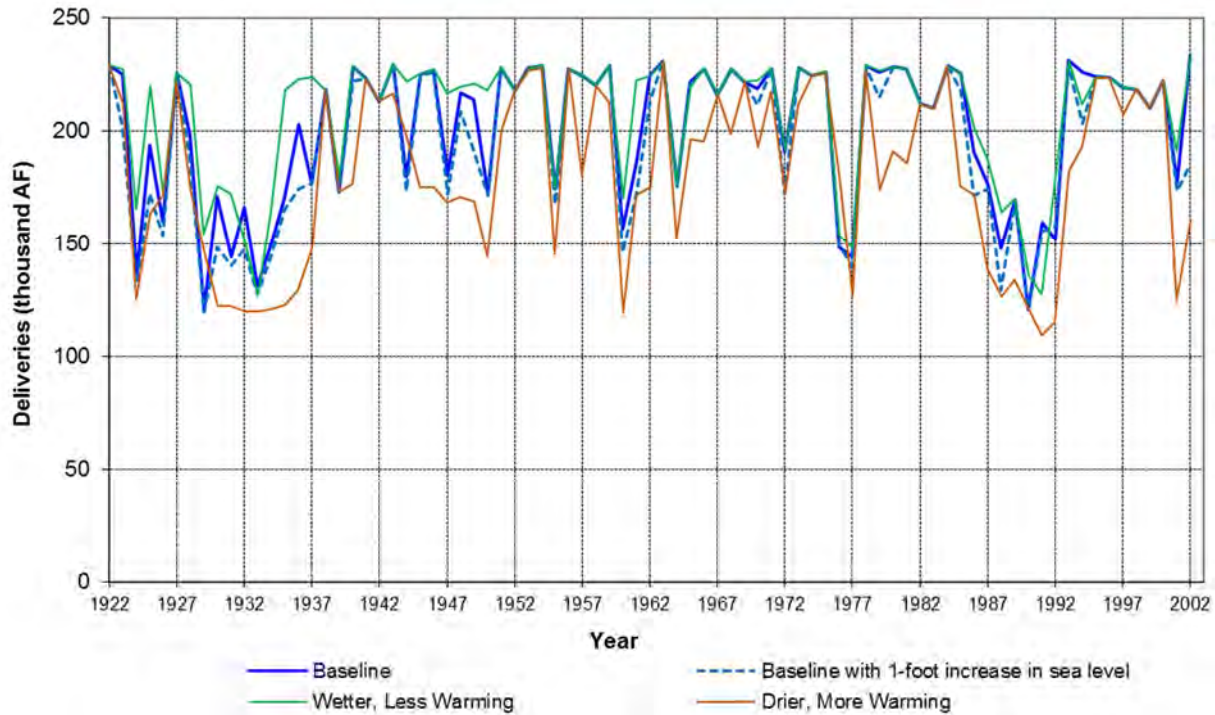


Figure 5-1
Climate Change Impacts to CVP Deliveries to North of Delta Municipal and Industrial Water Contractors

Water agencies can reduce the impacts of climate change on water resources through adaptation and/or mitigation. For water resources planning, a climate change adaptation strategy involves taking steps to effectively manage the impacts of climate change by making water demands more efficient and relying on supply sources that are less vulnerable to climate change. A mitigation strategy involves proactive measures that reduce greenhouse gas emissions.

5.3.3 Environmental Issues

In addition to climate change, the reliability of the CVP supply is reduced as a result of pumping restrictions to protect fish species listed as threatened and endangered under the federal or state Endangered Species Acts in the Sacramento-San Joaquin River Delta. Restrictions on Delta pumping were required by the biological opinions issued by the United States Fish and Wildlife Service (December 2008) and National Marine Fisheries Service (June 2009).

Water management in the Sacramento-San Joaquin River Delta has seen conflict for decades, attempting to balance both water supply and ecosystem goals. DWR is proposing the California WaterFix as its preferred alternative for a conveyance facility to upgrade the water delivery infrastructure through the Delta, consisting of two tunnels and three new intakes that are planned to increase water supply reliability. However, there are concerns that construction of the California WaterFix could have water quality, water supply, and construction-related impacts for users whose supply comes from within the Delta. CCWD filed a protest against the water rights petition that DWR and Reclamation filed for the California WaterFix diversion points due to these concerns, and warned of potential legal challenges to other aspects or approvals of the project. The water rights petition has not been resolved and the California WaterFix has not been

approved. However, in March 2016, CCWD and DWR came to an agreement where, in exchange for CCWD withdrawing its protest of the water rights petition and not pursuing challenges to environmental documentation, DWR will provide a portion of CCWD's contracted water supply from an alternate, high quality source and DWR would ensure that the California WaterFix's construction would not adversely impact CCWD's in-Delta intake facilities and operations.

5.3.4 Reliability under Non-Drought Conditions

DWD has no inconsistent water sources, and can provide adequate water supply during all conditions. The supply received from CCWD is very reliable given CCWD's contracts with Reclamation and with ECCID for supplemental supply. With the completion of the Los Vaqueros Reservoir and its recent expansion, the reliability of DWD's supply from CCWD has increased dramatically. CCWD previously had only three to seven days of storage with Contra Loma Reservoir. CCWD now has enough storage for approximately 14 to 28 months of normal use, if necessary.

In addition, CCWD conducted a seismic reliability of their water supply system and is implementing recommended improvements. These improvements include the Multi-Purpose Pipeline, to improve flexibility and reliability of supply, as well as a pipeline interties, landslide mitigations, and modifications of petroleum pipelines at canal crossings.

Historically, the Canal has been a reliable source of water. The only mandatory water supply restriction in the last thirty years occurred from February 1977 to January 1978. During this period, all Contra Costa Canal raw water customers were rationed. The only other period of water shortage occurred during 1991 to 1994 when all Contra Costa Canal customers were asked to use not more than 90 percent of their 1990 usage.

Canal operations have infrequently stopped from 1 to 8 hours in duration due to electrical or mechanical failures over the past 20 years. However, the treatment plant intake is positioned so that water can be fed by gravity from the Los Vaqueros Reservoir south of Brentwood or from the Contra Loma Reservoir located in Antioch. Consequently, no water supply interruptions have occurred due to electrical or mechanical failures.

A catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster are expected to be short term. DWD has never had a catastrophic event that has prevented it from being able to supply water to its customers. Catastrophic events that have occurred in the past include the Loma Prieta earthquake of 1989, the freeze of 1990, and occasional power outages that have lasted up to nine hours. DWD was unaffected by the Loma Prieta earthquake. Although water was observed to be sloshing back and forth in DWD's reservoirs, no structural failures or loss of water occurred.

During the freeze of 1990, DWD was inundated with customer calls about not having water service due to frozen pipes. DWD staff responded to the needs of the customers and continued repairs until all services were restored.

When power outages occur, DWD relies on its elevated storage to provide service to its customers. DWD also has backup gas and propane driven pumps which can be brought into service in the event of a power failure. With current standby generators, the Randall-Bold WTP

does have the capability to produce water during a power failure, and is able to pump water from its 5 MG underground storage reservoir at a rate of 4.2 mgd with one pump running on a stand-by generator.

If DWD's surface water supply is disrupted, DWD's groundwater supply will be available for emergency firefighting or to maintain service. In addition, DWD has three emergency interties with the City of Antioch's treated water system, which could provide 1,000 gpm each.

5.4 Water Shortage Contingency Plan

DWD encourages its residents to use water wisely at all times, as outlined in DWD Regulation No. 8, Water Conservation, included as Appendix I. To respond to the recent drought and conditions imposed by the Governor's January 2014 declaration of a Water State of Emergency and the July 2014 emergency regulations by the California State Water Resources Control Board (SWRCB), DWD adopted a resolution in July 2014 that called for all its customers to reduce consumption by 20 percent of 2013 use, prohibited wastewater outdoor water use, and established mandatory requirements to avoid excessive use until the drought ends.

In April 2015, the Governor issued more stringent water reduction goals, and in May 2015, the SWRCB adopted emergency regulations that required DWD to reduce consumption by 28 percent of 2013 usage. Consequently, DWD amended its Water Shortage Contingency Plan (contained in the 2010 UWMP) to incorporate these water reduction requirements. More recently, the SWRCB reduced DWD's water reduction requirement to 23 percent in April 2016 and then replaced the State-imposed mandatory conservation standards with locally-developed standards in May 2016. The May 24, 2016 version of Regulation No. 9, Drought Emergency Regulation, is included as Appendix J. During the current drought, the Drought Emergency Regulation has served as an effective tool in reducing water use. DWD will continue to review its emergency water regulations in light of SWRCB actions and will address any deficiencies as information becomes available.

While DWD's Regulation No. 9 specifies the mandatory reductions in water usage, prohibited uses of water, waiver process, and penalties that apply to the current drought (as SWRCB has extended its emergency urban water conservation regulations through October 2016), those restrictions represent only the requirements that are applicable to this specific drought condition. DWR will determine what is appropriate to implement within its service area to meet any future emergency restrictions. Therefore, this section of the UWMP contains a draft Water Shortage Contingency Plan that can be tailored by DWD in the future to meet specific drought or emergency conditions, just as was done in 2015.

5.4.1 Purpose of Contingency Planning

The purpose of the water shortage contingency plan is to be prepared to impose temporary demand reductions in case available supply falls below the planned levels discussed in this UWMP. Supplies may be reduced below planned levels due to such causes as extreme (worst case) drought conditions, unplanned outages of water supply facilities due to earthquakes or other major disasters, prolonged power outages, or any other catastrophic loss of supply.

In the event of an interruption of water supply beyond the control of DWD's staff or a local emergency declared by an adjoining city or a state of emergency declared by the Governor or his

staff, DWD's Emergency Plan is put into effect. Appendix K contains a copy of the current Emergency Plan. This Plan addresses provisions for handling emergencies, including emergency notification procedures, operational criteria for priority uses such as firefighting, emergency operational procedures, emergency public information procedures, and related relevant procedures. The Emergency Plan is updated periodically.

DWD's Emergency Plan addresses two levels of operational emergency planning:

1. Short-Term Water Supply Outage – Duration of 72 hours or less during which water supply may fall short of desired quantity and/or pressure, such that DWD's usable storage could be reduced to 33 percent capacity before the end of approximately 72 hours. In such an event, DWD would implement the following measures:
 - In the event of a raw water outage from the Canal intake, request CCWD to backflow water from Contra Loma Reservoir or provide supply from Los Vaqueros Reservoir.
 - Conserve treated water by reducing and maintaining minimum pressure in system. This may require valving off Reservoir 2 outflow to reduce loss of storage.
 - Should the outage be due to broken water mains, valve off affected areas.
 - Operate DWD's wells and request the WTP to increase production, if needed, to maintain maximum reservoir levels.
 - Supplement with City of Antioch supply, if interconnections are available for use.
2. Long-Term Water Supply Outage - Unknown length of time when water supply may fall short of desired quantity and or pressure, such that DWD's storage could be reduced to less than 25 percent. In such an event, DWD would implement the following measures:
 - Take all of the steps described above for the short-term outage.
 - Maintain a minimum of 1 MG storage for fire protection if possible.
 - Contact Contra Costa County Office of Emergency Services and notify them of the water supply outage.
 - Ban use of water for all non-essential uses. This may require going house to house and notifying customers.
 - Board of Directors to adopt regulations on emergency water use as discussed below.
 - Send out news bulletins periodically to keep the public updated on the problem.

5.4.2 Stages of Action

DWD's Water Shortage Contingency Plan provides for three stages of action during water supply shortages. These stages of action are described below:

5.4.2.1 Stage A - Up to 15% Reduction

If DWD's supply is reduced by not more than 15 percent of normal use in a non-drought period, DWD will appeal to its customers to voluntarily reduce their water consumption, to prevent waste and unreasonable use of water and to comply strictly with the conservation measures set forth in DWD's Regulation No. 8 "Water Conservation" and in the UWMP.

5.4.2.2 Stage B - 15% to 35% Reduction

If DWD's supply is reduced by 15 to 35 percent, DWD will continue with all measures from Stage A. In addition, DWD's Board of Directors may declare, pursuant to CWC §350, a water shortage emergency condition to prevail within DWD. Thereafter, the Board could adopt regulations and restrictions on the use of water that will, in the sound discretion of the Board, conserve DWD's water supply for the greatest public benefit with particular regard to essential domestic uses, sanitation, and fire protection.

5.4.2.3 Stage C - 35% to 50% Reduction

If the reduction of available water supply is between 35 and 50 percent of normal use or if the measures implemented in Stages A and B above do not achieve their intended reduction in water use, the Board may adopt limitations on consumption by rationing customer water use and imposing extra charges and other penalties for exceeding allotments.

5.4.3 Prohibitions, Consumption Reduction Methods, and Penalties (Draft Emergency Water Shortage Ordinance)

The following is a draft of an emergency regulation restricting the quantity and use of water supplied by DWD and imposing penalties for non-compliance. In the event of a water shortage emergency requiring such measures, the Board of Directors would enact this or a similar ordinance.

5.4.3.1 Section 1 - Effective Period

These regulations shall be effective during the water shortage emergency condition which the Board declared on _____ and shall continue in effect until such date as the Board may declare that the condition has ended.

5.4.3.2 Section 2 - Allocation of Water

A. Allocation for all customers

All customers are required to:

1. Reduce indoor water use by 10 percent or as much as possible; and reduce outdoor irrigation by 40 percent.
2. Eliminate unnecessary uses of water.

3. Take immediate action to prevent any water from being wasted.
4. Limit outdoor watering to three days per week.

If DWD did not serve water to a customer's property during the previous year, DWD shall compute a hypothetical use by the customer during that period on the basis of quantities used on similar properties or other information available to DWD.

B. Penalties for excess use

If DWD finds that any of the prohibited uses of water are not being complied with, it shall notify the customer at whose premises the breach occurs. If the customer fails to take prompt and reasonable action to halt the breach, DWD may, at the discretion of the General Manager or his designee, suspend delivery of water to the premises, and/or install a device to restrict the flow of water to the customer until DWD determines that there will be no further breach of DWD's regulations; and/or DWD may fine the customer \$50 per day after an initial warning; \$100 per day for any second violation; \$200 per day for any third violation; and \$500 per day for any subsequent violations. The costs, as determined by the General Manager, of disconnecting the service, installing a flow restrictor, and reconnecting the service shall be charged to and paid by the customer.

5.4.3.3 Section 3 - Prohibited Uses of Water

The following uses of water supplied by DWD have been determined to be unreasonable and are prohibited during the effective period of this regulation:

1. The application of water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated area, private and public walkways, roadways, parking lots, or structures;
2. The use of a hose to wash an automobile, boat or trailer; except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use;
3. The application of water to any hard surface; including but not limited to driveways, sidewalks, and asphalt;
4. The use of potable water in a fountain or decorative water feature, unless the water is part of a recirculating system;
5. Watering outdoor landscapes during and up to 48 hours after measurable precipitation;
6. The serving of drinking water to customers unless upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;
7. The irrigation with potable water of ornamental turf on public street medians;
8. The irrigation with potable water of landscapes outside of newly constructed homes and buildings that is not delivered by drip or microspray and in a manner inconsistent with

the regulations or other requirements established by the California Building Standards Commission and have been issued a building permit after the effective date of this Resolution.

9. The use of potable water to irrigate the landscapes outside newly constructed homes or buildings in excess of an average of five gallons per hundred square feet of front yard landscape area per day over seven consecutive days during the months of April through November and the use of potable water in excess of an average of one and one half gallons per hundred square feet of front yard landscape area per day over seven consecutive days during the months of December through March. The aforementioned quantities include a 25 percent allowance for plant establishment. The General Manager may, but is under no obligation to, provide an additional amount of water based on water efficient irrigation calculations submitted to DWD no later than June 8, 2015, based on a landscape plan utilizing no more than 60 percent moderate water use plants and no less than 40 percent low water use plants with an overall plant density of 50 percent in the landscape area.
10. The service of daily laundered towels and linens at hotels and motels unless upon request of the guest. A notice of this provision shall be prominently displayed in each bathroom;
11. Watering of outdoor ornamental landscape more than three days per week and more than two times on those days. Large landscape areas with a Centralized Irrigation Computer Control System that are able to demonstrate a water savings of 40% per month from 2013 use and are set to shut off water use if there is a leak or malfunction, shall be allowed to irrigate more frequently than three days per week; and
12. Excessive water use in any one day.

In the event the General Manager determines that DWD is in danger of not meeting required water reductions, the General Manager shall have the authority to implement any or all of the following additional restrictions, after providing 14 calendar days' notice to the City of Oakley, to those building new homes in the District, and all existing customers:

1. Prohibit the use of potable water for flooding new building pads prior to pouring concrete building slabs or other construction related activities that can be satisfied through the use of non-potable water;
2. Require those installing new water mains to capture flushing water in holding tanks or other similar facility for non-potable reuse;
3. Require ice-pigging of new water mains, or alternate method approved by the District, in lieu of traditional flushing methods for cleaning new water mains;
4. Prohibit the planting of new lawns;
5. Prohibit the use of water from the District's fire hydrants for other than fire protection purposes;
6. Reduce the number of days for watering outdoor ornamental landscape from three to two and/or establish which days of the week watering will be allowed;

7. Prohibit the filling, or draining and re-filling of swimming pools, unless required by the Environmental Health Department for commercial and community swimming pools for public health and safety reasons; and
8. Require the installation of water saving low flow devices in existing structures.

