

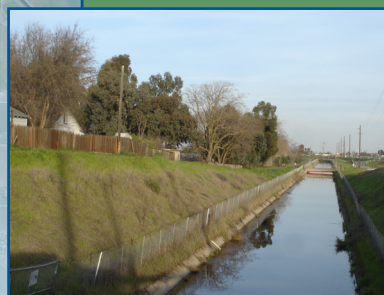


**DIABLO
WATER
DISTRICT**

www.diablowater.org

June 2021

2020 Urban Water Management Plan



**CDM
Smith**

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List of Abbreviations

°F	degrees Fahrenheit
Act	Urban Water Management Planning Act of 1983
ACWD	Alameda County Water Agency
AF	acre-feet
AWWA	American Water Works Association
BARR	Bay Area Regional Reliability
BBID	Byron-Bethany Irrigation District
BMO	basin management objective
BMP	best management practice
Board	Board of Directors
Canal	Contra Costa Canal
CCWD	Contra Costa Water District
CVP	Central Valley Project
CWC	California Water Code
DCP	Delta Conveyance Project
Delta	Sacramento-San Joaquin River Delta
District	Diablo Water District
DMM	demand management measure
DRA	Drought Risk Assessment
DWD	Diablo Water District
DWR	California Department of Water Resources
EBMUD	East Bay Municipal Utility District
ECC	East Contra Costa
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
kWh	kilowatt-hour
ISD	Ironhouse Sanitary District
LSCE	Luhdorff & Scalmanini Consulting Engineers
m	meter
MBR	membrane bioreactor
MG	million gallons
mgd	million gallons per day
MOU	Memorandum of Understanding
msl	mean sea level
ppm	parts per million
Reclamation	U.S. Bureau of Reclamation

SB X7-7	Water Conservation Act of 2009
SGMA	Sustainable Groundwater Management Act
SOI	sphere of influence
SWP	State Water Project
SWRCB	State Water Resources Control Board
UWMP	Urban Water Management Plan
WSCP	Water Shortage Contingency Plan
WTP	Water Treatment Plant
WY	water year

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Section 1

Introduction

This report constitutes the Diablo Water District's (DWD or the District) 2020 Urban Water Management Plan (UWMP). All urban water suppliers within the State of California of a certain size are required to prepare a UWMP every five years. This plan will be 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 10657 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 (approximately 978 million gallons). This plan satisfies the requirements of the Urban Water Management Planning Act of 1983 (the Act) and its subsequent amendments and provides an update to DWD's 2015 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.

Senate Bill (SB) X7-7, the Water Conservation Act of 2009, required 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 using one of four methodologies to calculate per capita water use. Failure to meet adopted targets would result in the ineligibility of a water supplier to receive state grants or loans unless one of two exceptions are met. For the 2020 UWMP, water suppliers are required to demonstrate compliance with the targeted reduction through December 31, 2020 (see Section 3.3).

Since 2015, several amendments have been added to the Act. These amendments are summarized below:

- Develop a stand-alone Water Shortage Contingency Plan requiring every urban water supplier to prepare and adopt a water shortage contingency plan as part of its urban water management plan. (Effective January 1, 2019). (§10632)
- Incorporate regional and local seismic risk assessments or plans to assess the vulnerability of each water system facility and mitigate those vulnerabilities. (§10632.5)
- Develop a five consecutive year Drought Risk Assessment as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. (§10635)

- Include an analysis of utility energy intensity including (§10631.2):
 - An estimate of the amount of energy used to extract or divert water supplies.
 - An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
 - An estimate of the amount of energy used to treat water supplies.
 - An estimate of the amount of energy used to distribute water supplies through its distribution systems.
 - An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
 - An estimate of the amount of energy used to place water into or withdraw from storage.
 - Any other energy-related information the urban water supplier deems appropriate.
- Include consideration of climate in the water supply and demand by accounting for the impacts of climate change in water demand projections. (§10630)

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 2021 that DWD was updating its UWMP. Copies of these notices are included in Appendix C-1. The same agencies were notified in May 2021 that the draft UWMP and Water Shortage Contingency Plan (WSCP) were available for review. Copies of these notices are included in Appendix C-2.

Table 1-1 Coordination with Appropriate Agencies

Coordinating Agencies	Contacted for Assistance	Sent Notice of Preparation	Sent Notice of Draft UWMP Availability
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 Department of Conservation and Development	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
Ironhouse Sanitary District	X	X	X
Knightsen Town Advisory Council		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 (BBID), Contra Costa County Flood Control and Water Conservation District, 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 Sacramento-San Joaquin River Delta (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 was most recently updated in 2019 by various entities serving eastern Contra Costa County. The document can be found on DWD's website at <https://diablowater.org/doc/2019irwmp/>.

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. In 2020, the region was granted a \$2.7 million Proposition 1 Round 1 implementation grant for six projects, including \$500,000 for DWD's Advanced Metering and Leak Detection project.

DWD has also coordinated with East Contra Costa County agencies on groundwater supply management. In response to the Sustainable Groundwater Management Act (SGMA) of 2014, DWD formed a groundwater sustainability agency (GSA) with seven 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 and Water Shortage Contingency Plan (WSCP) were made available for review at the Oakley Public Library, DWD's office, and online at DWD's website, www.diablowater.org. A public hearing was held on May 26, 2021, during a regular meeting of the Board of Directors (Board). The public hearing was noticed in the Oakley Press, a weekly local newspaper in DWD's service area, on May 7 and 14, 2021, and posted at DWD's office, Oakley City Hall, and the Oakley Post Office. Copies of the notices for the public hearing are included in Appendix C-3.

The DWD Board adopted the 2020 UWMP and WSCP at a meeting in June 2021. Copies of the resolutions for UWMP and WSCP adoption are included in Appendix C-4. The Final UWMP and WSCP will be submitted electronically to DWR by July 1, 2021. The Final UWMP and WSCP will be made available to the public during normal business hours and provided to the California State Library, City of Oakley, Bethel Island Municipal Improvement District, Knightsen Town Advisory Council, and Contra Costa County Department of Health Services within 30 days of adoption.

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 situated 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 downtown area of the Town of Knightsen, and portions of Bethel Island.

Ultimately, DWD will provide service within its sphere of influence (SOI), as approved by the District's Board and the Local Agency Formation Commission. The current approved SOI includes the existing service area plus the remainder of the Hotchkiss Tract, small unincorporated areas south of Oakley, and the remainder of Knightsen. The SOI could eventually include all of Bethel Island if residents wish to secure water service from DWD. DWD's SOI and Bethel Island encompass approximately 18,000 acres. Currently DWD serves almost three-quarters of this ultimate area. The remainder is undeveloped or is served by groundwater wells of individual property owners.

DWD's existing treated water distribution system is in the western part of the SOI, where the Oakley community began. Future development is occurring in the eastern part of the service area, and DWD's treated water system is expanding to serve the eastern area as 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.

The eastern part of the service area consists of reclaimed lands surrounded by levees. These areas are generally flat with many man-made drainage ditches and naturally occurring sloughs and wetlands. Bethel Island is also generally flat, reclaimed land surrounded by levees, with ground elevations ranging from 10 feet below to 5 feet above mean sea level.

Most of the soil in DWD's service area is classified as Delhi Sand by the Natural Resources Conservation Service and has a Class III rating suitable for orchard and vineyard production. However, it does not naturally hold sufficient internal moisture for most crops and has a low nutrient level. A variety of Class I and Class II prime agricultural soils lie along Marsh Creek and portions of Hotchkiss Tract.

DWD's currently serves over 42,000 residents in the City of Oakley, the downtown area of the Town of Knightsen, and portions of Bethel Island. Future expansion into the District's Sphere of Influence (unincorporated county lands east and south of Oakley, more of Knightsen, and all of Bethel Island if residents wish to secure water service from DWD) is expected to occur by 2040. DWD may serve a population of approximately 64,000 at ultimate buildout.

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 area.