5.4.3.4 Section 4 - Exceptions and Waivers

Written applications for exceptions to or waivers of any provision of these regulations shall be received and may be granted in any case where the restriction might create a hazard to the health and safety of any individual or the public, or would cause an undue and unavoidable hardship, including but not limited to adverse economic impacts such as loss of production or jobs. Denial of an application may be appealed in writing to the Appeals Committee appointed by the Board.

5.4.4 Revenue and Expenditure Impacts

Table 5-6 summarizes hypothetical reductions in revenue due to 15, 35, and 50 percent cutbacks in water use based on 2010 water sales and costs, which reflected average use and costs over the past 5 to 10 years. The Net Revenue Loss is the difference between the reduction in revenue from lower water sales minus the savings from not having to purchase, treat, and distribute as much surface water. The revenue impact analysis assumes that the water reduction condition is in effect for an entire year.

As noted in Table 5-6, DWD currently has monies in a contingency reserve to balance the budget if revenues fall up to 15 percent below expected levels, such as during abnormally low water use years. For example, DWD used these reserves during the El Nino winter and spring of fiscal year 1997/98 when water use was at a ten-year low.

Table 5-6 Revenue Impacts With Up to 50 Percent Reduction in Demand

Percent Reduction	15%	35%	50%
Water sales reduction [estimated sales of 1,756 MG in 2010]	263 MG	615 MG	878 MG
Revenue Reduction (Loss) [estimated normal total revenue for 2010 of \$6.056 million]	(\$908,400)	(\$2,119,600)	(\$3,028,000)
Savings for Not Purchasing Surface Water (Accounts for 20% of supply from groundwater & 6% losses) [estimated normal total purchase cost of \$2.5 million for 2010]	\$375,000	\$875,000	\$1,250,000
Savings for Reduced Randall Bold WTP Treatment Cost [estimated normal total cost of \$370,000 in variable expenses for 2010]	\$55,500	\$129,500	\$185,000
Net Revenue Loss	(\$477,900)	(\$1,115,100)	(\$1,593,000)
Reserve Funds Available	\$1,000,000	\$1,000,000	\$1,000,000
Estimated Deficiency	\$0	(\$115,100)	(\$593,000)

A one-time 15 percent reduction in water sales can be covered by reserves. Reductions in water sales of 35 percent and 50 percent are estimated to result in revenue deficiencies of about \$115,100 and \$593,000, respectively. It is not anticipated that reductions this severe will occur, as discussed in Section 5.1. However, should they occur, DWD could take any of the following actions to offset the loss in revenue:

- Defer capital and maintenance expenditures;
- Utilize funds from other District emergency reserves;
- Temporary excess use charges (such as described in the emergency water shortage ordinance);
- Temporary increases in water rates; or
- Short-term borrowing.

It is important to note that the above discussion on revenue impacts is hypothetical. As discussed in Section 5.3.4, the likelihood of a catastrophic long-term significant reduction in DWD supply is very low. According to CCWD's February 2016 supply analysis (Appendix G), any supply deficiency that may occur over a three-year period can be met by a combination of short-term water purchases by CCWD and a voluntary short-term conservation program of up to 15 percent demand reduction. In addition, DWD has a groundwater supply system in place that provides additional reliability. It is anticipated that there will be ample supply to meet DWD's demands for the next three years. Given this scenario, DWD does not anticipate demand reductions and corresponding revenue reductions greater than 15 percent, which can be handled using available reserve funds.

A catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster are expected to be short term. DWD has never had a measurable loss of revenue from such an event. It is difficult to determine the revenue impacts from a hypothetical catastrophic event. DWD maintains sufficient reserves to make necessary repairs as well as to make up for lost revenue. Any revenue shortages could be made up with short term borrowing.

DWD's revenues would be increased as a result of penalties that may be imposed by DWD during a time of water shortage. The extent of the revenue increase would be based on the amount of water a customer used in excess of their allocation and the charge for such excess as may be established by the Board of Directors. In the case of extreme excessive use by a customer, DWD's revenues would not be enhanced since this usage pattern would most likely result in installation of a flow restrictor or disconnection of service. Additional revenues from penalties would be used to supplement reserve funds and other methods.

5.4.5 Reduction Measuring Mechanisms

Demands must be monitored frequently during emergency water shortages to enable DWD to effectively manage the balance between supply and demand. During normal water supply conditions, production figures are recorded daily. Totals are reported monthly to the General Manager and the Board of Directors.

During a 15 percent reduction stage, daily production figures would be reported to the General Manager. A comparison of weekly production targets with actual figures would also be prepared and reviewed by the General Manager. These summaries would also be forwarded to the Board of Directors on a monthly basis.

During a 35 percent reduction stage, the procedure for the 15 percent reduction stage would be followed with the Board of Directors receiving weekly updates rather than monthly. If reduction goals are not met, the General Manager would call a special meeting of the Board of Directors to discuss corrective actions.

During a 50 percent reduction stage, daily reports would be generated for review by the General Manager with weekly, or more frequent, reports given to the Board of Directors. If reduction goals are not met, the General Manager would call a special meeting of the Board of Directors to discuss corrective actions.

Section 6

Demand Management Measures

This section provides a description of DWD's water conservation efforts and their implementation over the past five years.

6.1 Overview of Implementation Status

Appendix I contains a copy of DWD Regulation No. 8, "Water Conservation", which was originally adopted in 1986 and most recently amended in 2009. Table 6-1 summarizes the implementation status of the demand management measures (DMMs) required by the CWC. A description of each measure is provided in Section 6.2.

DWD receives its water supply from CCWD who is a signatory to the Memorandum of Understanding Regarding Urban Water Conservation in California developed by the California Urban Water Conservation Council. DWD, in conjunction with CCWD, has implemented all the DMMs. Customers within the DWD service area are eligible to participate in all of CCWD's conservation programs. A portion of the raw water purchase price that DWD pays for CCWD surface water supply is allocated for implementation of the water conservation programs. DWD periodically publicizes the availability of these services to their customers. The CCWD website contains detailed information on the water conservation programs (<http://www.ccwater.com/148/Conservation>).

Table 6-1 Summary of Demand Management Measure Implementation

DMM	Implementation Status
Water waste prevention ordinances	Implemented
Metering	Implemented
Conservation pricing	Implemented
Public education and outreach	Implemented
Programs to assess and manage distribution system real loss	Implemented
Water conservation program coordination and staffing support	Implemented
Other demand management measures	Implemented

Appendix L presents DWR's August 2014 letter stating that DWD is currently implementing the Urban Best Management Practices consistent with Assembly Bill 1420 and is therefore eligible to receive water management grants and loans.

6.2 Description of Demand Management Measures

Each of DWD's DMMs is described below.

6.2.1 Water Waste Prevention Ordinances

Regulation No. 8, Water Conservation, was put into effect to assure that all water furnished by DWD is put to reasonable beneficial use, to prevent unreasonable use or waste of water, and to

promote efficient use and conservation of water. DWD users are urged to take all reasonable action to conserve water and prevent waste of water. Recommended actions under normal conditions include:

- Periodically examine all plumbing systems to detect any leaks and repair leaks immediately upon detection.
- Prevent water from running off premises into street gutters.
- Install flow restrictors on all shower head that will limit flow to not more than 3 gpm.
- Install displacement devices in toilet tanks to reduce water use to 3.5 gallons per flush (gpf).
- Install aerators or laminar flow devices on kitchen and lavatory faucets to reduce maximum flow to 1.5 gpm.
- Landscape with minimal turf and drought-tolerant (low water-using) plants.

Every new DWD customer is advised to water lawns only five minutes at a time, twice a day, given the sandy soil conditions in Oakley. This communication takes place when a new customer calls to sign-up for water service.

During water shortage conditions, DWD has imposed additional prohibitions on uses of water, as described in Section 5.

6.2.2 Metering

All water services connected to DWD's system are required to be metered. DWD completed metering all its customers in 2013. All meters register in cubic feet with customers being billed for every 100 cubic feet (748 gallons) of water usage. The FlexNet metering network was implemented in mid-2012, allowing DWD to read meter usage at its office. DWD currently has approximately 45 percent of its connections on FlexNet, and expects to have the remaining meters on FlexNet within the next 7 to 8 years. All new development is required to install the FlexNet technology per DWD Specifications. The FlexNet system allows alarms to be set to inform DWD if a service has had continuous water flow for a 24-hour period. These services are shown on a report that is run daily. If the review of the service usage is consistent with a leak, the customer is contacted and DWD gives them ideas on where the leak may be located. DWD is also able to detect over usage of water sprinklers. This has been a very useful tool for DWD during the 2015/2016 Emergency Conservation Regulations.

6.2.3 Conservation Pricing

DWD adopted a two-tier conservation rate structure in June 2015. The bill is based on a monthly meter base fee (which varies based on meter size) plus a fee based on the amount of water used. These two tiers, most recently updated in May 2016, apply to all customer types except for well water used for construction, irrigation, and lake fill, where 1 unit equals 100 cubic feet:

- 0 – 8 units are billed at \$3.07 per unit; and

- Each unit used over 8 units is billed at \$3.30 per unit.

6.2.4 Public Education and Outreach

DWD has had a long-term public information program promoting water conservation. DWD's periodic customer newsletters contain conservation tips and remind customers of the availability of water conservation programs through both DWD (<http://www.diablowater.org/conservation>) and CCWD (<http://www.ccwater.com/148/Conservation>). This communication with customers increased in frequency during the recent drought. DWD also participates in local community functions such as Delta Science Week, Cityhood Celebration, Oakley Almond Festival, Community Awareness Day, and Free Water Conservation Workshops, providing customers with water conservation information, tips, and resources.

When system-wide daily usage climbs above normal for a given time of the year, DWD publishes a notice in the local newspaper to its customers advising them to check their sprinkler systems and to look for leaks. DWD also reminds its customers via bill messages and newspaper advertisements to reduce the amount of outside landscape watering when the weather turns cooler.

CCWD's public information program includes providing speakers to the public, mailing newsletters to DWD customers with water conservation ideas, sponsoring media events related to conservation, and producing public service announcements. CCWD provides an extensive Water Education Program available to school districts and private schools in DWD's service area. All programs are provided free of charge. Students learn about water conservation, water quality and stewardship through a variety of resources:

- Classroom presentations are provided for 3rd through 5th Grades. The classroom presentations are designed to support grade-level state curriculum standards, covering information on water sources, treating water for health and safety, and source protection and conservation.
- An assembly theater program "Go With the Flow" for elementary and middle schools explores water science, conservation, and environmental issues. Students and teachers interact with the performers.
- For schools located near the Canal, community service presentations are provided year-round remind students that canal safety rules exist to protect them and their families.
- Field trip opportunities are provided to: Los Vaqueros Reservoir Watershed (3rd and 4th Grades); a water treatment plant tour at either the Concord or Oakley locations (5th Grade); and a science cruise on the Research Vessel Brownlee studying the Delta (5th Grade, co-sponsored by Central Contra Costa Sanitary District, Delta Diablo, and Mt. View Sanitary District).

6.2.5 Programs to Assess and Manage Distribution System Real Loss

DWD constantly monitors the amount of unaccounted-for water, which is the difference between the quantity of water pumped into the distribution system and the metered quantity delivered to its customers. When a distribution system pipe is suspected to be leaking in a particular area, DWD immediately either performs or contracts out the leak detection and repair.

The percentage of unaccounted-for water in DWD's system has averaged about 6 percent per year over the last 16 years, ranging from about 1 percent to a high of 11 percent. This average percentage is well below the target level of 10 percent or below. Appendix F includes the results of DWD's AWWA water audit.

6.2.6 Water Conservation Program Coordination and Staffing Support

As DWD's water supplier, CCWD has maintained a full-time conservation coordinator position since 1991. In addition to the CCWD conservation coordinator, DWD's General Manager has overall responsibility for conservation measures implemented in the service area.

6.2.7 Other DMMs

CCWD's 2015 UWMP provides details on its full conservation program. The sections below provide describe the CCWD measures where DWD customer participation has been quantified, such as rebate and water use surveys.

6.2.7.1 High-Efficiency Washing Machine Rebate Programs

DWD customers are eligible for a high-efficiency washing machine rebate program through CCWD. The program is administered by CCWD and provides up to a \$100 rebate for purchasing and installing a new high-efficiency washing machine. The amount of the rebate depends on the efficiency of the washing machine, with the highest rebate for the most water-efficient models. From 2011 through 2015, 1,040 washer rebates were provided in the DWD service area.

6.2.7.2 Residential Toilet Replacement Programs

CCWD has offered \$175 rebates to single- and multi-family customers who replace older toilets with high-efficiency toilets. The rebate program initially began in 1994. From 2011 through 2015, DWD provided 566 toilet rebates to single-family residential customers, and 7 rebates to multi-family residential customers.

6.2.7.3 Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers

Each day, DWD evaluates every account in the service area for abnormal water use using its FlexNet system. Each account is compared to a history of the prior 18 months' usage. If the current month's usage is higher than what would be considered normal usage for the given time of the year, the customer is contacted by phone and left a door hanger alerting the customer of a possible leak. The DWD employee interviews the customer as to any changes in usage patterns, new landscaping, or swimming pool fill that might account for the increase. The DWD employee also offers to dispatch a field worker to conduct an audit of water usage and to help the customer to check for leaks.

In addition, DWD customers are also eligible for free home water surveys conducted by CCWD water conservation staff. These water use surveys are conducted for single-family and multi-family residences. From 2011 through 2015, 45 audits for single-family residential customers were performed and 74 multi-family residential surveys. The CCWD staff checks toilets for leaks and determines flush volume, determines flow rates of showerhead and faucets, installs high-efficiency showerheads and faucets as needed, and provides a brief report of findings and installations done. Customers who go through the residential water survey are eligible for a smart sprinkler timer rebate.

Customers with unusually high consumption will experience higher than average water bills. There is significant incentive for the customer to participate in the audit program given the substantial monetary savings associated with reduced water consumption.

6.2.7.4 Residential Plumbing Retrofits

DWD customers are eligible to receive free conservation devices from CCWD including showerheads, kitchen faucet aerators, bathroom faucet aerators, hose nozzles, and dye tablets to check for toilet leaks. Over time, as older buildings are maintained and remodeled, older fixtures are replaced with new low flow fixtures, since they are all that is now commercially available. From 2011 through 2015, a total of 307 showerheads and 89 aerators were provided to single-family and multi-family residential customers.

DWD serves water within Contra Costa County and the City of Oakley which require all new construction to utilize low flow fixtures including 1.6-gpf toilets. This requirement for low flow fixtures has been in place since 1992 on a state-wide basis.

6.2.7.5 Large Landscape Conservation Programs

DWD's Regulation No. 8, Water Conservation, provides that no area in DWD service area shall be landscaped, planted, or irrigated unless the landscaping plan and irrigation system makes efficient use of a minimum quantity of water and is installed, operated, and maintained in accordance with plans that comply with all ordinances and regulations of Contra Costa County relating to landscaping in new developments. DWD utilizes CCWD services to conduct large landscape audits. CCWD has an ongoing, free, large landscape audit program which includes customers within the DWD service area. The CCWD program provides non-residential customers with support and incentives to improve their landscape water use efficiency, and provides information on climate-appropriate landscape and irrigation design to new and changed service connections. The large landscape program assists owners and managers of large landscape areas including apartments, business complexes, commercial properties, homeowners associations, parks, schools, and stores. During the free Large Landscape Water Survey, CCWD conservation staff will: inspect the irrigation equipment; perform sprinkler precipitation tests; provide a written report listing suggestions for improving the efficiency of the irrigation system; provide a site-specific irrigation schedule based on test data and local weather data; and provide a site-specific landscape water budget designed to assist in managing landscape water. From 2011 through 2015, one large landscape survey was performed in the DWD service area.

In conjunction with the Large Landscape Survey, CCWD also provides rebates designed to encourage customers to upgrade selected irrigation equipment with new, more efficient

irrigation equipment. Items included as appropriate may be controllers, drip retrofits, rain sensors, flow meters, and sprinkler heads. These rebates are only provided after a landscape survey has been conducted to evaluate the existing equipment.

DWD customers are also eligible to participate in CCWD's Lawn to Garden Rebate Program, offering rebates to customers to replace their lawns with water-wise landscaping. The rebate is \$1.00 per square foot with a maximum of \$1,000 per single-family residence. From 2012 through 2015, 25 DWD customers received a rebate, converting a total of 19,927 square feet of lawn for a total rebate of \$17,725.

In addition, DWD customers can take advantage of DWR's turf replacement rebate that offers \$2.00 per square foot with a maximum of \$2,000 per single-family household.

6.2.7.6 Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts

CCWD provides free commercial water use surveys to: evaluate and analyze water usage; provide an annual water consumption history; calculate a cost/benefit analysis for water conserving technology; provide water-efficient plumbing fixtures, devices and materials, subject to availability; provide a detailed evaluation of the site and recommend equipment upgrades and water management improvements; and offer rebate incentives for selected plumbing upgrades. In addition, CCWD also offers rebates and incentives for replacing selected existing plumbing fixtures and devices with new water-efficient plumbing fixtures and devices. These include commercial high-efficiency washer rebates (\$220), free pre-rinse dishwashing sprayers, and commercial irrigation equipment rebates for customers who choose a landscape survey. Also, between 2013 and 2014, three DWD CII customers received high-efficiency toilet rebates.

CCWD's Lawn to Garden Rebate Program also applies to CII customers, offering for up to \$20,000 for commercial, homeowner associations, industrial, and institutional properties. From 2012 through 2015, two DWD CII customers received a rebate, converting a total of 3,678 square feet of turf for a total rebate of \$2,084.

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California Water Code Division 6, Part 2.6.

Chapter 1. General Declaration and Policy §10610-10610.4

Chapter 2. Definitions §10611-10617

Chapter 3. Urban Water Management Plans

Article 1. General Provisions §10620-10621

Article 2. Contents of Plans §10630-10634

Article 2.5. Water Service Reliability §10635

Article 3. Adoption And Implementation of Plans §10640-10645

Chapter 4. Miscellaneous Provisions §10650-10656

Chapter 1. General Declaration and Policy

SECTION 10610-10610.4

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2. a) The Legislature finds and declares all of the following:

- (1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- (2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
- (3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.
- (4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.
- (5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
- (6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

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- (7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
- (8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
- (9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.
- (b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

- (a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
- (b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
- (c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

Chapter 2. Definitions

SECTION 10611-10617

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary

according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, 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 of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

Chapter 3. Urban Water Management Plans

Article 1. General Provisions

SECTION 10620-10621

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).
- (b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.
- (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 areawide, regional, watershed, or basinwide 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.

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- (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, except as provided in subdivision (d).
- (b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before 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).
- (d) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

Article 2. Contents of Plan

SECTION 10630-10634

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.
10631. A plan shall be adopted in accordance with this chapter that 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.
 - (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 described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

- (1) 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.
 - (2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, 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.
 - (3) 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.
 - (4) 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.
- (c) (1) 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.
- (2) 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.
- (d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.
- (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

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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.
 - (I) Agricultural.
 - (J) Distribution system water loss.
- (2) The water use projections shall be in the same five-year increments described in subdivision (a).
- (3) (A) For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.
- (B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.
- (4) (A) If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.
- (B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:
- (i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

- (ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.
- (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
 - (1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.
 - (B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:
 - (i) Water waste prevention ordinances.
 - (ii) Metering.
 - (iii) Conservation pricing.
 - (iv) Public education and outreach.
 - (v) Programs to assess and manage distribution system real loss.
 - (vi) Water conservation program coordination and staffing support.
 - (vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.
 - (2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.
- (g) 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 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

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available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

- (h) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
 - (i) 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 subdivision (f) 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.
 - (j) An urban water supplier that relies 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).
- 10631.1. (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.
- 10631.2. (a) In addition to the requirements of Section 10631, an urban water management plan may, but is not required to, include any of the following information:
- (1) An estimate of the amount of energy used to extract or divert water supplies.
 - (2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
 - (3) An estimate of the amount of energy used to treat water supplies.

- (4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.
 - (5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
 - (6) An estimate of the amount of energy used to place water into or withdraw from storage.
 - (7) Any other energy-related information the urban water supplier deems appropriate.
- (b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.
- 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

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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 BayDelta 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.
- 10631.7. The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers,

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environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

10632. (a) 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:
- (1) 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 that are applicable to each stage.
 - (2) 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.
 - (3) 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.
 - (4) 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.
 - (5) 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.
 - (6) Penalties or charges for excessive use, where applicable.
 - (7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), 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.
 - (8) A draft water shortage contingency resolution or ordinance.
 - (9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.
- (b) Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to

subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

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.
- (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.

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.

Article 2.5. Water Service Reliability

SECTION 10635

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 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.

Article 3. Adoption and Implementation of Plans

SECTION 10640-10645

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) (1) 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.

(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

(b) (1) Notwithstanding Section 10231.5 of the Government Code, the department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part.

The report prepared by the department shall identify the exemplary elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

(2) A report to be submitted pursuant to paragraph (1) shall be submitted in compliance with Section 9795 of the Government Code.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section 10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.

(2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).

- (3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

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.

Chapter 4. Miscellaneous Provisions

SECTION 10650-10656

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

- (a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.
- (b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the

requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.
10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.
10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

Appendix B
2015 Urban Water Management Plan Checklist

Appendix B

Urban Water Management Plan Checklist

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	Section 3.3.1.2
10608.20(e)	Retail suppliers shall 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.	Baselines and Targets	Chapter 5 and App E	Section 3.3.1
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	Section 3.3.1.2
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	Section 3.3.1.3
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	Not applicable, no adjustment
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	Section 1.3
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	Not applicable, not a wholesale agency
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	Section 3.3.1.3, Appendix C
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	Section 1.1
10620(d)(2)	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.	Plan Preparation	Section 2.5.2	Section 1.2
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	Section 4.3, Section 4.4
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	Section 1.2, Appendix D-1
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	Section 1.3

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	Section 2.1
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	Section 2.2
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	Section 2.3
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	Section 2.3
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	Section 2.3
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	Section 4.1, Section 4.2, Section 4.3
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	Section 4.3
10631(b)(1)	Indicate whether a groundwater management plan has 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.	System Supplies	Section 6.2.2	Section 4.3.2
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	Section 4.3.1
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	Section 4.3.4
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	Section 4.3.1
10631(b)(3)	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.	System Supplies	Section 6.2.4	Section 4.3.3
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	Section 4.1, Section 4.3
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	Section 5.1, Section 5.2, Section 5.3
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	Section 5.2
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	Section 5.1, Section 5.2, Section 5.3
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	Section 4.4.2
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	Section 3.1
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	Section 3.1, Appendix F

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	Section 6
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	Not applicable, not a wholesale agency
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	Section 4.4
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	Section 4.4.3
10631(i)	CUWCC members may submit their 2013- 2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	Not applicable, not a CUWCC member
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	Section 4.2
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	Not applicable, not a wholesale agency
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	Section 3.2
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	Section 5.4
10632(a)(2)	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.	Water Shortage Contingency Planning	Section 8.9	Section 5.3
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	Section 5.4.1
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	Section 5.4.3
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	Section 5.4.2
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	Section 5.4.3

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	Section 5.4.4
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	Section 5.4
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	Section 5.4.5
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	Section 4.4.1
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	Section 4.4.1.1
10633(b)	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.	System Supplies (Recycled Water)	Section 6.5.2.2	Section 4.4.1.2
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	Section 4.4.1.2
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	Section 4.4.1.3
10633(e)	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.	System Supplies (Recycled Water)	Section 6.5.4	Section 4.4.1.1
10633(f)	Describe the actions 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.	System Supplies (Recycled Water)	Section 6.5.5	Section 4.4.1.4
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	Section 4.4.1.4
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	Section 5.3.1
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	Section 5.2
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	Section 1.3

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location
10642	Provide supporting documentation that the water supplier has encouraged 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.	Plan Preparation	Section 2.5.2	Section 1.2
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	Section 1.3, Appendices D-1, D-2, and D-3
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	Section 1.3, Appendices D-1 and D-2
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	Section 1.3, Appendix E
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	Section 1.3
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	Section 1.3
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	Section 1.1, Appendix C
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	Section 1.3

Appendix C

DWR Standardized UWMP Data Tables

Table 2-1 Retail Only: Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
710007	Diablo Water District	11,149	1,492
TOTAL		11,149	1,492

NOTES:

Table 2-2: Plan Identification		
Select Only One	Type of Plan	Name of RUWMP or Regional Alliance <i>if applicable</i> <i>drop down list</i>
<input checked="" type="checkbox"/>	Individual UWMP	
	<input type="checkbox"/> Water Supplier is also a member of a RUWMP	
	<input checked="" type="checkbox"/> Water Supplier is also a member of a Regional Alliance	Contra Costa Water District Alliance
<input type="checkbox"/>	Regional Urban Water Management Plan (RUWMP)	

NOTES: Diablo Water District is submitting an individual UWMP and is meeting all SBX7-7 requirements on an individual basis. However, DWD is also participating in the Contra Costa Water District Regional Alliance. The Regional Alliance Report and verification forms have been submitted by CCWD on behalf of the regional alliance member agencies. Additionally, a letter dated June 8, 2011 was submitted to DWR providing the list of water suppliers forming the regional alliance.

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
<input type="checkbox"/>	Agency is a wholesaler
<input checked="" type="checkbox"/>	Agency is a retailer
Fiscal or Calendar Year (select one)	
<input checked="" type="checkbox"/>	UWMP Tables Are in Calendar Years
<input type="checkbox"/>	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	MG
NOTES:	

Table 2-4 Retail: Water Supplier Information Exchange

The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.

Wholesale Water Supplier Name *(Add additional rows as needed)*

Contra Costa Water District

NOTES:

Table 3-1 Retail: Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040(<i>opt</i>)
	34,900	42,900	51,000	59,000	67,000	75,000

NOTES:

Table 4-1 Retail: Demands for Potable and Raw Water - Actual

Use Type (Add additional rows as needed)	2015 Actual		
<i>Drop down list</i> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>	Additional Description (as needed)	Level of Treatment When Delivered <i>Drop down list</i>	Volume
Single Family		Drinking Water	1,109
Multi-Family		Drinking Water	104
Commercial	Commercial/Institutional	Drinking Water	70
Industrial		Drinking Water	0
Landscape		Drinking Water	115
Other	Hydrants/Construction	Drinking Water	33
Losses		Drinking Water	60
TOTAL			1,492
NOTES:			

Table 4-2 Retail: Demands for Potable and Raw Water - Projected

Use Type <i>(Add additional rows as needed)</i>	Additional Description <i>(as needed)</i>	Projected Water Use <i>Report To the Extent that Records are Available</i>				
<u><i>Drop down list</i></u> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>		2020	2025	2030	2035	2040-opt
Single Family		1,475	1,841	2,206	2,572	2,937
Multi-Family		326	548	770	992	1,214
Commercial	Commercial/Institutional	125	180	234	289	344
Industrial		73	146	219	292	365
Landscape		124	133	142	151	160
Other		36	39	41	44	47
Losses		104	149	193	238	282
TOTAL		2,263	3,036	3,805	4,578	5,349

NOTES: These demand values reflect the numbers provided in UWMP Table 3-2. However, DWD has also considered the demand reductions necessary if the 20x2020 per capita demand reduction requirements are maintained past 2020 (shown in UWMP Table 3-8).

Table 4-3 Retail: Total Water Demands

	2015	2020	2025	2030	2035	2040 (opt)
Potable and Raw Water <i>From Tables 4-1 and 4-2</i>	1,492	2,263	3,036	3,805	4,578	5,349
Recycled Water Demand* <i>From Table 6-4</i>	0	0	0	0	0	0
TOTAL WATER DEMAND	1,492	2,263	3,036	3,805	4,578	5,349

*Recycled water demand fields will be blank until Table 6-4 is complete.

NOTES:

Table 4-4 Retail: 12 Month Water Loss Audit Reporting

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	60

** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*

NOTES:

Table 4-5 Retail Only: Inclusion in Water Use Projections

Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i>	No
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? <i>Drop down list (y/n)</i>	Yes

NOTES:

Table 5-1 Baselines and Targets Summary*Retail Agency or Regional Alliance Only*

Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	1995	2004	177	170	163
5 Year	2004	2008	171		

All values are in Gallons per Capita per Day (GPCD)*NOTES:**

Table 5-2: 2015 Compliance*Retail Agency or Regional Alliance Only*

Actual 2015 GPCD*	2015 Interim Target GPCD*	Optional Adjustments to 2015 GPCD <i>From Methodology 8</i>					2015 GPCD* <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events*	Economic Adjustment*	Weather Normalization*	TOTAL Adjustments*	Adjusted 2015 GPCD*		
117	170	0	0	0	0	117	117	Yes

**All values are in Gallons per Capita per Day (GPCD)*

NOTES:

Table 6-1 Retail: Groundwater Volume Pumped

<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2011	2012	2013	2014	2015
<i>Add additional rows as needed</i>						
Alluvial Basin	Tracy Subbasin	399	212	256	314	240
TOTAL		399	212	256	314	240
NOTES:						

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015						
<input type="checkbox"/>	There is no wastewater collection system. The supplier will not complete the table below.					
100	Percentage of 2015 service area covered by wastewater collection system <i>(optional)</i>					
100	Percentage of 2015 service area population covered by wastewater collection system <i>(optional)</i>					
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i> <i>Drop Down List</i>
<i>Add additional rows as needed</i>						
Ironhouse Sanitary District	Metered	841	Ironhouse Sanitary District	Ironhouse Sanitary District Wastewater Treatment Plant	Yes	No
Total Wastewater Collected from Service Area in 2015:		841				
NOTES: Ironhouse Sanitary District's service area encompasses all of DWD's service area, along with Jersey Island and part of Holland Tract.						

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015

<input type="checkbox"/>	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.									
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number <i>(optional)</i>	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level <i>Drop down list</i>	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
Ironhouse Sanitary District Water Recycling Facility	San Joaquin River	outfall pipe		River or creek outfall	Yes	Tertiary	841	403	10	428
Total							841	403	10	428
NOTES: Ironhouse Sanitary District's service area encompasses all of DWD's service area, along with Jersey Island and part of Holland Tract.										

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

<input checked="" type="checkbox"/> Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.								
Name of Agency Producing (Treating) the Recycled Water:		Ironhouse Sanitary District						
Name of Agency Operating the Recycled Water Distribution System:		Ironhouse Sanitary District						
Supplemental Water Added in 2015		0						
Source of 2015 Supplemental Water								
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment <i>Drop down list</i>	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation	hay field irrigation	Tertiary						
Landscape irrigation (excludes golf courses)	residential irrigation	Tertiary						
Golf course irrigation								
Commercial use	dust suppression and construction	Tertiary						
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other (Provide General Description)								
Total:			0	0	0	0	0	0

**IPR - Indirect Potable Reuse*

NOTES: Ironhouse Sanitary District's service area encompasses all of DWD's service area, along with additional areas outside of DWD's service area such as more of Oakley, and Jersey Island and part of Holland Tract. DWD is not responsible for providing recycled water within its service area. Reporting Ironhouse Sanitary District's projected recycled water use in this table would inaccurately reflect these values into DWD's total demand in Table 4-3R and show DWD as responsible for providing sufficient supply, in Table 7-2R.

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

<input type="checkbox"/>	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.	
Use Type	2010 Projection for 2015	2015 Actual Use
Agricultural irrigation	1,022	0
Landscape irrigation (excludes golf courses)		0
Golf course irrigation		0
Commercial use		0
Industrial use		0
Geothermal and other energy production		0
Seawater intrusion barrier		0
Recreational impoundment		0
Wetlands or wildlife habitat		0
Groundwater recharge (IPR)		0
Surface water augmentation (IPR)		0
Direct potable reuse		0
Other	<i>Type of Use</i>	0
Total		0
NOTES: Ironhouse Sanitary District's service area encompasses all of DWD's service area, along with Jersey Island and part of Holland Tract.		

Table 6-6 Retail: Methods to Expand Future Recycled Water Use

<input checked="" type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
Section 4.4.1.4	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Add additional rows as needed			
Total			0
NOTES: DWD does not serve recycled water within its service area, but is supportive of Ironhouse Sanitary District's production and distribution of recycled water in the service area.			

Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
<input type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
<input type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down List</i>	Expected Increase in Water Supply to Agency <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Agency Name</i>				
<i>Add additional rows as needed</i>						
Additional groundwater wells	No			2020	All Year Types	250
Additional groundwater wells	No			2030	All Year Types	250
NOTES: See Section 4.1 and Section 4.3.3.						

Table 6-8 Retail: Water Supplies — Actual

Water Supply	Additional Detail on Water Supply	2015		
<div>Drop down list</div> <div>May use each category multiple times.</div> <div>These are the only water supply categories that will be recognized by the WUEdata online submittal tool</div>		Actual Volume	Water Quality <div>Drop Down List</div>	Total Right or Safe Yield (optional)
Add additional rows as needed				
Purchased or Imported Water	CCWD surface water	1,252	Drinking Water	2,738
Groundwater	local groundwater	240	Drinking Water	672
Total		1,492		3,410
NOTES:				

Table 6-9 Retail: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply Report To the Extent Practicable									
<i>Drop down list</i> <i>May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		2020		2025		2030		2035		2040 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
<i>Add additional rows as needed</i>											
Purchased or Imported Water		4,563	4,563	4,563	4,563	5,475	5,475	5,475	5,475	5,475	5,475
Groundwater		924	924	924	924	1,176	1,176	1,176	1,176	1,176	1,176
	Total	5,487	5,487	5,487	5,487	6,651	6,651	6,651	6,651	6,651	6,651
NOTES:											

Table 7-1 Retail: Basis of Water Year Data

Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	2004		100%
Single-Dry Year	1977		100%
Multiple-Dry Years 1st Year	1990		100%
Multiple-Dry Years 2nd Year	1991		94-100%
Multiple-Dry Years 3rd Year	1992		85-90%
Multiple-Dry Years 4th Year <i>Optional</i>			
Multiple-Dry Years 5th Year <i>Optional</i>			
Multiple-Dry Years 6th Year <i>Optional</i>			

Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.