Table 2-1 Climate Summary

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
Average Precipitation (inches)	2.66	2.35	2.08	0.78	0.43	0.09	0.00	0.02	0.18	0.62	1.60	2.41	13.22
Average Temperature (°F)	46.3	51.2	55.4	59.8	66.3	72.0	75.4	74.3	71.6	64.6	54.5	46.6	61.5
Standard Monthly Average Evapotranspiration	1.16	2.02	3.77	5.46	7.10	7.96	8.25	7.41	5.61	3.79	1.90	1.16	55.59

Note: Sources of climate data include: the Antioch Pump Plant 3 weather station (#040232) data for 1981-2010, and average evapotranspiration data for 1985-2018 for the Brentwood, California station of the California Irrigation Management Information System.

2.3 Demographic Characteristics

Population and housing projections are all tools utilized to project municipal and industrial water demands. DWD currently serves approximately 42,000 residents of the City of Oakley based on DWR's population tool. According to the District's 2020 Facilities Plan, the District's total buildout population is projected to be about 64,000 residents, which includes the current District service area (City of Oakley, some of the Town of Knightsen, and portions of Bethel Island) and future expansion into the District's SOI.

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 (adopted in 2002, most recently amended in 2016) and the Contra Costa County General Plan 2005-2020 adopted in 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. Both Oakley and Contra Costa County are currently updating their general plans. Any changes to land use and buildout projections will be reflecting in the 2025 UWMP.

Table 2-2 presents the estimated 2020 DWD service area population and population projections from 2025 through 2040 (based on linear interpolation). 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 rapid growth since the 1980s.

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

Area	2020	2025	2030	2035	2040
Ultimate Service Area	42,000	48,000	54,000	59,000	64,000

Source: 2020 population data from DWR's population tool; population projections based on City of Oakley General Plan and Contra Costa County General Plan.

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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 2015 and 2020 customer connections and water demand for the DWD service area. The total consumption shown is the sum of metered and non-revenue water demands in million gallons (MG).

Total water supplied in 2020 was 2,105 million gallons (MG).

Single-family residential water use represents the largest portion of demand, about 83% of deliveries in 2020.

In 2020, DWD's non-revenue water (includes losses from system leaks, meter inaccuracies, unmetered uses of water, or other unauthorized uses) was 9.4% of total water supplied.

From 2020 to 2040, DWD's demand is estimated to increase from 2,105 MG to 4,580 MG, based on projected growth in the service area.

By 2040, residential usage will comprise about 75% of the total use, and non-residential usage about 25%.

The California Water Conservation Act of 2009 requires water agencies to reduce per capita water use 20% state-wide by the year 2020. DWD's 2020 target per capita water use is 163 gallons per capita per day (gpcd). DWD's actual per capita use in 2020 was 138 gpcd, well below the target level.

Table 3-1 Water Meters and Deliveries – 2015 and 2020

Water Use Sectors	2015		2020	
	# of Meters	Volume (MG)	# of Meters	Volume (MG)
Single Family Residential	10,740	1,109	12,071	1,521
Multi-Family Residential	20	104	21	53
Commercial/Institutional	152	70	172	69
Industrial	2	<1	0 ¹	<1
Landscape Irrigation	149	115	182	198
Other (e.g., hydrants, construction)	86	33	128	66
Total Meters	11,149	--	12,414	--
Total Consumption	--	1,431	--	1,906
Non-Revenue Water	--	60	--	199
Total Water Demand	--	1,492	--	2,105

Source: Based on DWD records.

Note:

¹ Number of meters are taken as those in service as of December 2020. DWD had one industrial customer that was removed from service prior to December 2020.

Non-revenue water is the difference between total water supply production and billed consumption. All water systems have some level of non-revenue water, typically ranging from 5 to 10 percent of total demand. Sources of non-revenue water in DWD's system may include losses from system leaks, meter inaccuracies, unmetered uses of water, or other unauthorized uses. In 2020, DWD's non-revenue water was 9.4 percent of total water supplied (199 MG), based on DWD's measurements. DWD's 2020 American Water Works Association's (AWWA) Water Audit is still under development and not yet available. Non-revenue water averaged 6.0 percent between 2016 and 2019 (ranging from 2.9 to 8.6 percent), based on the AWWA Water Audits from these years; these values are well within the acceptable range noted above. Table 3-2 shows the water losses from 2015-2019.

Table 3-2 Water Losses, 2016-2019

	2016	2017	2018	2019
Volume of Water loss (MG)	28	126	116	109

Source: 2016-2019 validated AWWA Water Audits.

Table 3-3 presents water demand and connection projections for 2025 through 2040, developed in the DWD 2020 Facilities Plan based on buildout land uses and currently adopted general plans. Over the period from 2020 to 2040, DWD's demand is estimated to increase from 2,105 MG to 4,580 MG, and the number of service connections is estimated to increase from 12,414 to 19,240.

Table 3-3 Water Demand Projections by Water Use Sector, 2025-2040

Water Use Sectors	2025		2030		2035		2040	
	# of Meters	Volume (MG)	# of Meters	Volume (MG)	# of Meters	Volume (MG)	# of Meters	Volume (MG)
Single-Family Residential	13,240	1,744	14,510	2,059	15,790	2,369	17,070	2,679
Multi-Family Residential	190	197	320	320	460	442	600	564
Commercial/Institutional	497	229	740	388	984	546	1,227	705
Industrial	1	26	1	26	1	26	1	26
Landscape Irrigation	130	160	130	169	140	174	150	179
Other (e.g., hydrants, construction)	142	69	159	103	176	128	192	152
Non-Revenue Water	--	155	--	196	--	235	--	275
Total Meters	14,200	--	15,860	--	17,550	--	19,240	--
Total Water Demand	--	2,580	--	3,260	--	3,920	--	4,580

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 2020 to 2040, which assumes a constant growth rate from 2020 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 the 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 other meters, typically used for hydrants and construction connections as the number of meters varies throughout the year and over time.

Buildout water usage was estimated for 2040; linear interpolation was then used to determine the usage at 5-year intervals from 2020 to 2040, which assumes a constant growth rate over the entire planning period. By 2040, residential usage will comprise about 75 percent of the total use and non-residential usage about 25 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.

3.2 Low-Income Water Demand

The requirements for the 2020 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 2020, DWD served 144 single family customers and 9 multi-family properties (with several meters each) as part of this low-income program. Table 3-4 presents those customers' 2020 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 3-4 Current and Projected Water Demands for Low-Income Customers

Type	Water Demand (MG)				
	2020	2025	2030	2035	2040
Single-Family Residential	15	20	25	30	35
Multi-Family Residential	38	52	65	79	92
Total Low-Income Demand	53	72	91	109	127

3.3 Water Conservation Act of 2009 Requirements (SB X7-7)

The California Water Conservation Act of 2009, SB X7-7, required water agencies to reduce per capita water use by 20 percent by the year 2020 (often referred to as "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 2015 UWMP documented compliance with the interim 2015 target and the 2020 UWMP must

demonstrate compliance with the 2020 target. The purpose of this section is to define the water conservation targets and measure how DWD has complied with the targets, to help achieve a goal of reducing per capita water use 20 percent state-wide by 2020.

DWD is part of a regional alliance with CCWD and CCWD's 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 determined 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 published guidelines to determine the baseline gross per capita water demand for water purveyors throughout California. The guidelines allowed 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 compliance in 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 non-revenue 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 was 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 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 3-5¹. 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

¹ In the 2010 UWMP, the 10-year baseline per capita water use was set at 175 gpcd; however, during the 2015 UWMP cycle, DWR allowed water suppliers to revise their baseline use using the updated DWR Population Tool that incorporated the results of the 2010 Census. Using that process, the 2015 UWMP calculated a revised 10-year baseline use of 177 gpcd.

Table 3-4 were provided by DWR's online Population Tool. 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.

Table 3-5 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

Notes:

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 3-6. 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 3-5 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 3-6 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

Notes:

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 no greater than the urban water use target to demonstrate compliance.

DWR provided four 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.

In the 2010 UWMP, DWD selected Method 3 to compute its urban water use target per capita demand. Table 3-7 presents the target setting calculations using Method 3. DWD's baseline per capita demand of 177 gpcd, computed in Table 3-5, must not exceed 163 gpcd by 2020. The interim target for 2015 was 170 gpcd.

Table 3-7 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 3-6)	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 3-5)	177
Interim 2015 Target (mid-point of Baseline Water Use and Required 2020 Target)	170

3.3.1.3 2015 Interim Target Compliance

In 2015, water suppliers were required to 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 was below the 2015 Interim Target of 170 gpcd. Table 3-8 shows DWD's compliance with the 2015 interim target.

Table 3-8 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 Compliance

DWD already achieved the 2020 target of 163 gpcd by 2015. Prolonged drought and mandatory water use restrictions imposed by DWD in 2014 resulted in major reductions in per capita water use. The drought conditions eased beginning in 2018, but since new conservation rules were put into place by the Governor in 2018 (Senate Bill 606 and Assembly Bill 1668), it is anticipated that per capita use regulations will be tightened. As shown in Table 3-9, actual per capita use in 2020 was 138 gpcd, well below DWD's 2020 target.

DWD experienced an increase in per capita demand between 2019 and 2020. This can be explained by two factors. First, in 2020 the DWD service area had the second largest percentage growth in single-family residential unit meters in 10 years due to robust construction. Second, the COVID-19 pandemic led to many residents being home much more than normal, with residential usage increasing accordingly.

Table 3-9 Compliance with 2020 Interim Target

2020 Required Target	2020 Actual Per Capita Use	Adjustments	Actual as Percentage of Target	In Compliance? Y/N
163 gpcd	138 gpcd	N/A	77%	Y

3.3.2 CCWD's Regional Alliance Analysis

As mentioned above, DWD is submitting an individual UWMP and is meeting all SB X7-7 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. CCWD submitted a letter to DWR on June 8, 2011, providing the list of water suppliers forming the regional alliance. The water use for the Regional Alliance was 187 gpcd in 2020, meeting its 2020 target of 210 gpcd.

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 is treated at the Randall-Bold Water Treatment Plant (WTP) in Oakley.

In addition, DWD developed its own groundwater supply system to provide additional supply reliability. The first groundwater well came online in 2006 and the second in 2011. When fully implemented, groundwater may comprise up to 20 percent of DWD's total supply for maximum day demand conditions.

DWD's primary water supply for its distribution system is treated surface water, supplied through the Randall-Bold Water Treatment Plant.

Additionally, DWD owns and operates its own groundwater supply system that may comprise up to 20 percent of DWD's total supply for maximum day demand conditions.

DWD is exploring a future recycled water project in coordination with ISD, as discussed in Section 4.4.1. They began joint meetings in 2021 to determine which projects to move forward for further feasibility and design studies and to plan implementation timelines. The potential recycled water project will be incorporated into the 2025 UWMP update after more project details are developed.

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 Delta, Los Vaqueros Reservoir, or CCWD's other intakes on Old River and Victoria Canal (near Middle River). The Canal and pipeline system are 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.

CCWD is pursuing expanding the reservoir to a total of 275,000 AF to improve Bay Area supply reliability and water quality, while providing additional ecosystem benefits for the Delta. The project will include upgrades to existing conveyance facilities, new conveyance, and reoperation

of existing facilities. CCWD is working through 2021 to finalize project design, permitting, and local agreements. Ongoing work in spring 2021 includes formation of a Joint Powers Authority with local agency partners with the intent to execute funding agreements in fall 2021. Design and construction are expected to occur from 2022 to 2029. The District is not a financial participant in this project and would not receive higher allocations from CCWD as a result of this project.

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. The Randall-Bold WTP was designed for an initial capacity of 40 million gallons per day (mgd) with the capability to expand to 80 mgd. The initial treatment capacity allocated 15 mgd to DWD (37.5 percent) and 25 mgd to CCWD (62.5 percent). In 2010, Randall-Bold WTP capacity increased to 50 mgd, with treatment capacity allocated 15 mgd to DWD (30 percent) and 35 mgd to CCWD (70 percent). 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.

DWD's current capacity of 15 mgd from the Randall-Bold WTP provides an average day supply of 7.5 mgd (2,738 MG). DWD is entitled to increase its share of the capacity from 15 mgd to up to 30 mgd with advance notice to CCWD. In accordance with current agreements, DWD must purchase additional supply in 5 mgd increments. It is currently anticipated that only an additional 5 mgd of capacity may be needed to meet future demands and water quality blending goals for the groundwater system. Increasing its total purchased capacity to 20 mgd will provide an average day supply of 10 mgd (3,650 MG). The specific timing for this additional capacity will depend on the available groundwater supply, rate of District growth, and customer conservation.

Table 4-1 summarizes DWD's current and future water supplies from CCWD.

Table 4-1 Current and Projected CCWD Water Supply

Water Supply Sources	2025 (MG)	2030 (MG)	2035 (MG)	2040 (MG)
Surface Water Purchased from CCWD	2,738	2,738	2,738	3,650

Table 4-2 presents the amount of CCWD water supplied to DWD's system from 2016 through 2020. The amount of surface water supplied has been far less than DWD's current share of capacity from the Randall-Bold WTP, presented in Table 4-1.

Table 4-2 CCWD Supplied Water from 2016 to 2020

Year	2016	2017	2018	2019	2020
CCWD Supplied Water (MG)	1,344	1,454	1,563	1,488	1,855

4.2.1 Reduced Delta Reliance

DWD has consistently used less than its allocated capacity from the Randall-Bold WTP. The District began implementing its Well Utilization Project in 2006 to provide additional supply reliability and local control. DWD will continue to support and analyze options for alternative

water supplies to offset surface water use and groundwater pumping, including the ongoing recycled water planning efforts (see Section 4.4).

The CCWD 2020 UWMP provides more information on how it as the wholesale agency is reducing its reliance on the Delta for the entire region. CCWD's Los Vaqueros Reservoir Expansion Project (Phase 2 Expansion) project is considered a “covered action” under the Delta Plan, for which a certification of consistency with the Delta Plan is required. CCWD prepared an analysis of its reduced Delta reliance at a regional level in its 2020 UWMP.

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 SGMA.

4.3.1 Groundwater Basin Overview

DWD and its wells overlie the northern portion of the East Contra Costa (ECC) Subbasin, part of the San Joaquin Valley Groundwater Basin. The ECC Subbasin was defined in 2016, splitting from the Tracy Subbasin. The draft East Contra Costa Subbasin Groundwater Sustainability Plan² (GSP) provides the following description of the subbasin:

- “The San Joaquin Valley formed between two mountain ranges (Coast Ranges and the Sierras). The ECC Subbasin lies on the western side of the northern San Joaquin Valley portion of the Great Valley province of California. The western boundary of the Subbasin is a no flow boundary with respect to groundwater and is delineated by exposed bedrock of highly deformed Tertiary age and older marine sediments of the Coast Range Diablo Mountains. Most of the Subbasin is filled with freshwater-bearing alluvium, eroded continental sediments from the Coast Ranges, that are Quaternary in age....
- The topography of the Subbasin is generally flat with land surface elevations that slope gently downward to the east. Topographic elevations vary from about 200 feet above mean sea level (msl) in the west to less than 10 feet from msl in the delta area over a distance of about 10 miles. There are portions of the Subbasin (e.g., Delta islands) in the northeast and southeast that are below sea level.”