NOTES: Surface water from Contra Costa Water District; see Table 5-1

Table 7-1 Retail: Basis of Water Year Data

Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		<input checked="" type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year			
Single-Dry Year			
Multiple-Dry Years 1st Year			
Multiple-Dry Years 2nd Year			
Multiple-Dry Years 3rd Year			
Multiple-Dry Years 4th Year <i>Optional</i>			
Multiple-Dry Years 5th Year <i>Optional</i>			
Multiple-Dry Years 6th Year <i>Optional</i>			
Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
NOTES: Local groundwater; see Section 4.3 and Section 5.1.2			

Table 7-2 Retail: Normal Year Supply and Demand Comparison

	2020	2025	2030	2035	2040 (Opt)
Supply totals (autofill from Table 6-9)	5,487	5,487	6,651	6,651	6,651
Demand totals (autofill from Table 4-3)	2,263	3,036	3,805	4,578	5,349
Difference	3,224	2,451	2,846	2,073	1,302

NOTES: UWMP Table 5-2 presents the comparison of normal year supplies to demand, with the water demands reflecting 20x2020 per capita water use reduction requirements remaining in place after 2020. Because of this, the values shown here in Table 7-2 are slightly different than the values shown in UWMP Table 5-2.

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison

	2020	2025	2030	2035	2040 (Opt)
Supply totals	5,487	5,487	6,651	6,651	6,651
Demand totals	2,263	3,036	3,805	4,578	5,349
Difference	3,224	2,451	2,846	2,073	1,302

NOTES: UWMP Table 5-3 presents the comparison of single dry year supplies to demand, with the water demands reflecting 20x2020 per capita water use reduction requirements remaining in place after 2020. Because of this, the values shown here in Table 7-3 are slightly different than the values shown in

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison

		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	5,487	5,487	6,651	6,651	6,651
	Demand totals	2,263	3036	3,805	4,578	5,349
	Difference	3,224	2,451	2,846	2,073	1,302
Second year	Supply totals	5,487	5,487	6,651	6,542	6,323
	Demand totals	2,263	3036	3,805	4,578	5,349
	Difference	3,224	2,451	2,846	1,964	974
Third year	Supply totals	5,030	5,030	6,104	5,994	5,830
	Demand totals	2,263	3036	3,805	4,578	5,349
	Difference	2,767	1,994	2,299	1,416	481
Fourth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fifth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Sixth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

NOTES: UWMP Table 5-4 presents the comparison of multiple dry year supplies to demand, with the water demands reflecting 20x2020 per capita water use reduction requirements remaining in place after 2020. Because of this, the values shown here in Table 7-4 are slightly different than the values shown in UWMP Table 5-4.

**Table 8-1 Retail
Stages of Water Shortage Contingency Plan**

Stage	Complete Both	
	Percent Supply Reduction ¹ <i>Numerical value as a percent</i>	Water Supply Condition <i>(Narrative description)</i>
<i>Add additional rows as needed</i>		
A	15%	If DWD's supply is reduced by not more than 15 percent of normal use in a non-drought period, DWD will appeal to its customers to voluntarily reduce their water consumption, to prevent waste and unreasonable use of water and to comply strictly with the conservation measures set forth in DWD's Regulation No. 8 "Water Conservation" and in the UWMP.
B	35%	If DWD's supply is reduced by 15 to 35 percent, DWD will continue with all measures from Stage A. In addition, DWD's Board of Directors may declare, pursuant to CWC §350, a water shortage emergency condition to prevail within DWD. Thereafter, the Board could adopt regulations and restrictions on the use of water that will, in the sound discretion of the Board, conserve DWD's water supply for the greatest public benefit with particular regard to essential domestic uses, sanitation, and fire protection.
C	50%	If the reduction of available water supply is between 35 and 50 percent of normal use or if the measures implemented in Stages A and B above do not achieve their intended reduction in water use, the Board may adopt limitations on consumption by rationing customer water use and imposing extra charges and other penalties for exceeding allotments.
¹ One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		

NOTES: See UWMP Sections 5.4.2 and 5.4.3.

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Users <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>
Add additional rows as needed			
	Landscape - Restrict or prohibit runoff from landscape irrigation		
	Other - Require automatic shut of hoses		
	Other - Prohibit use of potable water for washing hard surfaces		
	Water Features - Restrict water use for decorative water features, such as fountains		
	Landscape - Prohibit certain types of landscape irrigation	during and up to 48 hours after measurable precipitation	
	CII - Restaurants may only serve water upon request		
	Landscape - Prohibit certain types of landscape irrigation	irrigation with potable water of ornamental turf on public street medians	
	Landscape - Prohibit certain types of landscape irrigation	irrigation with potable water of landscapes outside of newly constructed homes and buildings that is not delivered by drip or microspray	

	Landscape - Limit landscape irrigation to specific days	The use of potable water to irrigate the landscapes outside newly constructed homes or buildings in excess of an average of five gallons per hundred square feet of front yard landscape area per day over seven consecutive days during the months of April through November and the use of potable water in excess of an average of one and one half gallons per hundred square feet of front yard landscape area per day over seven consecutive days during the months of December through March.	
	CII - Lodging establishment must offer opt out of linen service		
	Other	Excessive water use in any one day	
	Other - Prohibit use of potable water for construction and dust control		
	Other water feature or swimming pool restriction	Prohibit the filling, or draining and re-filling of swimming pools, unless required by the Environmental Health Department	
	Landscape - Other landscape restriction or prohibition	Prohibit the planting of new lawns	
	Other	Require those installing new water mains to capture flushing water in holding tanks or other similar facility for non-potable reuse	

	Other	Require ice-pigging of new water mains, or alternate method approved by the District, in lieu of traditional flushing methods for cleaning new water mains	
	Other	Prohibit the use of water from the District's fire hydrants for other than fire protection purposes	
	Other	Require the installation of water saving low flow devices in existing structures	

NOTES: If DWD finds that any of the prohibited uses of water are not being complied with, it shall notify the customer at whose premises the breach occurs. If the customer fails to take prompt and reasonable action to halt the breach, DWD may, at the discretion of the General Manager or his designee, suspend delivery of water to the premises, and/or install a device to restrict the flow of water to the customer until DWD determines that there will

Table 8-3 Retail Only:
Stages of Water Shortage Contingency Plan - Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>
Add additional rows as needed		
	Other	Ensure correct application of more stringent design standards related to indoor and outdoor water use for new development projects (e.g., Statewide Model Water Efficient Landscape Ordinance).
	Other	Encourage the City of Oakley and Contra Costa County to establish appropriate graywater system permitting exemptions for residential applications
	Other	Create a policy to support permitting and regulation of residential rainwater systems.
	Other	Require commercial rainwater collection
	Provide Rebates on Plumbing Fixtures and Devices	
	Other	DWD's billing structure could be modified to include more significant incentives for water conservation, such as additional tiers in its rate structure.
	Other	Create a business outreach program on water conservation to provide reduction strategies to businesses within the community.
	Expand Public Information Campaign	
	Increase Frequency of Meter Reading	
NOTES: See Section 3.3.1.5 and Section 5.4.		

Table 8-4 Retail: Minimum Supply Next Three Years

	2016	2017	2018
Available Water Supply	2,725	2,725	2,725

NOTES:

Table 10-1 Retail: Notification to Cities and Counties

City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Antioch	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Brentwood	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Oakley	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Contra Costa County	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
Additional cities notified: Pittsburg; Additional agencies notified: Bethel Island Municipal Improvement District, Byron-Bethany Irrigation District, California Department of Public Health, Contra Costa County Community Development Department, Contra		

SB X7-7 Table 0: Units of Measure Used in UWMP*

(select one from the drop down list)

Million Gallons

**The unit of measure must be consistent with Table 2-3*

NOTES:

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	1,993	Million Gallons
	2008 total volume of delivered recycled water	-	Million Gallons
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period ^{1, 2}	10	Years
	Year beginning baseline period range	1995	
	Year ending baseline period range ³	2004	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range ⁴	2008	
¹ If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period. ² The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.			
³ The ending year must be between December 31, 2004 and December 31, 2010.			
⁴ The ending year must be between December 31, 2007 and December 31, 2010.			
NOTES:			

SB X7-7 Table 2: Method for Population Estimates**Method Used to Determine Population**
(may check more than one)☐**1. Department of Finance (DOF)**
DOF Table E-8 (1990 - 2000) and (2000-2010) and
DOF Table E-5 (2011 - 2015) when available☐**2. Persons-per-Connection Method**☒**3. DWR Population Tool**☐**4. Other**
DWR recommends pre-review

NOTES:

SB X7-7 Table 3: Service Area Population

Year		Population
10 to 15 Year Baseline Population		
Year 1	1995	19,251
Year 2	1996	20,768
Year 3	1997	21,375
Year 4	1998	22,095
Year 5	1999	22,645
Year 6	2000	23,043
Year 7	2001	23,999
Year 8	2002	25,013
Year 9	2003	26,018
Year 10	2004	26,514
<i>Year 11</i>		
<i>Year 12</i>		
<i>Year 13</i>		
<i>Year 14</i>		
<i>Year 15</i>		
5 Year Baseline Population		
Year 1	2004	26,514
Year 2	2005	26,960
Year 3	2006	31,124
Year 4	2007	31,108
Year 5	2008	31,224
2015 Compliance Year Population		
2015		34,930
NOTES:		

SB X7-7 Table 4: Annual Gross Water Use *

Baseline Year <i>Fm SB X7-7 Table 3</i>		Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1995	1,488	-	-	-	-	-	1,488
Year 2	1996	1,457	-	-	-	-	-	1,457
Year 3	1997	1,620	-	-	-	-	-	1,620
Year 4	1998	1,296	-	-	-	-	-	1,296
Year 5	1999	1,234	-	-	-	-	-	1,234
Year 6	2000	1,457	-	-	-	-	-	1,457
Year 7	2001	1,446	-	-	-	-	-	1,446
Year 8	2002	1,529	-	-	-	-	-	1,529
Year 9	2003	1,564	-	-	-	-	-	1,564
Year 10	2004	1,715	-	-	-	-	-	1,715
Year 11	0	-		-	-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								1,481
5 Year Baseline - Gross Water Use								
Year 1	2004	1,715	-		-	-	-	1,715
Year 2	2005	1,761	-	-	-	-	-	1,761
Year 3	2006	1,755	-	-	-	-	-	1,755
Year 4	2007	1,943	-	-	-	-	-	1,943
Year 5	2008	1,993	-	-	-	-	-	1,993
5 year baseline average gross water use								1,834
2015 Compliance Year - Gross Water Use								
2015		1,492	-	-	-	-	-	1,492

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source CCWD Surface Water

This water source is:

☐

The supplier's own water source

☒

A purchased or imported source

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
---	--	---	--

10 to 15 Year Baseline - Water into Distribution System

Year 1	1995	1,488	-	1,488
Year 2	1996	1,457	-	1,457
Year 3	1997	1,620	-	1,620
Year 4	1998	1,296	-	1,296
Year 5	1999	1,234	-	1,234
Year 6	2000	1,434	-	1,434
Year 7	2001	1,446	-	1,446
Year 8	2002	1,529	-	1,529
Year 9	2003	1,564	-	1,564
Year 10	2004	1,715	-	1,715
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-

5 Year Baseline - Water into Distribution System

Year 1	2004	1,715	-	1,715
Year 2	2005	1,761	-	1,761
Year 3	2006	1,683	-	1,683
Year 4	2007	1,636	-	1,636
Year 5	2008	1,691	-	1,691

2015 Compliance Year - Water into Distribution System

2015	1,252	-	1,252
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** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Groundwater
-----------------------	-------------

This water source is:



The supplier's own water source



A purchased or imported source

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
---	--	--	---

10 to 15 Year Baseline - Water into Distribution System

Year 1	1,995	0	0	0
Year 2	1,996	0	0	0
Year 3	1,997	0	0	0
Year 4	1,998	0	0	0
Year 5	1,999	0	0	0
Year 6	2,000	23	0	23
Year 7	2,001	0	0	0
Year 8	2,002	0	0	0
Year 9	2,003	0	0	0
Year 10	2,004	0	0	0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0

5 Year Baseline - Water into Distribution System

Year 1	2,004	0	0	0
Year 2	2,005	0	0	0
Year 3	2,006	72	0	72
Year 4	2,007	307	0	307
Year 5	2,008	302	0	302

2015 Compliance Year - Water into Distribution System

2015	240	0	240
-------------	-----	---	-----

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-B: Indirect Recycled Water Use Deduction *(For use only by agencies that are deducting indirect recycled water)*

Baseline Year <i>Fm SB X7-7 Table 3</i>	Surface Reservoir Augmentation					Groundwater Recharge			Total Deductible Volume of Indirect Recycled Water Entering the Distribution System	
	Volume Discharged from Reservoir for Distribution System Delivery	Percent Recycled Water	Recycled Water Delivered to Treatment Plant	Transmission/ Treatment Loss	Recycled Volume Entering Distribution System from Surface Reservoir Augmentation	Recycled Water Pumped by Utility*	Transmission/ Treatment Losses	Recycled Volume Entering Distribution System from Groundwater Recharge		
10-15 Year Baseline - Indirect Recycled Water Use										
Year 1	1995	-	-	-	-	-	-	-	-	
Year 2	1996	-	-	-	-	-	-	-	-	
Year 3	1997	-	-	-	-	-	-	-	-	
Year 4	1998	-	-	-	-	-	-	-	-	
Year 5	1999	-	-	-	-	-	-	-	-	
Year 6	2000	-	-	-	-	-	-	-	-	
Year 7	2001	-	-	-	-	-	-	-	-	
Year 8	2002	-	-	-	-	-	-	-	-	
Year 9	2003	-	-	-	-	-	-	-	-	
Year 10	2004	-	-	-	-	-	-	-	-	
Year 11	0			-		-		-	-	
Year 12	0			-		-		-	-	
Year 13	0			-		-		-	-	
Year 14	0			-		-		-	-	
Year 15	0			-		-		-	-	
5 Year Baseline - Indirect Recycled Water Use										
Year 1	2004	-	-	-	-	-	-	-	-	
Year 2	2005	-	-	-	-	-	-	-	-	
Year 3	2006	-	-	-	-	-	-	-	-	
Year 4	2007	-	-	-	-	-	-	-	-	
Year 5	2008	-	-	-	-	-	-	-	-	
2015 Compliance - Indirect Recycled Water Use										
2015		-	-	-	-	-	-	-	-	
*Suppliers will provide supplemental sheets to document the calculation for their input into "Recycled Water Pumped by Utility". The volume reported in this cell must be less than total groundwater pumped - See Methodology 1, Step 8, section 2.c.										
NOTES:										

SB X7-7 Table 4-C: Process Water Deduction Eligibility

(For use only by agencies that are deducting process water) Choose Only One

<input type="checkbox"/>	Criteria 1- Industrial water use is equal to or greater than 12% of gross water use. Complete SB X7-7 Table 4-C.1
<input type="checkbox"/>	Criteria 2 - Industrial water use is equal to or greater than 15 GPCD. Complete SB X7-7 Table 4-C.2
<input type="checkbox"/>	Criteria 3 - Non-industrial use is equal to or less than 120 GPCD. Complete SB X7-7 Table 4-C.3
<input type="checkbox"/>	Criteria 4 - Disadvantaged Community. Complete SB x7-7 Table 4-C.4

NOTES:

No process water deduction.

SB X7-7 Table 4-C.1: Process Water Deduction Eligibility
Criteria 1

Industrial water use is equal to or greater than 12% of gross water use

Baseline Year <i>Fm SB X7-7 Table 3</i>		Gross Water Use Without Process Water Deduction	Industrial Water Use	Percent Industrial Water	Eligible for Exclusion Y/N
10 to 15 Year Baseline - Process Water Deduction Eligibility					
Year 1	1995	1,488		0%	NO
Year 2	1996	1,457		0%	NO
Year 3	1997	1,620		0%	NO
Year 4	1998	1,296		0%	NO
Year 5	1999	1,234		0%	NO
Year 6	2000	1,457		0%	NO
Year 7	2001	1,446		0%	NO
Year 8	2002	1,529		0%	NO
Year 9	2003	1,564		0%	NO
Year 10	2004	1,715		0%	NO
Year 11	0	-			NO
Year 12	0	-			NO
Year 13	0	-			NO
Year 14	0	-			NO
Year 15	0	-			NO
5 Year Baseline - Process Water Deduction Eligibility					
Year 1	2004	1,715		0%	NO
Year 2	2005	1,761		0%	NO
Year 3	2006	1,755		0%	NO
Year 4	2007	1,943		0%	NO
Year 5	2008	1,993		0%	NO
2015 Compliance Year - Process Water Deduction Eligibility					
2015		1,492		0%	NO
NOTES: No process water deduction.					

SB X7-7 Table 4-C.2: Process Water Deduction Eligibility

Criteria 2

Industrial water use is equal to or greater than 15 GPCD

Baseline Year <i>Fm SB X7-7 Table 3</i>	Industrial Water Use	Population	Industrial GPCD	Eligible for Exclusion Y/N
10 to 15 Year Baseline - Process Water Deduction Eligibility				
Year 1	1995		19,251	- NO
Year 2	1996		20,768	- NO
Year 3	1997		21,375	- NO
Year 4	1998		22,095	- NO
Year 5	1999		22,645	- NO
Year 6	2000		23,043	- NO
Year 7	2001		23,999	- NO
Year 8	2002		25,013	- NO
Year 9	2003		26,018	- NO
Year 10	2004		26,514	- NO
<i>Year 11</i>	0		-	NO
<i>Year 12</i>	0		-	NO
<i>Year 13</i>	0		-	NO
<i>Year 14</i>	0		-	NO
<i>Year 15</i>	0		-	NO
5 Year Baseline - Process Water Deduction Eligibility				
Year 1	2004		26,514	- NO
Year 2	2005		26,960	- NO
Year 3	2006		31,124	- NO
Year 4	2007		31,108	- NO
Year 5	2008		31,224	- NO
2015 Compliance Year - Process Water Deduction Eligibility				
2015		34,930	-	NO
NOTES: No process water deduction.				

SB X7-7 Table 4-C.3: Process Water Deduction Eligibility
Criteria 3

Non-industrial use is equal to or less than 120 GPCD

Baseline Year <i>Fm SB X7-7 Table 3</i>	Gross Water Use Without Process Water Deduction <i>Fm SB X7-7 Table 4</i>	Industrial Water Use	Non-industrial Water Use	Population <i>Fm SB X7-7 Table 3</i>	Non-Industrial GPCD	Eligible for Exclusion Y/N
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10 to 15 Year Baseline - Process Water Deduction Eligibility

Year 1	1995	1,488		1,488	19,251	212	NO
Year 2	1996	1,457		1,457	20,768	192	NO
Year 3	1997	1,620		1,620	21,375	208	NO
Year 4	1998	1,296		1,296	22,095	161	NO
Year 5	1999	1,234		1,234	22,645	149	NO
Year 6	2000	1,457		1,457	23,043	173	NO
Year 7	2001	1,446		1,446	23,999	165	NO
Year 8	2002	1,529		1,529	25,013	167	NO
Year 9	2003	1,564		1,564	26,018	165	NO
Year 10	2004	1,715		1,715	26,514	177	NO
<i>Year 11</i>	0	-		-	-		NO
<i>Year 12</i>	0	-		-	-		NO
<i>Year 13</i>	0	-		-	-		NO
<i>Year 14</i>	0	-		-	-		NO
<i>Year 15</i>	0	-		-	-		NO

5 Year Baseline - Process Water Deduction Eligibility

Year 1	2004	1,715		1,715	26,514	177	NO
Year 2	2005	1,761		1,761	26,960	179	NO
Year 3	2006	1,755		1,755	31,124	154	NO
Year 4	2007	1,943		1,943	31,108	171	NO
Year 5	2008	1,993		1,993	31,224	175	NO

2015 Compliance Year - Process Water Deduction Eligibility

2015	1,492		1,492	34,930	117	YES
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NOTES: No process water deduction.

SB X7-7 Table 4-C.4: Process Water Deduction Eligibility**Criteria 4**

Disadvantaged Community. A "Disadvantaged Community" (DAC) is a community with a median household income less than 80 percent of the statewide average.

SELECT ONE

"Disadvantaged Community" status was determined using one of the methods listed below:

**1. IRWM DAC Mapping tool**

http://www.water.ca.gov/irwm/grants/resources_dac.cfm

If using the IRWM DAC Mapping Tool, include a screen shot from the tool showing that the service area is considered a DAC.

**2. 2010 Median Income**

California Median
Household Income

Service Area
Median Household
Income

Percentage of
Statewide
Average

**Eligible for
Exclusion?
Y/N**

2015 Compliance Year - Process Water Deduction Eligibility

2010

\$60,883

0%

YES

NOTES: No process water deduction.

SB X7-7 Table 4-D: Process Water Deduction - Volume

Complete a

separate table for each industrial customer with a process water exclusion

Name of Industrial Customer

Industrial Customer 1

Baseline Year <i>Fm SB X7-7 Table 3</i>	Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
--	---------------------------------------	---------------------------------------	-------------------------------------	------------------------------------	--

10 to 15 Year Baseline - Process Water Deduction

Year 1	1995					-
Year 2	1996					-
Year 3	1997					-
Year 4	1998					-
Year 5	1999					-
Year 6	2000					-
Year 7	2001					-
Year 8	2002					-
Year 9	2003					-
Year 10	2004					-
Year 11	0					-
Year 12	0					-
Year 13	0					-
Year 14	0					-
Year 15	0					-

5 Year Baseline - Process Water Deduction

Year 1	2004					-
Year 2	2005					-
Year 3	2006					-
Year 4	2007					-
Year 5	2008					-

2015 Compliance Year - Process Water Deduction

2015					-
------	--	--	--	--	---

NOTES: No process water deduction.

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)

Baseline Year <i>Fm SB X7-7 Table 3</i>	Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
---	---	--	--

10 to 15 Year Baseline GPCD

Year 1	1995	19,251	1,488	212
Year 2	1996	20,768	1,457	192
Year 3	1997	21,375	1,620	208
Year 4	1998	22,095	1,296	161
Year 5	1999	22,645	1,234	149
Year 6	2000	23,043	1,457	173
Year 7	2001	23,999	1,446	165
Year 8	2002	25,013	1,529	167
Year 9	2003	26,018	1,564	165
Year 10	2004	26,514	1,715	177
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	

10-15 Year Average Baseline GPCD	177
---	------------

5 Year Baseline GPCD

Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2004	26,514	1,715	177
Year 2	2005	26,960	1,761	179
Year 3	2006	31,124	1,755	154
Year 4	2007	31,108	1,943	171
Year 5	2008	31,224	1,993	175

5 Year Average Baseline GPCD	171
-------------------------------------	------------

2015 Compliance Year GPCD

2015	34,930	1,492	117
-------------	--------	-------	------------

NOTES:

SB X7-7 Table 6: Gallons per Capita per Day*Summary From Table SB X7-7 Table 5*

10-15 Year Baseline GPCD	177
5 Year Baseline GPCD	171
2015 Compliance Year GPCD	117

NOTES:

SB X7-7 Table 7: 2020 Target Method*Select Only One*

Target Method		Supporting Documentation
<input type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
<input checked="" type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input type="checkbox"/>	Method 4	Method 4 Calculator

NOTES:

SB X7-7 Table 7-E: Target Method 3

Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
<input type="checkbox"/>		North Coast	137	130
<input type="checkbox"/>		North Lahontan	173	164
<input type="checkbox"/>		Sacramento River	176	167
<input type="checkbox"/>		San Francisco Bay	131	124
<input checked="" type="checkbox"/>	100%	San Joaquin River	174	165
<input type="checkbox"/>		Central Coast	123	117
<input type="checkbox"/>		Tulare Lake	188	179
<input type="checkbox"/>		South Lahontan	170	162
<input type="checkbox"/>		South Coast	149	142
<input type="checkbox"/>		Colorado River	211	200
Target <i>(If more than one region is selected, this value is calculated.)</i>				165
NOTES:				

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target

5 Year Baseline GPCD From SB X7-7 Table 5	Maximum 2020 Target ¹	Calculated 2020 Target ²	Confirmed 2020 Target
171	163	165	163

¹ Maximum 2020 Target is 95% of the 5 Year Baseline GPCD
² 2020
 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and
 corresponding tables for agency's calculated target.

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD

Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
163	177	170

NOTES:

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Enter "0" if Adjustment Not Used			TOTAL Adjustments	Adjusted 2015 GPCD		
		Extraordinary Events	Weather Normalization	Economic Adjustment				
117	170	-	-	-	-	117	117	YES

NOTES:

Appendix D

Public Involvement Materials

Appendix D-1
Notices of UWMP Preparation



March 3, 2016

87 Carol Lane
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Vice President

Edward Garcia
Enrico Cinquini
John H. de Fremery

*General Manager
& Secretary:*
Mike Yeraka

General Counsel:
Jeffrey D. Polisner

Mr. John Kopchik, Director
Contra Costa County
Department of Conservation & Development
30 Muir Road
Martinez, CA 94553

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Kopchik:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to the DWR every five years.

In compliance with the California Water Code, DWD is providing this notice to encourage involvement in the update of the UWMP.

DWD's Final Draft 2015 UWMP is expected to be released in early May 2016. A public hearing will be held in May 2016, to provide an opportunity to comment on the Final Draft 2015 UWMP.

If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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& Secretary:*
Mike Yeraka

General Counsel:
Jeffrey D. Polisner

Ms. Linda Weekes
P. O. Box 276
Knightsen, CA 94548

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Ms. Weekes:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to the DWR every five years.

In compliance with the California Water Code, DWD is providing this notice to encourage involvement in the update of the UWMP.

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If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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General Counsel:
Jeffrey D. Polisner

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

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Pease:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to the DWR every five years.

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If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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General Counsel:
Jeffrey D. Polisner

Mr. Tim Ellsworth
Contra Costa County
Department of Health Services
2120 Diamond Blvd., Suite 200
Concord, CA 94520

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Ellsworth:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to the DWR every five years.

In compliance with the California Water Code, DWD is providing this notice to encourage involvement in the update of the UWMP.

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If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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General Counsel:
Jeffrey D. Polisner

Mr. Kevin Rohani, City Engineer
City of Oakley
3231 Main Street
Oakley, CA 94561

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Rohani:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to the DWR every five years.

In compliance with the California Water Code, DWD is providing this notice to encourage involvement in the update of the UWMP.

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If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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Mike Yeraka

General Counsel:
Jeffrey D. Polisner

Mr. Eric Swing
California Department of Public Health
850 Marina Bay Parkway
Bldg. P, Second Floor
Richmond, CA 94804-6403

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Swing:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to the DWR every five years.

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If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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& Secretary:*
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General Counsel:
Jeffrey D. Polisner

Mr. Chad Davisson, General Manager
Ironhouse Sanitary District
P. O. Box 1105
Oakley, CA 94561

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Davisson:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

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If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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& Secretary:*
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General Counsel:
Jeffrey D. Polisner

Mr. Rick Gilmore, General Manager
Byron-Bethany Irrigation District
7995 Bruns Road
Byron, CA 94514

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Gilmore:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

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If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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& Secretary:*
Mike Yeraka

General Counsel:
Jeffrey D. Polisner

Ms. Patricia Corey, General Manager
East Contra Costa Irrigation District
1711 Sellers Avenue
Brentwood, CA 94513

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Ms. Corey:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

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If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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& Secretary:*
Mike Yeraka

General Counsel:
Jeffrey D. Polisner

Mr. Chris Ehlers
Interim Director of Public Works
City of Brentwood
150 City Park Way
Brentwood, CA 94513

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Ehlers:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

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In compliance with the California Water Code, DWD is providing this notice to encourage involvement in the update of the UWMP.

DWD's Final Draft 2015 UWMP is expected to be released in early May 2016. A public hearing will be held in May 2016, to provide an opportunity to comment on the Final Draft 2015 UWMP.

If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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& Secretary:*
Mike Yeraka

General Counsel:
Jeffrey D. Polisner

Mr. Virgil Koehne
Water and Wastewater Manager
Town of Discovery Bay
1800 Willow Lake Road
Discovery Bay, CA 94514

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Koehne:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

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If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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www.diablowater.org

Directors:
Howard Hobbs
President

Kenneth L. Crockett
Vice President

Edward Garcia
Enrico Cinquini
John H. de Fremery

*General Manager
& Secretary:*
Mike Yeraka

General Counsel:
Jeffrey D. Polisner

Mr. Jeff Butzlass, Interim District Manager
Bethel Island Municipal Improvement District
P. O. Box 244
Bethel Island, CA 94511

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Butzlass:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to the DWR every five years.

In compliance with the California Water Code, DWD is providing this notice to encourage involvement in the update of the UWMP.

DWD's Final Draft 2015 UWMP is expected to be released in early May 2016. A public hearing will be held in May 2016, to provide an opportunity to comment on the Final Draft 2015 UWMP.

If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

87 Carol Lane
P.O. Box 127
Oakley, CA 94561-0127
925-625-3798
Fax 925-625-0814
www.diablowater.org

Directors:
Howard Hobbs
President

Kenneth L. Crockett
Vice President

Edward Garcia
Enrico Cinquini
John H. de Fremery

*General Manager
& Secretary:*
Mike Yeraka

General Counsel:
Jeffrey D. Polisner

Mr. Gary Darling, General Manager
Delta Diablo Sanitation District
2500 Pittsburg-Antioch Highway
Antioch, CA 94509

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Darling:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to the DWR every five years.

In compliance with the California Water Code, DWD is providing this notice to encourage involvement in the update of the UWMP.

DWD's Final Draft 2015 UWMP is expected to be released in early May 2016. A public hearing will be held in May 2016, to provide an opportunity to comment on the Final Draft 2015 UWMP.

If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



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*General Manager
& Secretary:*
Mike Yeraka

General Counsel:
Jeffrey D. Polisner

Mr. Mark Seedall
Contra Costa Water District
Planning Department
P. O. Box H2O
Concord, CA 94524

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Seedall:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to the DWR every five years.

In compliance with the California Water Code, DWD is providing this notice to encourage involvement in the update of the UWMP.

DWD's Final Draft 2015 UWMP is expected to be released in early May 2016. A public hearing will be held in May 2016, to provide an opportunity to comment on the Final Draft 2015 UWMP.

If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager



March 3, 2016

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Vice President

Edward Garcia
Enrico Cinquini
John H. de Fremery

*General Manager
& Secretary:*
Mike Yeraka

General Counsel:
Jeffrey D. Polisner

Mr. Ron Bernal, Director of Public Works
City of Antioch
Public Works Department
P. O. Box 5007
Antioch, CA 94531

Subject: Diablo Water District's 2015 Urban Water Management Plan

Dear Mr. Bernal:

Diablo Water District (DWD) is currently updating its Urban Water Management Plan (UWMP) which will be submitted to the State of California's Department of Water Resources (DWR) in July 2016.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to the DWR every five years.

In compliance with the California Water Code, DWD is providing this notice to encourage involvement in the update of the UWMP.

DWD's Final Draft 2015 UWMP is expected to be released in early May 2016. A public hearing will be held in May 2016, to provide an opportunity to comment on the Final Draft 2015 UWMP.

If you have any questions or if you would like additional information, please contact Christine Belleci via e-mail at cbelleci@diablowater.org or by phone at (925) 625-0588.

Sincerely,

Mike Yeraka, P.E.
General Manager

Appendix D-2
Notice of Public Hearing

Oakley Press

May 6, 2016

May 13, 2016

DIABLO WATER DISTRICT

NOTICE OF PUBLIC HEARING

and

**Availability of Final Draft Urban Water Management
Plan for Public Review**

As required by Law, the Diablo Water District has prepared an update of its Urban Water Management Plan. The Final Draft Plan is available for public inspection and review as of May 6, 2016, at the following locations:

Diablo Water District office in Oakley, 87 Carol Lane
(Located next to Les Schwab Tire Center)

Hours: Monday through Friday from 8 a.m. to noon and 1 p.m. to 5 p.m.

Closed from noon – 1 p.m.

Closed Saturday and Sunday

Diablo Water District's Website: www.diablowater.org

Oakley Public Library (Located in the Freedom High School Complex), 1050 Neroly Road

Hours: Tuesday and Wednesday from 10 a.m. to 9 p.m.;
Thursday from 2 p.m. to 9 p.m.; Friday from 2 p.m. to 6 p.m.; Saturday from 10 a.m. to 6 p.m.; Closed Sunday and Monday

A public hearing on the Final Draft Plan will be held on May 24, 2016, at 7:30 p.m. at the District's office. Comments may be presented in person at the public hearing. Written comments on the Final Draft Plan should be submitted to the District no later than June 3, 2016, at the address shown below.

Ms. Christine Belleci
Diablo Water District
P. O. Box 127
87 Carol Lane
Oakley, CA 94561

The Final Plan, incorporating appropriate comments, will be set for adoption at a Board Meeting in mid to late June 2016. Please call Christine Belleci at 925-625-0588 with any questions.

Publish May 6 and May 13, 2016

Appendix D-3
Minutes from Public Hearing

MINUTES OF THE SPECIAL MEETING
OF THE BOARD OF DIRECTORS OF
DIABLO WATER DISTRICT
HELD ON MAY 24, 2016

The special meeting of the Board of Directors of Diablo Water District was called to order by President Howard Hobbs, at the District's office, 87 Carol Lane, Oakley, California at 7:30 p.m. on May 24, 2016.

ROLL CALL

Directors Present: Hobbs, Crockett, Garcia, Cinquini, and de Fremery
Directors Absent: None
Staff Present: Messrs. Yeraka and Polisner
Others Present: Bill Brick and Andria Loutsch, CDM Smith

PUBLIC INPUT

There were no comments from members of the public.

APPROVAL OF MINUTES OF THE REGULAR MEETING OF APRIL 27, 2016

It was moved by Director de Fremery, seconded by Director Cinquini, and unanimously carried to approve the minutes of the regular meeting of April 27, 2016.

PUBLIC HEARING TO RECEIVE INPUT REGARDING THE DISTRICT'S 2015 URBAN WATER MANAGEMENT PLAN

At 7:32 p.m., the President opened the Public Hearing regarding the District's 2015 Urban Water Management Plan.

Mr. Brick and Ms. Loutsch made a presentation regarding the plan update and responded to questions put forth by the Directors.

Hearing no comments from members of the public, the President closed the Public Hearing at 7:58 p.m.

REVIEW OF DISTRICT INVESTMENT POLICY

Mr. Yeraka reviewed the Memo Item dated May 18, 2016, from Jennifer McCoy, the District's Accounting Operations Manager indicating that no changes are needed to the District's Investment Policy.

It was moved by Director Garcia, seconded by Director de Fremery, and unanimously carried to maintain the District's current Investment Policy.