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 on the District's [website](https://static1.squarespace.com/static/5ca391a8a87b100001fc6975/t/5f931f2f087337334cb4e1c7/1603477333187/Draft+Section+3+ECC+GSP+20201007+without+attachments+redx3+%282%29.pdf). The purpose of the Groundwater Management Plan is to provide a management framework for maintaining a high quality, reliable,

² ECC GSA Working Group. 2020. *Groundwater Sustainability Plan, East Contra Costa Subbasin, Draft Section 3*. Prepared by Luhdorff & Scalmanini. October 2020. Available online at <https://static1.squarespace.com/static/5ca391a8a87b100001fc6975/t/5f931f2f087337334cb4e1c7/1603477333187/Draft+Section+3+ECC+GSP+20201007+without+attachments+redx3+%282%29.pdf>.

and sustainable supply of groundwater within DWD's SOI. The 2007 Groundwater Management Plan is still DWD's current guidance document.

DWD manages 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 subbasin not exceed the sustainable yield of the subbasin 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 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 SOI. 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 several 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 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 the District's 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 a DWD-declared drought when the Board may allow a temporary increase in the target hardness.

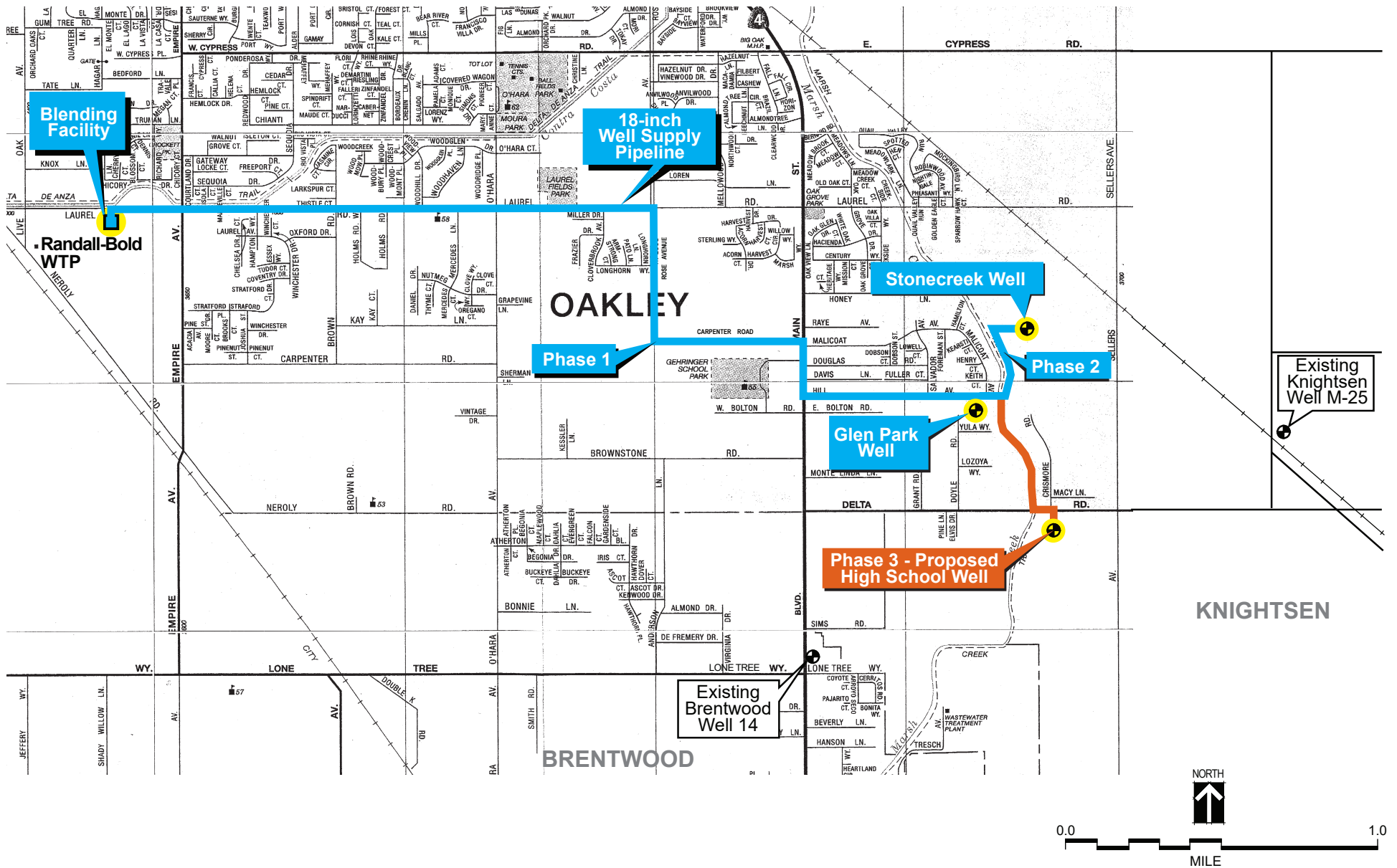
Figure 4-1 presents the facilities of DWD's Well Utilization Project. The first phase of the groundwater supply system included:

- a 310-foot deep well and pump station located at 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 Glen Park Well and the Blending Facility.

The pipeline is sized for the anticipated ultimate groundwater use of 7 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 mgd.

In the second phase of the Well Utilization Project, the Stonecreek Well was put 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. It has a pumping capacity of approximately 2.0 mgd and a yield like that of the Glen Park Well of 336 MG per year. Production from the Stonecreek Well has been limited for several years due to elevated manganese and total dissolved solids levels. DWD is planning to install a wellhead treatment system by 2023 to improve water quality and allow for greater production.

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



DWD is planning to install additional groundwater production wells in future phases, based on the rate of District growth and demand. These wells may also be in the eastern part of DWD's SOI, with specific locations to 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. It is currently anticipated that two additional 1.5 mgd wells will be developed. Future wells are assumed to have the same ratio of pumping capacity to annual yield as the Glen Park Well. DWD's decision to install additional wells will also consider the findings of the East Contra Costa GSP that is currently being developed (see Section 4.3.5). The hydraulic model being prepared as part of the GSP could help determine the viability of these new wells.

Based on available information, it is possible that up to 5.5 mgd of ultimate pumping capacity can be achieved from the local groundwater basin, which would be about 20 percent of the District's total maximum day supply need. However, the long-term ability of the groundwater basin to provide these quantities is uncertain. 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.

Table 4-3 presents the amount of groundwater supplied by DWD's two wells from 2016 through 2020. 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 local groundwater levels, especially near the wells, and no issues have arisen. The District is committed to investing in well infrastructure improvements over the next few years to test reliability for times of critical necessity.

Table 4-3 Groundwater Use from 2016 to 2020

Year	2016	2017	2018	2019	2020
Groundwater Supply (MG)	182	267	293	301	250

4.3.4 Local Groundwater Basin Characteristics

DWD's existing and future wells are 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 investigated 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 2 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

In response to SGMA, DWD serves as a GSA to assess the conditions in the local subbasin and adopt a locally-based sustainability management plan. A GSA can require registration of groundwater wells, measure and manage groundwater extraction, require reports from groundwater users, and assess fees to support the creation of a GSP.

The San Joaquin Valley-East Contra Costa Subbasin (5-022.19) has been designated by DWR as a medium-priority basin. 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.

Eight local agencies that overlay the subbasin entered into a Memorandum of Understanding (MOU) on May 9, 2017 to collaborate and develop a single GSP for the subbasin. Except for CCWD, each member agency has become a GSA to be the local agency to manage the subbasin within their respective service area. In addition to DWD, the member agencies of the East Contra Costa Subbasin MOU include the cities of Antioch and Brentwood, BBID, Contra Costa County, CCWD, Town of Discovery Bay, and ECCID. The East Contra Costa GSAs are currently developing the GSP and periodically releasing draft chapters for public input on their website, <https://www.eccc-irwm.org/sgma-documents-reports>. Currently, draft chapters for the Introduction, Plan Area, Basin Setting, Historical, Current, and Projected Water Supply, and Monitoring Network and Data Management System are available. Included in these draft sections are:

- Hydrogeologic conceptual modeling, describing the physical conditions of the Subbasin,
- Groundwater conditions including both current and historical conditions,
- Land uses and population trends in the Subbasin,
- Water supplies and utilization by sector, and
- Description of the monitoring networks, monitoring protocols, data management system, and data reporting requirements for the ECC Subbasin GSP.

As a related effort to be a responsible steward of the environment, the District passed Regulation No. 10, Groundwater Sustainability and Protection, in 2021. This regulation aims to balance and protect the interest of those who rely on a sustainable groundwater aquifer by requiring new residential developments and non-residential extraction wells to install groundwater monitoring wells, connect to a recycled water system (if developed), provide the District access to groundwater elevation data, and perform regular water quality testing.

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. DWD will continue to investigate water supply portfolio diversification projects through potential partnerships with other public agencies.

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 DWD's service area along with Jersey Island and part of Holland Tract.

ISD's Water Recycling Facility, completed in 2011, produces tertiary-treated recycled water using membrane bioreactor (MBR) basins and ultraviolet disinfection. 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 4-4 presents 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 as well as the Oakley area. The average daily flow in 2020 was 2.5 mgd.

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

	2020		Projected			
	Projected in 2015 UWMP	Actual	2025	2030	2035	2040
Average Daily Flows (mgd)	4.0	2.5	2.60	2.75	2.90	3.05

Source: 2020 data from ISD; projections from Draft *Recycled Water Feasibility Study*, ISD and DWD, December 2020.

Currently, recycled water is either stored on-site in an 80 MG holding pond for distribution through fill stations, recycled by land application 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 Water Recycling Facility. The facility has an average dry weather flow capacity of 4.3 mgd and a maximum wet weather flow capacity of 8.6 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 applied to agricultural land that ISD owns on nearby Jersey Island. In June 2015, ISD opened two Residential Recycled Water Fill Stations. The Fill Stations allow 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, and information regarding recycled water. The recycled water at the Fill Stations is intended to be used for watering trees, gardens, vegetables, lawn irrigation, washing cars, cleaning outdoor furniture, and washing hard surfaces. 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 recycled by ISD, DWD currently provides no existing recycled water service. DWD does encourage the use of recycled water to offset or reduce groundwater pumping and surface water use. New turf landscape areas could be supplied by recycled water if such a system is determined to be economically feasible by ISD.

In 2020, DWD and ISD cosponsored a Recycled Water Feasibility Study to explore the potential for expansion of recycled water use within the ISD and DWD service areas. This study evaluated long-term sustainability and desire for the best use of recycled water, drought resiliency, and compliance with future regulations. Among the alternatives evaluated were non-potable reuse, indirect possible reuse, and direct potable reuse options. The study recommended indirect potable reuse through aquifer recharge, citing the benefits of drought resiliency, improved groundwater quality, and leveraging existing groundwater well equipment. It is possible there could be up to 2 mgd of recycled water developed in the area by 2030 for non-potable or potable reuse. This issue is under continued study by DWD and 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 (e.g., East Cypress Corridor projects).

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 purchases and a short-term conservation program.

CCWD's location in the 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 in normal years and includes provisions for an additional 1,120 MG 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 partner or irrigation district holding surface water rights and access to groundwater supplies. CCWD could co-invest in conjunctive use facilities, such as new groundwater wells

to 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 during a dry year, the agricultural district could fallow land or shift crops to make water supplies available. This additional supply during normal or wet years could be banked through groundwater storage or remarketed.

4.4.2.3 Short-Term Water Transfers

CCWD has experience in implementing short-term water transfers. For example, CCWD purchased approximately 952 MG from Western Water in 2000 and 1,400 MG from Yuba County Water Agency in 2003 and 2004. CCWD also purchased 560 MG of transfer water from Woodbridge Irrigation District in 2013. This supply was conveyed through the CCWD-East Bay Municipal Utility District (EBMUD) intertie 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 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. Up to 11,200 MG of spot market supplies have historically been available from supplies located north of the Delta each year. If required, CCWD could pursue additional short-term water transfers directly with these agencies.

CCWD has recently been implementing pilot projects to demonstrate feasibility of providing drought water supply reliability to Bay Area partner agencies in a cost-effective manner: 1,400 MG to Alameda County Water District (ACWD) in 2014 and 720 MG to BBID in 2014-2015. CCWD will potentially exchange up to 1,400 MG of its 2021 CVP allocation with Valley Water, and 1,960 MG with Del Puerto Water District, Panoche Water District, and Westlands Water District for future CVP allocations from those agencies.

4.4.3 Bay Area Regional Reliability or Shared Water Access Program

CCWD, in partnership with seven other major Bay Area water agencies (ACWD, Bay Area Water Supply and Conservation Agency, EBMUD, Marin Municipal Water District, San Francisco Public Utilities Commission, Valley Water, and Zone 7 Water Agency), are participating in the Bay Area Regional Reliability (BARR) partnership to evaluate ways to improve the region's water supply reliability, especially during droughts and emergencies. By coordinating regional efforts, the BARR partnership can leverage existing infrastructure investments, facilitate transfer of water during shortages, bolster emergency preparedness, and improve climate change resiliency. BARR agencies are collaborating on the Shared Water Access Program as a guide for sharing resources. As part of the BARR Shared Water Access Program, CCWD is providing up to 1,400 MG of CVP allocation in 2021 to Valley Water in exchange for Valley Water returning the same amount to CCWD in the future. This exchange identifies institutional and regulatory considerations relevant to future transfers or exchanges between BARR partners.

4.4.4 Non-Potable Water

DWD no longer uses its existing well at the Rose Avenue Corporation yard under normal or emergency conditions due to poor water quality. 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 20 years.

4.4.5 Stormwater

Stormwater is managed by the City of Oakley. Oakley requires that stormwater runoff in parking areas be reduced or detained by using vegetated swales and recommends the use of porous pavement, where possible. The City also encourages incorporating bioswales into landscaping of commercial and industrial properties to allow for removal of surface contaminants and reduce runoff.

Section 5

Water Supply Reliability and Drought Risk Assessment

This section of the UWMP describes the reliability of each of DWD's water supplies, compares planned water supplies with projected water demand between 2025 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.

5.1 Water Supply Reliability by Source

Figure 5-1 shows the inches of annual runoff in the state of California from Water Year (WY) 1901 through WY2020 from the United States Geological Survey. During that timeframe, annual runoff has varied from a low of 1.7 inches to a high of 22.4 inches, with an average of 9.3 inches. Over this historical period there have also been several instances of multiple year droughts that have stressed California water agencies. The reliability of DWD's supplies depends on the variable hydrology. To best evaluate the historical reliability of supplies and forecast their availability in the future it is important to review how supplies were used during past periods considered normal or average, single year droughts, and multiple year droughts to forecast. The following sections summarize this information.

DWD has projected the availability of each of its supplies under different hydrologic year types and compared those to its projected future water demands. DWD's investments will result in a total water supply that meets its demands from 2025 to 2040 under normal and dry conditions.

The WSCP, included as Appendix G, describes how DWD will respond when faced with water shortage conditions resulting from a drought, regulatory action, emergency, or other type of event. The WSCP also includes defined actions the District will take to reduce demand over six shortage levels, from 10% to more than 50% demand reductions.