RESOLUTION 2016-7 AMENDING SECTION 2a OF REGULATION NUMBER 1, LOWERING WATER QUANTITY CHARGES BY \$0.19 PER HUNDRED CUBIC FEET

After discussion, it was moved by Director Cinquini, seconded by Director Crockett, and unanimously carried to adopt Resolution 2016 – 7 entitled, “A Resolution of the Board of Directors of Diablo Water District Amending Section 2a of Regulation Number 1 – Rates and Charges for Water Service”.

RESOLUTION 2016-8 AMENDING THE DISTRICT’S WATER SHORTAGE CONTINGENCY PLAN AND REGULATION NUMBER 9 ELIMINATING RESTRICTIONS ON OUTDOOR WATERING

After discussion, it was moved by Director Crockett, seconded by Director Garcia, and unanimously carried to adopt Resolution 2016 – 8 entitled, “A Resolution of the Board of Directors of Diablo Water District Amending Sections 5.9.2.2 and 5.9.2.3 of the District’s Water Shortage Contingency Plan Contained within Its 2010 Urban Water Management Plan, and Amending the District’s Drought Emergency Regulation Number 9”.

REJECTION OF BIDS FOR THE BEACON WEST M-26 WELL PROJECT

After discussion, it was moved by Director Cinquini, seconded by Director Crockett, and unanimously carried to reject the bids for the Beacon West M-26 Well Project and direct the General Manager to request that the State of California close out the grant project.

UPDATE OF GENERAL COUNSEL LETTER OF AGREEMENT

After discussion, it was moved by Director de Fremery, seconded by Director Garcia, and unanimously carried to authorize the President to execute the Letter of Agreement dated May 24, 2016, with Mr. Jeffrey D. Polisner for General Counsel services.

AUTHORIZATION TO PROVIDE TEMPORARY 8-PERCENT SALARY INCREASE TO CUSTOMER SERVICE CLERK III WHILE ACCOUNTING OPERATIONS MANAGER IS ON MATERNITY LEAVE

After discussion, it was moved by Director de Cinquini, seconded by Director Crockett, and unanimously carried to authorize the temporary 8 percent salary increase to Customer Service Clerk III, Cheri Milina, while the Accounting Operations Manager is on maternity leave.

REVIEW OF NECESSITY TO HOLD PUBLIC HEARING FOR MAINTAINING CURRENT WATER CHARGES FOR COUNTY WELL SYSTEMS

After discussion, it was moved by Director Crockett, seconded by Director de Fremery and unanimously carried to approve not having a public hearing to continue the current water charges on the tax roll for the three county well systems owned by the District.

DISCUSSION ITEMS AND REPORTS

Mr. Yeraka reported on the following items:

1. Status of the Glen Park Well repair.
2. Water service to Spinnaker Cove Subdivision.
3. Update that one Water System Operator position has been filled.
4. The Monthly Financial Report for period April 1, 2016, to April 30, 2016.
5. Letter dated April 26, 2016, from Rosa Mena, Contra Costa County Clerk-Recorder-Elections Department regarding the November 8, 2016, General Election.

GENERAL COUNSEL

Mr. Polisner informed the Board that all of the Directors had completed the sexual harassment training.

ENGINEER

Mr. Brick updated the Board on the status of the Delta Coves Project.

COMMENTS OF DIRECTORS

Director Crockett reported on the East County Water Management Association meeting he attended on May 12, 2016.

NEXT MEETINGS OF THE BOARD OF DIRECTORS

The next meetings of the Board of Directors was set for June 1, June 22, July 13, 2016, and with the possibility of the August 24, 2016, meeting commencing at 6:00 p.m.

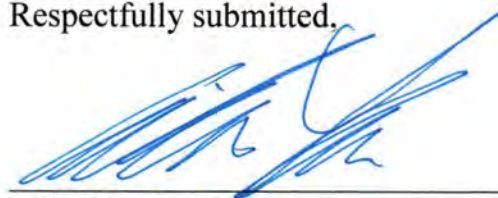
APPROVAL OF WARRANT REGISTER NUMBERS 2016 – 5 and 2016 – 5A

It was moved by Director Crockett, seconded by Director de Fremery, and unanimously carried to approve Warrant Register Numbers 2016 – 5 and 2016 – 5A and that warrants numbered 44718 through 44845 be issued as thereon indicated.

ADJOURNMENT

It was moved by Director Garcia, seconded by Director Cinquini, and unanimously carried to adjourn the meeting at 8:43 p.m.

Respectfully submitted,



Mike Yeraka, Secretary

Appendix E
UWMP Adoption Resolution

RESOLUTION NO. 2016 - 9

**A RESOLUTION OF THE BOARD OF DIRECTORS OF
DIABLO WATER DISTRICT ADOPTING UPDATED AND REVISED
URBAN WATER MANAGEMENT PLAN**

WHEREAS, the Urban Water Management Plan of Diablo Water District has been reviewed, updated and revised, and

WHEREAS, a draft of the updated and revised Plan has been made available for public inspection at the office of the District and at the Oakley Public Library since May 6, 2016, and

WHEREAS, following two notices published in the *Oakley Press*, a public hearing on the Plan was held on May 24, 2016, now therefore;

BE IT RESOLVED, by the Board of Directors of Diablo Water District as follows:

1. This Board finds and declares that the Urban Water Management Plan of Diablo Water District has been reviewed, updated and revised in accordance with the provisions of the Urban Water Management Planning Act.
2. Said Plan bearing the date June 2016, is hereby approved and adopted.
3. General Manager is directed to forward a copy of the Plan to the Department of Water Resources and California State Library within 30 days of adoption.

* * * * *

I certify that the foregoing is a true and complete copy of a resolution duly adopted by the Board of Directors of Diablo Water District at a regular meeting thereof held on June 22, 2016, by the following vote:

AYES: Hobbs, Crockett, Garcia, Cinquini, and de Fremery

NOES: None

ABSENT: None

DATED: June 23, 2016



Mike Yeraka, Secretary

Appendix F
AWWA Water Audit Worksheet



AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0
American Water Works Association
Copyright © 2014, All Rights Reserved.

? Click to access definition
+ Click to add a comment

Water Audit Report for: **Diablo Water District (0710007)**
Reporting Year: **2015** 1/2015 - 12/2015

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 (n/a or 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: **MILLION GALLONS (US) PER YEAR**

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

Volume from own sources: + ? 7 239.888 MG/Yr
Water imported: + ? 9 1,251.782 MG/Yr
Water exported: + ? n/a 0.000 MG/Yr

Master Meter and Supply Error Adjustments

Pcnt: Value: MG/Yr
+ ? 1.25% 0.000 MG/Yr
+ ? 0.25% 0.000 MG/Yr
+ ? 0.25% 0.000 MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 1,491.670 MG/Yr

AUTHORIZED CONSUMPTION

Billed metered: + ? 10 1,412.696 MG/Yr
Billed unmetered: + ? n/a 0.000 MG/Yr
Unbilled metered: + ? 8 0.000 MG/Yr
Unbilled unmetered: + ? 7 18.646 MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: 1,431.342 MG/Yr

Click here: ? for help using option buttons below
Pcnt: Value: MG/Yr
1.25% 0.000 MG/Yr
Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

60.328 MG/Yr

Apparent Losses

Unauthorized consumption: + ? 3.729 MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: + ? 9 3.541 MG/Yr
Systematic data handling errors: + ? 9 3.532 MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 10.802 MG/Yr

Pcnt: Value: MG/Yr
0.25% 0.000 MG/Yr
0.25% 0.000 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 49.527 MG/Yr

WATER LOSSES: 60.328 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 78.974 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: + ? 5 180.0 miles
Number of active AND inactive service connections: + ? 7 11,149
Service connection density: ? 62 conn./mile main

Are customer meters typically located at the curbside or property line? Yes (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line: + ?
Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: + ? 9 70.0 psi

COST DATA

Total annual cost of operating water system: + ? 7 \$10,251,671 \$/Year
Customer retail unit cost (applied to Apparent Losses): + ? 9 \$3.31 \$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses): + ? 9 \$/Million gallons ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 82 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: Water imported

2: Unauthorized consumption

3: Systematic data handling errors

Appendix G

CCWD Supply Reliability Analysis



Board of Directors
Joseph L. Campbell
President

Lisa M. Borba
Vice President

Bette Boatmun

John A. Burgh

Connstance Holdaway

General Manager
Jerry Brown

February 16, 2016

Mr. Mike Yeraka
General Manager
Diablo Water District
P.O. Box 127
Oakley, CA 94561

Subject: 2015 Urban Water Management Plan, Supply Reliability Analysis and Senate Bill x7-7 Requirements

Dear Mr. Yeraka:

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.

Table 1 provides water supply reliability information as a percentage of demand. For example, in the year 2040, the District anticipates it could supply at least 85 percent of its municipal customers' demands in the third year of a multiple year drought. 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 short-term conservation program.

Table 1 Water Supply Reliability Information (% of Demand)

Year Type	2020	2025	2030	2035	2040
Normal Year	100%	100%	100%	100%	100%
Single-Dry Year	100%	100%	100%	100%	100%
Multi-Year Drought, Year 1	100%	100%	100%	100%	100%
Multi-Year Drought, Year 2	100%	100%	100%	98%	94%
Multi-Year Drought, Year 3	90%	90%	90%	88%	85%

Table 2 provides the minimum water supply available in the next three years, assuming continuing drought conditions. As shown, the District anticipates it could supply up to 75 percent of its municipal customers' demands in the next three years if drought conditions continue and current statewide conservation measures remain in effect. This level represents a scenario in which water supplies are available to meet minimum public health and safety goals.

Table 2 Minimum Supply Next Three Years (% of Demand)

	2016	2017	2018
Water supply assuming continuing drought conditions	75%	75%	75%

Additionally, the District and its wholesale municipal customers are required to comply with Senate Bill x7-7 (SBx7-7), which requires water suppliers to report their 2015 water use target/compliance and 2020 water use target in their 2015 UWMPs. Water suppliers can comply with SBx7-7 individually and/or through a regional alliance. As discussed during our meeting in November 2015, the District will prepare a SBx7-7 analysis for its 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, and include a statement in its UWMP 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 the Department of Water Resources with the list of members in its regional alliance.

We will follow up this letter with a phone call to you to discuss any questions or concerns you may have about the information provided in this letter. If you have any questions prior to hearing from our office, please feel free to contact me at (925) 688-8127.

Sincerely,



Kimberly Lin, P.E.
Senior Engineer

Appendix H
2014 Consumer Confidence Report

Your Drinking Water in 2014 Annual Water Quality Report



From the Contra Costa Water District, the Cities of Antioch, Martinez and Pittsburg, and Diablo Water District (Oakley)

Get the Facts About Your Drinking Water

To Our Customers

Tap water is one of life's most valuable conveniences. We rely on clean tap water every day to wash our foods, clean our clothes and quench our thirst. It's for these reasons and many more that your tap water should be clean and safe—not just most of the time, but all of the time. We deliver high quality water at the lowest possible cost because it's what our customers deserve.

In 2014, the treated drinking water delivered to your home met all drinking water standards set by the state and federal governments. For test results, see Pages 5–6.

You can be confident your tap water is of a high quality. Frequent testing for water quality and regular improvements in the treatment process keeps your drinking water among the best in the country. This report includes water quality data collected throughout 2014 and answers questions you might have about your tap water. It reports on

the quality of tap water delivered by the Contra Costa Water District (CCWD), the cities of Antioch, Martinez and Pittsburg, and the Diablo Water District (DWD) in Oakley.

Need more information about the tap water in your community? Please call:

CCWD: Calvin Liu, 925-688-8091

City of Antioch: Lori Sarti, 925-779-7024

City of Martinez: Hiren Patel, 925-372-3588

City of Pittsburg: Ana Corti, 925-252-6916

Diablo Water District (Oakley):

Nacho Mendoza, 925-625-2112

Golden State Water Company (Bay Point):
925-458-3112

City of Brentwood: Eric Brennan, 925-516-6000

The State Water Resources Control Board Division of Drinking Water Wants You to Know

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water before it is treated include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

Pesticides and herbicides, which may come from a variety of sources, such as agriculture, urban stormwater runoff and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals that are byproducts of industrial processes and can also come from gas stations, urban stormwater runoff, agricultural applications and septic systems.

Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) and the State Water Resources Control Board Division of Drinking Water (DDW) prescribe regulations that

limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

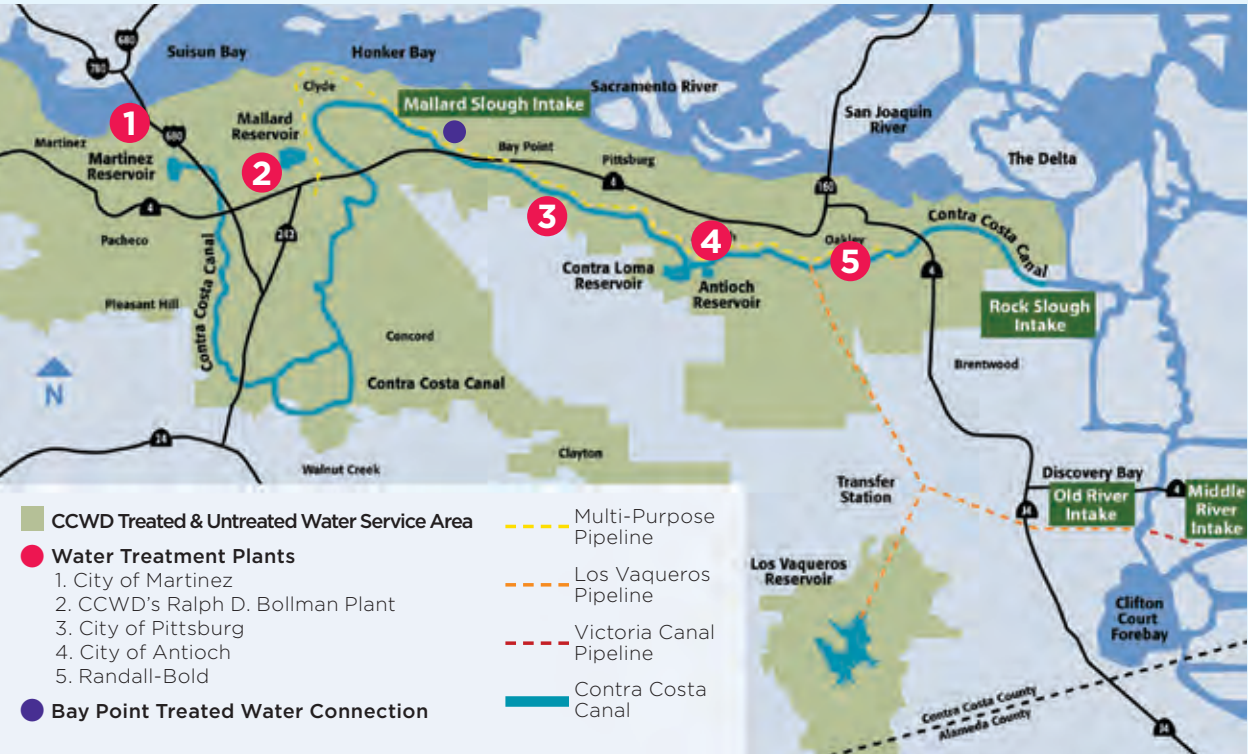
For more information about contaminants and potential health effects, or for EPA and CDC guidelines on ways to lessen the risk of infection, call the EPA Safe Drinking Water Hotline at:

1-800-426-4791 • www.epa.gov/safewater/

The Source of Your Water

Your investments in infrastructure and water quality projects like the Middle River Intake have ensured high quality water from all sources of your drinking water. The primary source of water for 500,000 residents in central and eastern Contra Costa County is the Sacramento-San Joaquin Delta. Protecting the health of the Delta is pivotal to maintaining the water quality you've come to enjoy.

The Contra Costa Water District (CCWD) pumps Delta water from four locations: Rock Slough near Oakley, Old River near Discovery Bay, Middle River on Victoria Island, and Mallard Slough in Bay Point. CCWD's major conveyance facilities are the Contra Costa Canal, the Los Vaqueros Pipeline and the Multi-Purpose Pipeline.



Clayton, Clyde, Concord, Pacheco, Port Costa, and parts of Pleasant Hill, Martinez and Walnut Creek: CCWD provides treated drinking water to homes and businesses. CCWD pumps water from the Delta, treats it in treatment plants and delivers it to customers through distribution pipelines.

Antioch: The City of Antioch purchases untreated water from CCWD, treats it in a city-owned treatment plant and delivers it to customers through the city's distribution pipelines. In addition to the untreated water it buys from CCWD, the City of Antioch can pump directly from the San Joaquin River and buy treated water from CCWD.

Pittsburg: The City of Pittsburg purchases untreated water from CCWD, treats it in a city-owned treatment plant and delivers it to customers through the city's distribution pipelines. In addition to the water it buys from CCWD, the City of Pittsburg can pump water from two wells.

Martinez (the portion of the city that does not receive treated water from CCWD): The City of Martinez purchases untreated water from CCWD, treats it in a city-owned treatment plant and delivers it to customers through the city's distribution pipelines.

Diablo Water District (Oakley): DWD purchases untreated water from CCWD. Water is treated at a plant jointly owned by DWD and CCWD, and blended with well water pumped from two wells. Water is then delivered to customers through DWD's distribution pipelines.