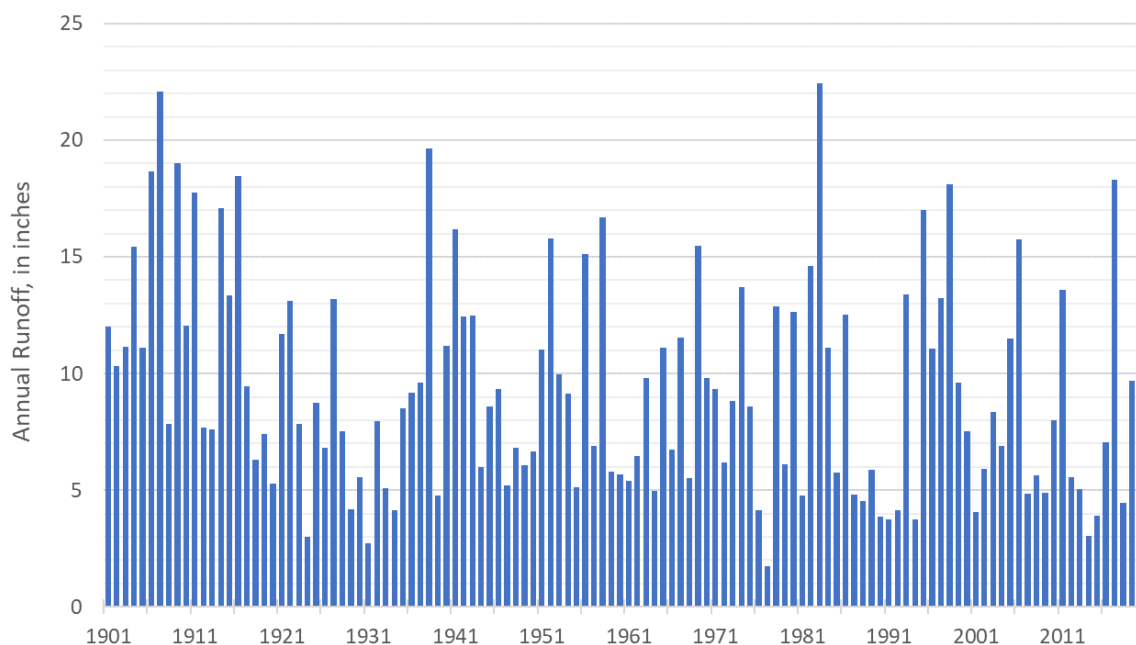


Figure 5-1
Annual (WY) California Runoff in Inches

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 January 21, 2021 letter included in Appendix D. CCWD's supply planning includes all its supply sources, including surface water from the CVP. CCWD modeled the following supply reliability conditions:

- Normal (average) year: average of wet, above normal, and below normal conditions over 1922 through 2020;
- Single-year drought: average of dry and critically dry conditions over 1922 through 2020; and
- Five-year drought sequence: sequence of dry years from 1929 through 1933.

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, to meet their supply reliability goals shown in Figure 5-2. 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.

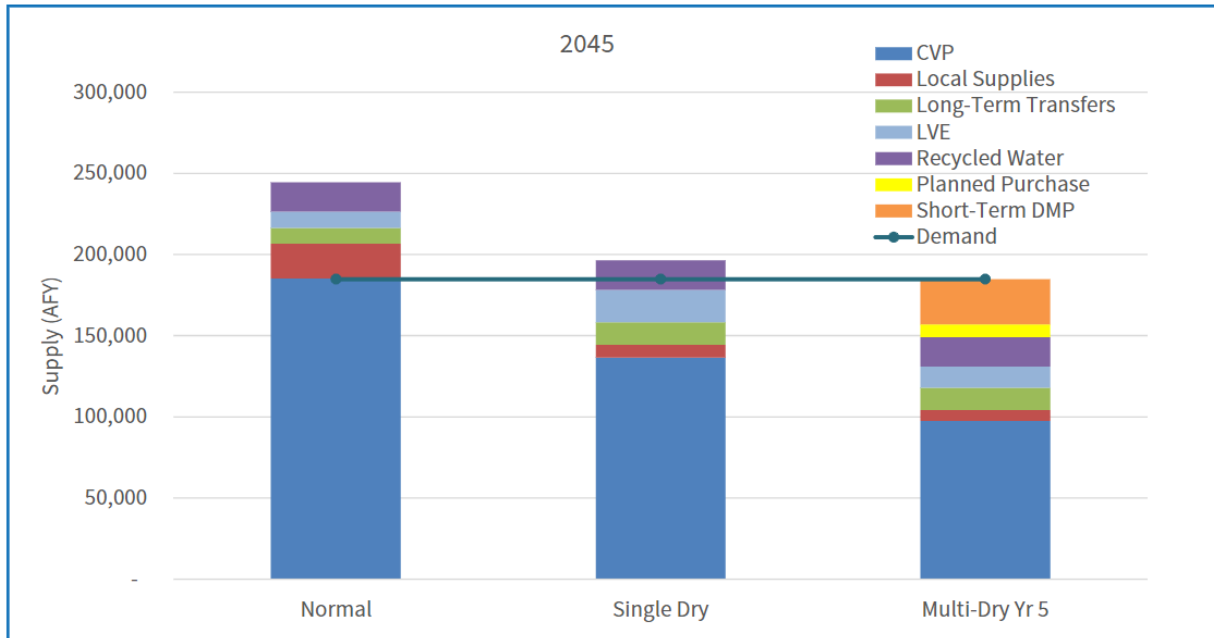


Figure 5-2
CCWD Projected Supplies in 2045 under Various Hydrologic Conditions

CCWD expects to meet 100 percent of demands through 2045 under all supply conditions except the third, fourth, and fifth years of a drought. Additional actions will be needed to meet demands during multi-year drought starting in 2025. These actions include short-term water purchases by CCWD, in conjunction with a request for a 5 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 five-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	Year 4	Year 5
2025	100%	100%	100%	100%	95%	90%	85%
2030	100%	100%	100%	100%	95%	90%	85%
2035	100%	100%	100%	100%	95%	90%	85%
2040	100%	100%	100%	100%	90%	85%	85%

Source: Appendix D, 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 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 (1.5 mgd in 2025 and 1.5 mgd in 2030) 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. During 2014, which based on Figure 5-1 was one of the driest periods on record, DWD utilized the second highest amount of groundwater supply of any year since it has been operating two groundwater wells. There were no recorded impacts on neighboring wells or long-term drawdown impacts. DWD is also using far below its 4 mgd capacity. If future investigations indicate that it will not be possible to provide the anticipated amount of groundwater supply, DWD will either procure additional surface water supply from CCWD and/or investigate other local supply sources.

There are some water quality issues that currently restrict DWD's full use of its groundwater capacity. As discussed in Section 4.3.3, DWD currently limits its groundwater production to keep blended water quality at a target hardness level under normal conditions. The District will be implementing a wellhead treatment system at Stonecreek Well by 2023 to improve water quality, which is currently limiting full production from the well.

In addition, the District is exploring removing the hardness limit during normal operations to allow for additional operational flexibility and increased groundwater production. As mentioned in Section 4.3.3, in times of declared drought the DWD Board may also elect to increase the blended water target hardness to make full use of its groundwater capacity. If the District makes either operational change, it will need to monitor for hardness impacts to the system and its customers.

These factors are incorporated into the projected groundwater reliability presented in Table 5-2.

Table 5-2 Summary of DWD Groundwater Supply Reliability

Year	Normal Water Year (MG)	Single Dry Year (MG)	Multiple Dry Years (MG)
2025	1,000	1,000	1,460
2030	1,373	2,008	2,008
2035	1,745	2,555	2,555
2040	1,745	2,555	2,555

5.2 Water Reliability by Categorical Year Type

The water supply reliability assessments shown in Table 5-3 through Table 5-5 present 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 Table 5-3 through Table 5-5, DWD has adequate supply sources to meet future needs under all conditions.

As presented in these tables, DWD's demand projections are assumed to remain consistent across the three hydrologic scenarios. However, it is anticipated that due to state-wide conservation messaging during a multi-year drought, local demands will likely drop regardless of available water supply.

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

Supply / Demand (MG)	2025	2030	2035	2040
CCWD ¹	2,738	2,738	2,738	3,650
DWD Groundwater ²	1,000	1,373	1,745	1,745
Total Supply	3,738	4,111	4,483	5,395
Total Demand	2,580	3,260	3,920	4,580
Surplus/(Deficit) ³	1,158	851	563	815
Surplus/(Deficit) as % of Supply	31%	21%	13%	15%
Surplus/(Deficit) as % of Demand	45%	26%	14%	18%

Notes:

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 5-2.

³ Total supply minus total demand.

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

Supply / Demand (MG)	2025	2030	2035	2040
CCWD ¹	2,738	2,738	2,738	3,650
DWD Groundwater ²	1,000	2,008	2,555	2,555
Total Supply	3,738	4,746	5,293	6,205
Total Demand	2,580	3,260	3,920	4,580
Surplus/(Deficit) ³	1,158	1,486	1,373	1,625
Surplus/(Deficit) as % of Supply	31%	31%	26%	26%
Surplus/(Deficit) as % of Demand	45%	46%	35%	35%

Notes:

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 5-2. Hardness water quality targets that limit groundwater use during normal conditions may be suspended by the DWD Board if DWD declares a drought. Groundwater volumes presented here also assume installation of wellhead treatment at the Stonecreek Well to allow for full well production.

³ Total supply minus total demand.

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

Year	Supply / Demand (MG)	2025	2030	2035	2040
First Year of Drought	CCWD ¹	2,738	2,738	2,738	3,650
	DWD Groundwater ²	1,460	2,008	2,555	2,555
	Total Supply	4,198	4,746	5,293	6,205
	Total Demand	2,580	3,260	3,920	4,580
	Surplus/(Deficit) ³	1,618	1,486	1,373	1,625
	Surplus/(Deficit) as % of Supply	39%	31%	26%	26%
	Surplus/(Deficit) as % of Demand	63%	46%	35%	35%
Second Year of Drought	CCWD ¹	2,738	2,738	2,738	3,650
	DWD Groundwater ²	1,460	2,008	2,555	2,555
	Total Supply	4,198	4,746	5,293	6,205
	Total Demand	2,580	3,260	3,920	4,580
	Surplus/(Deficit) ³	1,618	1,486	1,373	1,625
	Surplus/(Deficit) as % of Supply	39%	31%	26%	26%
	Surplus/(Deficit) as % of Demand	63%	46%	35%	35%
Third Year of Drought	CCWD ¹	2,601	2,601	2,601	3,285
	DWD Groundwater ²	1,460	2,008	2,555	2,555
	Total Supply	4,061	4,609	5,156	5,840
	Total Demand	2,580	3,260	3,920	4,580
	Surplus/(Deficit) ³	1,481	1,349	1,236	1,260
	Surplus/(Deficit) as % of Supply	36%	29%	24%	22%
	Surplus/(Deficit) as % of Demand	57%	41%	32%	28%
Fourth Year of Drought	CCWD ¹	2,464	2,464	2,464	3,103
	DWD Groundwater ²	1,460	2,008	2,555	2,555
	Total Supply	3,924	4,472	5,019	5,658
	Total Demand	2,580	3,260	3,920	4,580
	Surplus/(Deficit) ³	1,344	1,212	1,099	1,078
	Surplus/(Deficit) as % of Supply	34%	27%	22%	19%
	Surplus/(Deficit) as % of Demand	52%	37%	28%	24%
Fifth Year of Drought	CCWD ¹	2,327	2,327	2,327	3,103
	DWD Groundwater ²	1,460	2,008	2,555	2,555
	Total Supply	3,787	4,335	4,882	5,658
	Total Demand	2,580	3,260	3,920	4,580
	Surplus/(Deficit) ³	1,207	1,075	962	1,078
	Surplus/(Deficit) as % of Supply	32%	25%	20%	19%
	Surplus/(Deficit) as % of Demand	47%	33%	25%	24%

Notes:

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 5-2. Hardness water quality targets that limit groundwater use during normal conditions may be suspended by the DWD Board if DWD declares a drought. Groundwater volumes presented here also assume installation of wellhead treatment at the Stonecreek Well to allow for full well production.³ 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;
- Potential impacts of seismic-related disruptions;
- 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.

5.3.1 Water Quality

DWD tests the water quality of its supplies daily, weekly, monthly, and annually. Once a year, DWD issues its Annual Water Quality Report and reports water testing results. The latest report from 2019 is available at <https://diablowater.org/doc/2237/>.

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, saltwater 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 is currently proposed. The expansion project also involves upgrading existing conveyance facilities, constructing new conveyance, and re-operating existing facilities to support the expansion. Construction is planned to begin in 2022 and operation would begin in 2029.

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 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. The project has completed four out of five 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 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 1 to 2 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. Since DWD relies on both local and imported water sources, it is necessary to consider the potential impacts climate change could have locally as well as on 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 snowpack. 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 5-3 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.

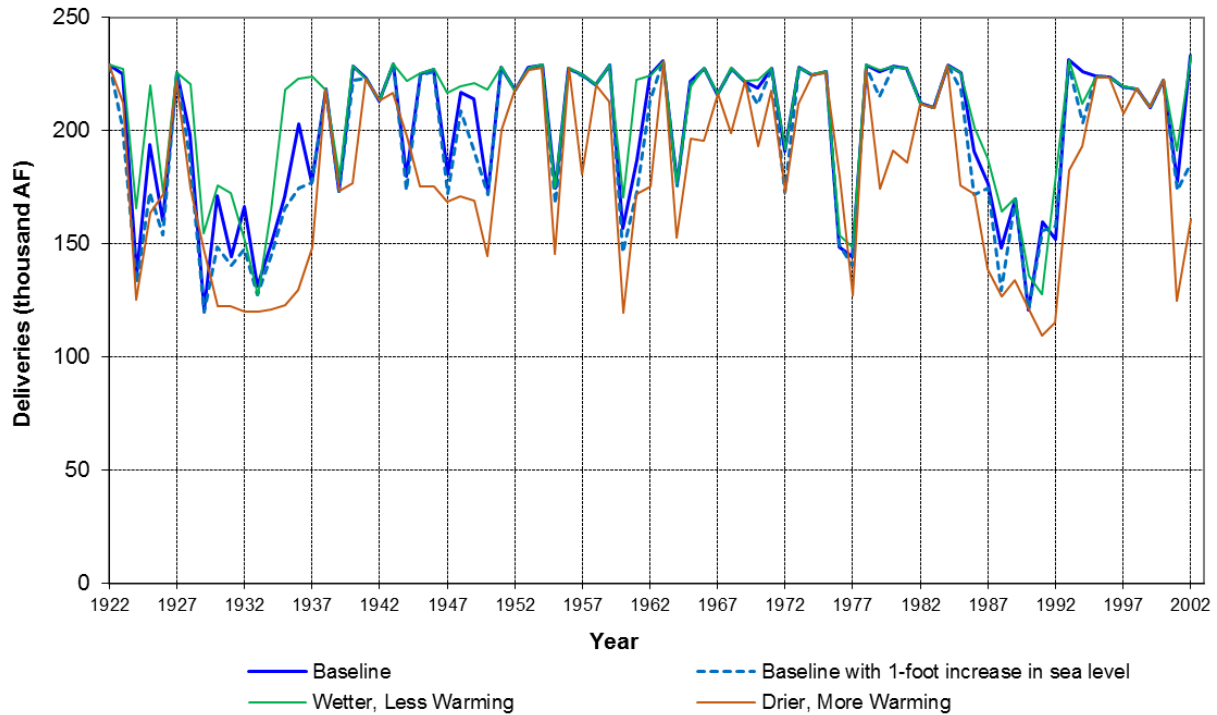


Figure 5-3
Climate Change Impacts to CVP Deliveries to North of Delta Municipal and Industrial Water Contractors

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.

The climate change-related impact of sea level rise is a concern to water quality because it can introduce salinity into freshwater supplies. Permanent and temporary seawater inundation has the potential to impact many people and assets. A changing climate will likely create challenges for the management of water quality in the region. With a less dependable surface water supply in the future, DWD will need to rely more on their groundwater supply and wells. Current monitoring of the transition zone is west of Oakley, in the City of Pittsburgh. By 2100, it is not expected for this transition zone to reach Oakley and affect the water quality of the groundwater wells, but constant monitoring will still be required. Monitoring would inform the threat level to groundwater and the need for construction of new monitoring wells. DWD can assess the need for new wells, or any wellhead protection, should the transition zone move.