Bay Point: CCWD sells treated water to the Golden State Water Company. The water is delivered to customers through Bay Point distribution pipelines.

Brentwood: CCWD operates the City of Brentwood's treatment plant to treat water for the City.

Get the Facts About Your Drinking Water (cont.)

The Source of Your Water (cont.)

Watershed Sanitary Surveys

Sanitary surveys of the watershed that comes in contact with your water are conducted every three to five years. CCWD and the City of Antioch have both conducted sanitary surveys. CCWD updated its sanitary survey in 2007 and 2010. The City of Antioch updated its survey in 2007 and 2012. These surveys identified that the Delta water supply could be affected by contamination from industrial and municipal wastewater discharges, urban runoff,

highway runoff, agricultural runoff, pesticides, grazing animals, concentrated animal facilities, wild animals, mine runoff, recreational activities, traffic accidents/spills, saltwater intrusion, geologic hazards and solid and hazardous waste disposal facilities. The surveys concluded that potential contamination is regularly mitigated by the natural flushing of the Delta, controls at the contamination sources and existing water treatment practices



Your drinking water is tested on a regular basis to ensure it meets or exceeds all state and federal standards.

Source Water Assessments

Source water assessments are one-time studies conducted to determine how susceptible a water supply is to contamination. Assessment results are below.

Contra Costa Water District

In June 2002 and May 2003, source water assessments were conducted for the CCWD's water sources. These sources include the Delta intakes on Old River, Rock Slough and Mallard Slough, as well as the Los Vaqueros, Contra Loma, Mallard and Martinez reservoirs and the Contra Costa Canal (sampled at Clyde).

The assessments were based on a review of data collected from 1996 through 2001, as well as a review of the activities and facilities located at or near each source.

In summary:

- **The District's Delta sources** were found to be most vulnerable to the effects of saltwater intrusion, agricultural drainage, recreational boating and regulated point discharges.
- **The District's reservoirs** were found to be most vulnerable to the effects of associated recreation, roads and parking lots, and watershed runoff.
- **The Contra Costa Canal** traverses rural, municipal and industrial areas. It was found to be most vulnerable to gas stations, chemical/petroleum processing/storage, septic systems, historic landfills and military institutions.

For more information, contact Brett Kawakami at **925-688-8183**.

Antioch

In April 2003, a source water assessment was conducted for the Antioch Municipal Reservoir and the San Joaquin River source of the City of Antioch water system.

In summary:

- **The Antioch Municipal Reservoir** was found to be most vulnerable to sewer collection systems; this activity is not associated with contaminants in the water supply.
- **The San Joaquin River source** was found to be most vulnerable to the effects of saltwater intrusion, chemical/petroleum processing or storage, and regulated point discharges.

Water from the San Joaquin River is not always acceptable due to saltwater intrusion. Historically, as major diversions began and the freshwater flows into the Delta decreased, saline bay waters have moved further upstream, replacing the fresh water. When chloride levels in the river exceed 250 milligrams per liter, the City stops pumping until chloride levels decrease.

For more information, contact Lori Sarti at **925-779-7024**.

Source Water Assessments (cont.)

City of Pittsburg

In November 2001, a source water assessment was conducted for the City of Pittsburg's Rossmoor well. In July 2009, a source water assessment was conducted for the Bodega well.

The following water sources were found to be most vulnerable to the following activities NOT associated with any detected contaminants in the water supply:

- **Bodega Well:** Residential sewer collection systems, abandoned military installation (Camp Stoneman) and illegal activities (drug labs).
- **Rossmoor Well:** Grazing, sewer collection systems, utility stations and maintenance areas.

You may request a summary of the assessment by contacting the State Water Resources Control Board at **510-620-3474**.

Diablo Water District (Oakley)

A source water assessment was conducted for Diablo Water District's Glen Park Well in April 2005 and Stonecreek Well in March 2011. Both sources are considered to be most vulnerable to the following activities NOT associated with contaminants in the water supply: historic waste dumps/landfills and septic systems – high density (>1/acre).

You may request a summary of the assessment by contacting Nacho Mendoza, **925-625-2112**.



City of Antioch's Municipal Reservoir

Water Quality Notifications

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes *Cryptosporidium*, the most commonly-used filtration methods cannot guarantee 100-percent removal. Our monitoring indicates the presence of these organisms in untreated source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants, small children and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctors regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Your drinking water provider is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at **800-426-4791** or www.epa.gov/safewater/lead.

Fluoride

To prevent tooth decay, fluoride is added to your drinking water. This is a long-standing practice that has improved public health over many years. The DDW is a good source of information about fluoridation. Information can be found at www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml.

Understanding the Table
The following tables contain detailed information about the water that comes from your tap. Your water is regularly tested for more than 120 chemicals and other substances, as well as radioactivity. **The table lists only substances that were detected.**

Definitions
Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency Office of Health and Hazard Assessment.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

PHGs, MCLGs and MRDLGs are non-mandatory goals based solely on public health considerations using the most recent scientific research available. When these goals are set, the technological and economic feasibility of reaching these goals is not considered.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically or technologically feasible.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

Primary Drinking Water Standards: MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards: Secondary MCLs are set for contaminants that affect the odor, taste or appearance of water.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Treated Water: Water that has been filtered and treated.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Untreated Water: Water before it has been filtered and treated.

Unregulated Contaminant Monitoring Rule (UCMR): A federal rule that requires monitoring for contaminants that are unregulated. Unregulated contaminants are those that don't yet have a drinking water standard set by the U.S. Environmental Protection Agency. The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard.

Water Test Results

					Contra Costa Water District		Randall-Bold WTP ¹		CCWD/ Brentwood WTP		Diablo Water District		City of Martinez		City of Antioch		City of Pittsburg					
Primary Drinking Water Standards	PHG	MCLG or [MRDLG]	MCL or [MRDL]	DLR	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Major Source in Drinking Water			
Arsenic (µg/L)	0.004	n/a	10	2	ND	ND	ND	ND	2.0	n/a	3.1-3.2	n/a	ND	ND	ND	ND	2.4	n/a	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes			
Fluoride (mg/L)	1	n/a	2	0.1	0.7-0.9	0.8	0.8-1.0	0.9	ND-0.2	ND	0.7-1.0	0.8	0.7-0.8	0.8	0.7-1.0	0.8	0.6-1.0	0.8	Water additive that promotes strong teeth; erosion of natural deposits			
Nitrate as NO ₃ (mg/L)	45	n/a	45	2	ND-2.8	ND	ND-3.1	ND	ND	ND	ND-3.1	2.4	ND	ND	ND-2.2	ND	3.6	n/a	Runoff and leaching from fertilizer use; erosion of natural deposits			
	PHG	MCLG or [MRDLG]	MCL or [MRDL]	DLR	Maximum Value	Lowest Monthly % of Samples That Meets Requirements	Maximum Value	Lowest Monthly % of Samples That Meets Requirements	Maximum Value	Lowest Monthly % of Samples That Meets Requirements	Maximum Value	Lowest Monthly % of Samples That Meets Requirements	Maximum Value	Lowest Monthly % of Samples That Meets Requirements	Maximum Value	Lowest Monthly % of Samples That Meets Requirements	Maximum Value	Lowest Monthly % of Samples That Meets Requirements	Major Source in Drinking Water			
Turbidity (NTU) (treatment plant)	n/a	n/a	TT	n/a	0.32	99%	0.1	100%	0.08	100%	n/a	n/a	0.087	100%	0.14	100%	0.19	100%	Soil runoff			
	PHG	MCLG or [MRDLG]	MCL or [MRDL]	DLR	Range of All Distribution Sites Tested	Highest Quarterly RAA	Range of All Distribution Sites Tested	Highest Quarterly RAA	Range of All Distribution Sites Tested	Highest Quarterly RAA	Range of All Distribution Sites Tested	Highest Quarterly RAA	Range of All Distribution Sites Tested	Highest Quarterly RAA	Range of All Distribution Sites Tested	Highest Quarterly RAA	Range of All Distribution Sites Tested	Highest Quarterly RAA	Major Source in Drinking Water			
Bromate (µg/L) ²	0.1	n/a	10	5	ND-16	ND	ND-6.2	ND	ND-6.3	ND	ND-6.2	ND	ND-18	6	n/a	n/a	n/a	n/a	Byproduct of drinking water disinfection			
Chloramines as Cl ₂ (mg/L) ²	n/a	[4]	[4]	n/a	ND-3.5	1.7	n/a	n/a	n/a	n/a	0.1-3.4	2.3	0.9-1.7	1.4	0.2-3.6	2.2	0.1-2.4	1.2	Drinking water disinfectant added for treatment			
Haloacetic acids (µg/L) ²	n/a	n/a	60	1	ND-11	4.4	n/a	n/a	n/a	n/a	ND-6.3	3.2	ND-6.9	4.2	3.3-7.0	5.6	1.3-17.7	10.8	Byproduct of drinking water disinfection			
Total trihalomethanes (µg/L) ²	n/a	n/a	80	0.5	3.4-57	29	n/a	n/a	n/a	n/a	16-33	25	10-23	19.3	24-75	65.8	14.7-278	21.9	Byproduct of drinking water disinfection			
Microbiological Standards	PHG	MCLG	MCL	DLR	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Major Source in Drinking Water			
Total coliform	n/a	0	>5% of monthly samples	n/a	ND-1.1%	0.23%	n/a	n/a	n/a	n/a	ND-3.0%	0.38%	ND	ND	ND	ND	ND	ND	Naturally present in environment			
Radiochemistry	PHG	MCLG	MCL	DLR	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	<div>Abbreviations DLR Detection limit reported mg/L Milligrams per liter n/a Not analyzed; not applicable ND Not detected ng/L Nanograms per liter NTU Nephelometric turbidity units pCi/L Picocuries per liter (a measure of radioactivity) RAA Running annual average µg/L Micrograms per liter µmhos/cm Micromhos per centimeter (a measure of conductivity)</div>			
Uranium (pCi/L)	0.5	n/a	20	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.2	n/a				
Secondary Drinking Water Standards	PHG	MCLG	MCL	DLR	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average				
Chloride (mg/L)	n/a	n/a	250	n/a	80-110	97	59-110	94	79-110	100	65-110	100	59-115	95	25-154	104	56-144	106				
Manganese (µg/L)	n/a	n/a	50	20	ND	n/a	ND	n/a	ND	n/a	ND-38	ND	ND	ND	ND	ND	ND	ND				
Odor-threshold (units)	n/a	n/a	3 units	n/a	1	n/a	2	n/a	2	n/a	2	n/a	1-2	1.5	2	n/a	1.3-2.0	1.3				
Specific conductivity (µmhos/cm)	n/a	n/a	1,600	n/a	490-680	600	490-680	600	540-660	595	570-770	700	610-640	625	283-728	605	272-878	700				
Sulfate (mg/L)	n/a	n/a	250	n/a	52-85	66	51-92	67	51-68	59	55-100	87	54-65	60	43-58	51	41-73	60				
Total dissolved solids (mg/L)	n/a	n/a	500	n/a	281-360 ³	321 ³	271-379 ³	324 ³	187-466 ³	314 ³	320-430 ³	390 ³	350-360	355	141-369	303	273-440	387				
Turbidity (NTU) (distribution system)	n/a	n/a	5	n/a	0.04-0.9	0.11	n/a	n/a	n/a	n/a	0.04-0.19	0.08	0.06-0.83	0.14	0.05-0.18	0.08	0.05-0.28	0.11				
General Water Quality Parameters	PHG	MCLG	MCL	DLR	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average				
Alkalinity (mg/L)	n/a	n/a	n/a	n/a	60-84	70	60-96	74	59-90	72	82-115	99	75-96	82	51-108	88	87-142	109				
Ammonia (mg/L)	n/a	n/a	n/a	n/a	0.5	n/a	0.4	n/a	0.4	n/a	0.3	n/a	n/a	n/a	ND	n/a	ND-0.62	0.29				
Bromide (mg/L)	n/a	n/a	n/a	n/a	0.1-0.4	0.2	0.1-0.9	0.3	ND-0.6	0.3	0.1-0.3	0.2	0.2-0.3	0.3	n/a	n/a	n/a	n/a				
Calcium (mg/L)	n/a	n/a	n/a	n/a	16-25	21	16-29	22	16-23	20	23-36	31	37-86	60	14-27	21	30	n/a				
Hardness (mg/L)	n/a	n/a	n/a	n/a	110-130	116	100-150	117	100-120	110	120-170	153	62-140	112	60-124	103	104-189	150				
Magnesium (mg/L)	n/a	n/a	n/a	n/a	13-15	14	13-16	14	13-15	14	15-21	19	25-54	52	17	n/a	10	n/a				
pH	n/a	n/a	n/a	n/a	8.2-8.9	8.5	8.2-8.9	8.6	7.1-9.0	8.4	7.9-8.7	8.2	7.6-8.9	8.2	8.0-9.2	8.7	7.3-8.7	8.5				
Potassium (mg/L)	n/a	n/a	n/a	n/a	3.1-3.7	3.3	2.8-3.7	3.3	3.0-3.5	3.2	2.8-3.6	3.2	3.5-3.7	3.6	3.9	n/a	2	n/a				
Sodium (mg/L)	n/a	n/a	n/a	n/a	62-84	74	58-82	75	66-82	73	66-94	83	74-77	76	17-103	69	20	n/a				
Lead/Copper Study	PHG	MCLG	Action Limit	DLR	# Sites Tested / # Exceeding Action Limit	90% Percentile	# Sites Tested / # Exceeding Action Limit	90% Percentile	# Sites Tested / # Exceeding Action Limit	90% Percentile	# Sites Tested / # Exceeding Action Limit	90% Percentile	# Sites Tested / # Exceeding Action Limit	90% Percentile	# Sites Tested / # Exceeding Action Limit	90% Percentile	# Sites Tested / # Exceeding Action Limit	90% Percentile				
EPA lead study (µg/L)	0.2	n/a	15	5	60/0	ND	n/a	n/a	n/a	n/a	33/0	ND	62/0	ND	60/2	ND	48/0	ND				
EPA copper study (mg/L)	0.3	n/a	1.3	0.05	60/0	0.16	n/a	n/a	n/a	n/a	33/0	0.15	62/0	0.06	60/0	ND	48/0	ND				
Date of Study					June 2013		n/a		n/a		June 2013		July 2012		August 2012		August 2012					
UCMR3 Assessment Monitoring (2013-2015)	PHG	MCL [MCLG]	Notification Level	Minimum Reporting Level	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	<div>¹ Randall-Bold WTP is a regular source of water for CCWD, DWD and the Golden State Water Company in Bay Point. It is also an as-needed source of water for Antioch and Brentwood and an emergency source for Pittsburg. ² MCL Compliance is based on an annual average, not an individual result. ³ Calculated result.</div>			
Bromochloromethane (µg/L)	n/a	n/a	n/a	0.06	ND-0.06	ND	ND-0.1	0.07	n/a	n/a	ND-0.08	ND	ND	ND	ND-0.15	0.09	0.21	n/a				
Chlorate (µg/L)	n/a	n/a	n/a	20	26-170	68	ND	ND	n/a	n/a	24-110	54	72-350	196	ND-44	ND	ND	n/a				
Chromium (µg/L)	n/a	50	n/a	0.2	ND-0.4	ND	ND-0.5	ND	n/a	n/a	ND-0.7	0.4	ND-0.8	0.3	ND-0.52	ND	ND	n/a				
Hexavalent Chromium (µg/L)	0.02	n/a	n/a	0.03	0.05-0.14	0.08	0.06-0.1	0.08	n/a	n/a	0.18-0.49	0.33	0.046-0.3	0.17	0.056-0.1	0.08	0.05	n/a				
Molybdenum (µg/L)	n/a	n/a	n/a	1	ND-1.7	1.2	ND-1.5	1	n/a	n/a	1.1-1.8	1.5	1.0-1.4	1.2	ND-1.2	ND	2.6	n/a				
Strontium (µg/L)	n/a	n/a	n/a	0.3	140-190	154	140-180	155	n/a	n/a	200-300	234	130-180	155	110-190	153	290	n/a				
Vanadium (µg/L)	n/a	n/a	50	0.2	2.2-2.9	2.6	1.6-2.4	2.2	n/a	n/a	1.7-2.7	2.5	1.5-3.3	2.4	1.4-3.4	2.6	3.2	n/a				
Date of Study					2013		2013		n/a		2013		2013		2013-2014		2014-2015					

¹ Randall-Bold WTP is a regular source of water for CCWD, DWD and the Golden State Water Company in Bay Point. It is also an as-needed source of water for Antioch and Brentwood and an emergency source for Pittsburg.
² MCL Compliance is based on an annual average, not an individual result.
³ Calculated result.

How to Get Involved in the Quality of Your Water

Contra Costa Water District

The Board of Directors meets in regular session at 6:30 p.m. on the first and third Wednesday of each month. Meetings are held in the Board Room at the Contra Costa Water District Center, 1331 Concord Ave., Concord. For meeting agendas, contact the District Secretary at **925-688-8000** or visit **www.ccwater.com**.

City of Martinez

The Martinez City Council meets in regular session at 7 p.m. on the first and third Wednesday of each month. Meetings are held in Council Chambers at 525 Henrietta Street, Martinez. For meeting agendas, contact the Deputy City Clerk at **925-372-3512** or visit **www.cityofmartinez.org**.

City of Pittsburg

The Pittsburg City Council meets in regular session at 7 p.m. on the first and third Monday

of each month. Meetings are held in Council Chambers at 65 Civic Drive, Pittsburg. For meeting agendas, call **925-252-4850** or visit **www.ci.pittsburg.ca.us**.

City of Antioch

The Antioch City Council meets in regular session at 7 p.m. on the second and fourth Tuesday of each month. Meetings are held in Council Chambers at Third and H streets, Antioch. For meeting agendas, contact the City Clerk at **925-779-7009** or visit **www.ci.antioch.ca.us**.

Diablo Water District (Oakley)

The Board of Directors meets in regular session at 7:30 p.m. on the fourth Wednesday of each month. Meetings are held at 87 Carol Lane, Oakley. For meeting agendas, contact DWD at **925-625-3798** or visit **www.diablowater.org**.

This report contains important information about your drinking water. Have someone translate it for you, or speak with someone who understands it.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

此报告包含有关您的饮用水的重要信息。请人帮您翻译出来，或请看懂此报告的人将内容说给您听。

این گزارش شامل اطلاعات مهمی درمورد آب
اشامیدنی شما میباشد. از شخصی بخواهید
که به شما ترجمه کنند و یا با شخصی که این
موضوع را میفهمند صحبت بکنید.

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

This report is also available online at **www.ccwater.com**.



CONTRA COSTA
WATER DISTRICT



On the cover: East of Mt. Diablo, Los Vaqueros Reservoir, near Brentwood, stores drinking water for more than 500,000 people in Central and Eastern Contra Costa County. *Photo by Wayne McClelland.*

Appendix I
Diablo Water District Regulation No. 8, Water
Conservation

REGULATION NO. 8
WATER CONSERVATION

Section 1. Purpose

The purpose of this regulation is to assure that all water furnished by the District is put to reasonable beneficial use, to prevent unreasonable use or waste of water, and to promote efficient use and conservation of water.

Section 2. Prevention of Waste or Unreasonable use

All users of water furnished by the District are required to take all reasonable action to prevent waste of water. The District shall have the right, following notice and/or hearing, to impose upon any water service connection such conditions as the District determines to be necessary to prevent unreasonable use or waste of water.

Section 3. Conservation Measures by Customers

All users of water furnished by the District are required to take all reasonable action to conserve water. Among the actions recommended are the following.

- a. Periodically examine all plumbing systems to detect any leaks and repair leaks immediately upon detection.
- b. Prevent water from running off premises into street gutters.

- c. Install flow restrictors or replace all showerheads to limit flow to not more than 2.5 gallons per minute.
- d. Install displacement devices in toilet tanks to reduce water use to 3 gallons per flush or replace older toilets with those that use 1.6 gallons per flush or less.
- e. Install aerators or laminar flow devices on kitchen and lavatory facets to reduce maximum flow to 1.5 gallons per minute.
- f. Minimize the amount of turf used in landscape areas and use drought-tolerant (low water-using) plants.

Section 4. Conservation Measures of District

- a. The District shall vigorously pursue at all times a program for the conservation of water consisting in such cost-effective measures as are from time to time authorized by the Board of Directors.
- b. All Water service, except through hydrants for fire fighting, shall be metered.
- c. The General Manager is authorized and directed to do the following:
 - (1) Make audits as frequently as he deems necessary of the quantities of water received by the District and the quantities of water delivered to water users in order to detect systems leaks. The result of such audits shall be

reported to the Board of Directors no less frequently than annually.

- (2) Cooperate with local school districts in developing education programs on efficient water use.
- (3) Make available at the District's office, public library and other public places, printed materials on the need for, and methods of, water conservation.

Section 5. New Landscaping

During times when water restriction measures are not in place, no area in the District shall be landscaped, planted or irrigated unless the landscape plan and irrigation system makes efficient use of a minimum quantity of water and is installed, operated and maintained in accordance with plans that comply with all ordinances and regulations of the County of Contra Costa, including but not limited to Ordinance Number 90-59, Water Conservation Landscaping in New Developments.

Appendix J

Diablo Water District Regulation No. 9, Drought Emergency Regulation

REGULATION NO. 9

DROUGHT EMERGENCY REGULATION

Section 1. Authority and Effective Period.

The District's Water Shortage Contingency Plan and Regulation Number 9 are amended and adopted pursuant to the California Governor's Executive Order B-29-15 and expanded emergency regulation adopted by the California State Water Resources Control Board, on May 5, 2015, which added new sections to Title 23 of California Code of Regulations ordering Diablo Water District and Other Urban Water Suppliers in the same tier category to reduce consumption by 28 percent of 2013 use and to implement conservation measures to prohibit outdoor water wasting, provide monthly data on water production, add new prohibitions affecting commercial businesses, and to place limitations on outdoor irrigation. Pursuant to the authority contained in the California Water Code §350 et seq., §375 et seq., §31021 et seq., § 31024 et seq., and §31026 et seq., drought conditions exist that can affect the water supply and quality available to the District. The provisions of the Water Shortage Contingency Plan and Regulation Number 9 shall take effect on May 15, 2015, and shall remain in effect until such time that the drought emergency is declared to be over or until such time as this Water Shortage Contingency Plan and Regulation Number 9 are modified based upon changes to and any subsequent clarifications of Executive Order B-29-15 or other applicable laws and regulations.

Section 2. Reduction of Water Use.

To conserve the water supply for the greatest public benefit with particular regard to health, sanitation, and fire protection during the current drought emergency conditions; the District is calling upon each of its customers to take the following actions:

First, reduce outdoor irrigation from 2013 use so as not to cause excessive run off.

Second, eliminate unnecessary uses of water.

Third, take immediate action to prevent any water from being wasted.

Section 3. Prohibited Uses of Water

(a) To promote water conservation, each of the following uses of potable water is prohibited; except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency:

1) The application of water to outdoor landscapes in a manner that causes excessive runoff such that water flows onto adjacent property, non-irrigated area, private and public walkways, roadways, parking lots, or structures;

2) The use of a hose to wash an automobile, boat or trailer; except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use;

3) The application of water to any hard surface; including but not limited to driveways, sidewalks, and asphalt, unless failure to do so would create a hazard to the public health and safety of any individual or the public;

4) The use of potable water in a fountain or decorative water feature, unless the water is part of a recirculating system or unless it is part of a public

recreational interactive water feature;

5) Watering outdoor landscapes during and up to 48 hours after measurable precipitation;

6) The serving of drinking water to customers unless upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;

7) The irrigation with potable water of ornamental turf on public street medians;

8) The irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with the regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development;

9) The service of daily laundered towels and linens at hotels and motels unless upon request of the guest. A notice of this provision shall be prominently displayed in each bathroom; and

10) Excessive water use in any one day.

Section 4. Exception and Waivers.

Written applications for exceptions to, or waivers of, any provision of these regulations shall be received and may be granted by the General Manager, in his sole discretion, in any case where the restriction might create a hazard to the health and safety of any individual or public, or would cause an undue and unavoidable hardship.

Section 5. Water Conservation.

This Regulation supplements the provisions of Regulation No. 8, Water Conservation and where a conflict between the two may exist, this Regulation shall take precedence.

Section 6. Violations.

If the District finds that any of the prohibited uses of water contained in Section 3 of this regulation is not being complied with, it shall notify the customer at whose premises the breach occurs. If the customer fails to take prompt and reasonable action to halt the breach; the District may, at the discretion of the General Manager or his designee, suspend delivery of water to the premises, and/or install a device to restrict the flow of water to the customer until the District determines that there will be no further breach of the District's regulations; and/or the District may fine the customer \$50 per day after an initial warning; \$100 per day for any second violation; \$200 per day for any third violation; and \$500 per day for any subsequent violations. The costs, as determined by the General Manager, of disconnecting the service, installing a flow restrictor, and reconnecting the service shall be charged to and paid by the customer.

Section 7. Disclosure to New Home Buyers.

Sellers of new homes shall perform the following:

- (a) Review the content of this Regulation with new home buyers and provide them with a copy.
- (b) Educate new home buyers in the use, adjustment, and setting of their irrigation timer with an emphasis on not over watering their landscaping.

Appendix K
Diablo Water District Emergency Plan

**EMERGENCY PLAN
OF
DIABLO WATER DISTRICT
APRIL 2016**

In the event of an interruption of water supply beyond the control of the District's staff or a local emergency declared by an adjoining city or a state of emergency declared by the Governor or his staff, Diablo Water District's Emergency Plan will become effective. The emergency management plan of the District will follow the SEMS guidelines as required by law. Upon notice or knowledge of such event, District employees are to immediately report to work once the emergency needs of the employee's family have been met, regardless of holiday or vacation schedule and notify the following:

District's Engineering Consultants

CDM Smith, Inc.925-933-2900

State and County Health Services

State of California Health Services – General Phone.....510-540-2158

Betty Graham,	Work	510-620-3454
District Engineer	Evening.....	510-501-6856

Eric Swing	Work	510-620-3604
	Evening.....	510-390-3544

Contra Costa County Environmental Health Department925-692-2500
(After hours phone sheriff (925-335-1500) and ask for the Health Officer on-call)

Contra Costa County – Hazardous Materials925-335-3232

Local Unified Program Agency (CUPA).....925-335-3200

Contra Costa County Sheriff (Non-Emergency)925-335-1500
(Emergency) **Do not call from cell phones** 911

<u>Contra Costa County Office of Emergency Services</u>	925-646-4461
After Hours (24 Hrs) (ask for alert duty officer)	925-228-5000
Fax	925-646-1120

State Warning Center

<u>State of California Office of Emergency Services</u>(24 Hours)	916-845-8510
<u>Coastal Region Office of Emergency Services</u>(24 Hours)	510-286-0895
<u>Contra Costa Water District</u>(24 Hours)	925-688-8374
<u>Randall-Bold Water Treatment Plant</u>	925-625-6600
Randall-Bold Water Treatment Fax	925-625-4658
<u>Oakley Police Department</u> (24 Hours-Dispatch)	925-625-8060
<u>East Contra Costa County Fire Protection District</u>	925-634-3400
Emergency	911
Non-Emergency (business)	(24 Hours)..... 925-625-9276

For emergency repairs, names of contractors and suppliers are on file at both the office and the corporation yard and are contained in this Emergency Plan on Pages 8 through 15.

Raw water and treated water supplies to Diablo Water District can be interrupted due to saline degradation, chemical spills, natural disaster or criminal acts.

For the purpose of developing emergency plans, respective to the length of the water supply outage, the outline for response has been divided into Level I and Level II criteria. Level I and Level II water supply outages shall be as declared by the General Manager, Manager of Water Operations or employee on call, respectively. Employee on call shall contact the General Manager and Manager of Water Operations if a Level I or Level II water supply outage is imminent.

The main objective is to maintain fire flow supply. The calculation to determine a Level I or Level II response is, 1) the time of year [winter/summer]; 2) extent of breakage/repair involved; and 3) available supply/demand.

As a first action, the worst case scenario as to the duration shall be estimated by the District's staff and engineers in consultation with Contra Costa Water District and the appropriate state, county and local offices.

LEVEL I / Short-Term Water Supply Outage - Duration of time of 72 hours or less that water supply may fall short of desired quantity and/or pressure, such that the District's usable storage could be reduced to 33% capacity before the end of approximately 72 hours.

1 - Notify the following agencies of the nature of the outage stressing water conservation:

Radio Station KCBS (740 AM).....	415-765-4000
TV Station KOVR, Sacramento	800/374-8813
TV Station KOVR, Stockton	209/466-6985
East County Times.....	925-757-2525
East County Times (Keith Bennetts, Asst. City Editor) Fax	925-706-2305
East County Times (Keith Bennetts, Asst. City Editor) Phone	925-779-7136

Notify the local fire departments and let them know we are endeavoring to maintain fire flow.

Emergency	911
Dispatch for all Fire Departments (non-emergency – 24 Hours)	925-625-9276

2 - In the event of a raw water outage, request Contra Costa Water District to backflow water from Contra Loma Reservoir.

Antioch Operations Center (CCWD).....925-679-3500
Emergency(24 Hours).....925-688-8374
(the on-call supervisor will be notified)

Pat Panus (R-B Superintendent) (Wk) 625-6601 or 688-8094
(Hm)925-706-2911
(Pager)925-210-5694
(Cell)925-525-2566
(Fax)925-625-4658
John Parsons (R-B Supervisor) (Wk)925-625-6603
(Hm)925-753-1840
(Cell)925-525-2520

3 - Conserve treated water by reducing and maintaining a minimum pressure in system, of 25 psi or per calculation from instrument located at the Corporation Yard (50# approximately). This may require valving off Reservoir No. 2 outflow to reduce loss of reservoir storage.

4 - Should the outage be due to broken water mains, valve off the areas that are affected. See as-built drawings in map file at office listed alphabetically or by subdivision number. To isolate 24" main, refer to Figure 1 on page 17 and Figure 2 on page 18.

In the event of a main break that poses a threat to the railroad call and report immediately to:

Stop Train Emergency Number1-800-285-2164
Burlington Northern /Santa Fe Communications 1-800-333-2383

****Any repairs that involve the 24-inch pipeline or any lines stemming off, within the BNSF Right-A-Way; we must contact the Roadmaster at 323-307-8515 within one hour of determining that we will be entering the right of way to perform emergency repairs. Any planned repairs, we must contact the Roadmaster ten (10) days in advance of the work.**

5 - Operate the District's well and request R-B (925-625-6600) to increase production as needed; if necessary, to maintain maximum levels in reservoirs.

Diablo Water District has begun using Diablo Water District Well No. 1 on emergency basis. Notify State of California Department of Health and begin bacteria testing of this well.

6 - Should interconnection facilities with the City of Antioch be available, supplement the Diablo Water District supply with Antioch supply using the following procedure:

- Advise City of Antioch, Director of Public Works of intentions and time of planned valve opening interconnecting the systems.

Antioch Maintenance Services	925-779-6950
After Hours – Emergency.....	925-778-2441
Ron Bernal, Director of Public Works.....	925-779-6820
Adam Molinar, Superintendent of Water/Wastewater.....	925-779-6952
Duane Anderson, Water Treatment Plant Antioch.....	925-779-7029

- The area to be valved off will be predicated by the volume of water Antioch will be able to supply.

LEVEL II / Long-Term Water Supply Outage - unknown length of time when water supply may fall short of desired quantity and or pressure, such that the District's storage could be reduced to less than 25%.

1 - Take all of the steps described under short-term outage potential. See Pages 3 through 5. Continue to have Reservoir 2 outflow restricted to conserve water.

- 2 - Maintain a minimum of 1,000,000 gallons storage for fire protection if possible.
 - 3 - Call Contra Costa County Office of Emergency Services at 646-4461 or at the 24 hour emergency number 228-5000 and ask for our alert duty officer and apprise him/her of the water supply outage.
 - 4 - Ban use of water for all non-essential uses. This may require going house to house and notifying customers.
 - 5 - Board of Directors adopt regulations on emergency water use.
 - 6 - Send out news bulletins periodically to keep the public updated on the problem.
- Call East County Times at 925-757-2525, or fax to Keith Bennetts, Asst. City Editor, at 925-706-2305.

CHLORINATION PROCEDURE TO BE IMPLEMENTED IN REPAIRING BROKEN WATER MAINS:

- 1 - Trench treatment: liberal quantities of hypochlorite applied to open trench area will lessen the danger of pollution.
- 2 - Main disinfection: scrubbing with hypochlorite solution.
- 3 - Flush main, should water be available, until discolored water is eliminated.
- 4 - Sample for bacteria testing in affected area.

II-WARN OMNIBUS MUTUAL AID AGREEMENT - Diablo Water District is a member of II-WARN (Water Agency Response Network Region II) and has an Omnibus Mutual Aid Agreement with more than fifty water agencies. This agreement provides Diablo Water District the opportunity to call upon water agencies in Region II for additional manpower and/or equipment during an emergency. The agreement with contact names and phone numbers is located at the corporation yard in the main office in a binder and is also located at the administration office in a file. Additionally, an equipment database is on the computer at the corporation yard to help you decide which water agency to call upon for a particular piece of equipment.

Appendix L
Department of Water Resources AB 1420 Self-
Certification Statement

DEPARTMENT OF WATER RESOURCES

1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791



August 14, 2014



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

Dear Mr. Yeraka:

The Department of Water Resources (DWR) has reviewed the Diablo Water District's (DWD) Self-Certification Statement – Table 1 submitted on June 23, 2014, regarding implementation of the Urban Best Management Practices (BMPs).

The purpose of DWR's review is to determine DWD's eligibility to receive water management grant or loan funds. DWR has followed the *AB 1420 Compliance Requirements* dated January 1, 2009. For detailed information, please visit <http://www.water.ca.gov/wateruseefficiency/finance/>.

Based on DWR's review of the information in Table 1, DWD has and is currently implementing the BMPs consistent with AB 1420 and, therefore, is eligible to receive water management grant or loan funds.

DWR reserves the right to request additional information and documentation, including reports from DWD to substantiate the accuracy of the information provided in Table 1. DWR may reverse or modify its eligibility determination and notify you and the funding agency if inaccuracies are found in the supporting documentation or in Table 1.

If you have any questions, please contact me at (916) 651-7034 or Betsy Vail at (916) 651-9667.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Peter Brostrom'.

Peter Brostrom
Urban Water Unit
Water Use and Efficiency Branch