5.3.3 Seismic Events and Other Catastrophic Disruptions

DWD lies in a seismically active zone between the Pacific and North American tectonic plates. Earthquakes in the San Francisco Bay area (including DWD service area) are typically from strain energy accumulating in the region from movement of the Pacific and North American tectonic plates. Additionally, there are several local faults near the DWD service area with potential for ground shaking, especially Hayward, Calaveras North, Concord-Green Valley, Mount Diablo, and

Greenville faults. The impacts of a seismic disruption are amplified due to the entire system being in an area with soils that have medium to high liquefaction potential. In a major earthquake event, the underlying soils supporting the DWD's above ground facilities and buried pipelines could shift both horizontally and vertically, causing failures at locations that experience stresses that exceed their strength. That can result in upheaval or settlement of structures, cracks or fractures in rigid support systems, separation at pipe joints, deflection at pipe joints, failures of anchors and attachments, etc.

DWD's design standards provide appurtenances and material selection that allows for some settlement potential. If properly designed for movement, the structures and pipelines can absorb the induced stresses without damage. However, in liquefying soils (where the groundwater table is high and the soil is saturated), the stresses are greatly magnified as the soil temporarily loses supporting consolidated strength effectively transforming to a liquid-like state.

DWD's pipeline designs follows the draft 2005 Seismic Guidelines for Water Pipelines drafted by the American Lifelines Alliance in a public-private partnership with the Federal Emergency Management Agency and American Society of Civil Engineers. It was not updated due to lack of funding, but still represents a cost-effective approach to designing pipelines in highly susceptible areas for seismic and liquefaction events. Since the draft was published, new pipeline products are now offered that are designed the pipe joints to allow for significant movement in multiple locations.

In addition to seismic events, other catastrophic events that could impact DWD's buried assets include sea level rise and levee failures. The National Oceanic and Atmospheric Administration modeling projects a 1.4-meter (m) sea level rise above 1990 levels by 2100 with intermediate greenhouse gas emissions. A 100-year rainstorm event combined with a 1.4 m sea level rise scenario present the greatest risk to levees in the Delta. Under these conditions most of the Delta islands would experience levee failure and inundation, causing major property damage and water quality issues throughout the Delta.

Pipes located in saturated soil due to sea water inundation are at a higher risk of corrosion than pipes in dry soil. Any portion of pipeline in a transition zone where the surrounding condition differs from other portions along the pipeline have high corrosion potential to metallic pipe. Since this is a slowly-emerging threat, DWD's system is not equipped to address the threat. However, DWD can monitor for sea-level rise and consider protective measures during water system planning updates and work with other agencies and groups that are attempting to establish a long-term policy or approach to addressing the threat before the impacts are felt widely.

5.3.4 Environmental Issues

In addition to climate change, the reliability of the CVP supply is reduced because of pumping restrictions to protect fish species listed as threatened and endangered under the federal or state Endangered Species Acts in the Delta. Restrictions on Delta pumping were required by the biological opinions issued by the United States Fish and Wildlife Service and National Marine Fisheries Service in October 2019.

Water management in the Delta has seen conflict for decades, attempting to balance both water supply and ecosystem goals. DWR is proposing the Delta Conveyance Project (DCP) as its

preferred alternative for a conveyance facility to upgrade the water delivery infrastructure through the Delta, consisting of one tunnel and two new intakes that are planned to increase water supply reliability. However, there are concerns that construction of the DCP 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 (the earlier concept for a through-Delta tunnel project) diversion points due to these concerns and warned of potential legal challenges to other aspects or approvals of the project. 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 DCP's construction would not adversely impact CCWD's in-Delta intake facilities and operations.

5.3.5 Reliability under Non-Drought Conditions

DWD has consistent 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 first Los Vaqueros Reservoir expansion, the reliability of DWD's supply from CCWD 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 40 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 always use water wisely, as outlined in DWD Regulation No. 8, Water-Use Efficiency, included as Appendix E. To respond to the 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 wasteful 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 (then contained within the 2010 UWMP) to incorporate these water reduction requirements. 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 2016 update of Regulation No. 9, Drought Emergency Regulation, is included as Appendix F. During that drought, the Drought Emergency Regulation served as an effective tool in reducing water use. DWD will continue to review its emergency water regulations considering SWRCB actions and will address any deficiencies as information becomes available.

While DWD's Regulation No. 9 specified the mandatory reductions in water usage, prohibited uses of water, waiver process, and penalties that applied to the 2015-2016 drought, those restrictions represent only the requirements that are applicable to that drought condition. DWD will determine what is appropriate to implement within its service area to meet any future emergency restrictions.

DWD's Water Shortage Contingency Plan (WSCP), a stand-alone document attached as Appendix G, outlines the decision-making process DWD will use each year to determine its water supply reliability. Coordination with CCWD is crucial to DWD's decision, and the WSCP describes how the annual CCWD allocation factors into the total DWD water supply calculation and ultimate shortage level.

In accordance with Senate Bill 606, the WSCP outlines six standard water supply shortage levels and corresponding shortage response actions as reflected in Table 5-6.

Table 5-6 WSCP Water Shortage Levels

Water Shortage Levels	Percent Shortage Range
Level 1: Minor Shortage	Up to 10%
Level 2: Moderate Shortage	Up to 20%
Level 3: Significant Shortage	Up to 30%
Level 4: Severe Shortage	Up to 40%
Level 5: Critical Shortage	Up to 50%
Level 6: Extreme Shortage	Greater than 50%

To determine the appropriate shortage level, DWD will assess water supply conditions per the procedures outlined in the WSCP, Section 2 - Water Supply and Demand Assessment. For example, if the Annual Assessment determines a water supply shortage of 18 percent, DWD would be in Water Shortage Level 2. Once the condition is set, demand reduction measures go into effect with the goal of reducing demands by the target set by the shortage level.

A detailed list of shortage response actions is included in the WSCP. DWD's shortage response actions include a mix of prohibitions on end use, consumption reduction methods, supply augmentation, and operational change measures. DWR defines prohibitions on end uses as measures to address areas that are the responsibility of users, such as a broken sprinkler or leaking faucet. Consumption reduction methods are actions invoked by a water supplier to reduce consumption, such as expanding public information campaigns and offering water use surveys. Supply augmentation is defined as any action designed to increase the existing supply availability, such as the use of emergency storage or acquiring additional transfer water. Operational changes are defined as actions taken by DWD to change the way in which existing supplies are used within its service area. If DWD's supply is reduced by 10 to 40 percent, DWD's Board 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 regard to essential domestic uses, sanitation, and fire protection. Under higher shortage conditions, the Board may adopt limitations on consumption by rationing customer water use and imposing extra charges and other penalties for exceeding allotments.

The WSCP lists re-evaluation and improvement procedures DWD will use to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed. The WSCP will be re-evaluated at least every five years in coordination with the UWMP update or at the discretion of the Board.

In addition to drought planning, the WSCP describes how DWD is planning for a catastrophic supply interruption, including a large seismic event at the regional and local scale. Imported water providers CCWD, as well as DWD, have developed plans for catastrophic supply interruptions that include a regional power outage, earthquake, or other disaster. DWD additionally maintains an emergency connection with the City of Antioch to provide mutual aid during times of catastrophic supply interruptions. Catastrophic supply interruption events are

considered when determining DWD's overall water supply shortage as defined by the water shortage levels.

The WSCP is included in Appendix G as a separate document. The WSCP must be separately adopted by the Board and could be updated more frequently than the five-year recurrence of the UWMP as the efficacy of shortage mitigation strategies are re-evaluated.

5.5 Drought Risk Assessment

This section summarizes the development of a drought risk assessment (DRA) including a summary of the anticipated DWD water demands and supplies over a 5-year drought assumed to start in 2021.

Near-term drought reliability of the sources of supply utilized by DWD depends on the drought impact and stress on each supply as described in Section 5.1. The assumed drought availability for each of DWD's supplies is summarized below.

- **Surface Supply from CCWD:** In a prolonged drought, rainfall and runoff into local reservoirs would be reduced, so that supply sourced from local reservoirs would decrease over the course of a five-year drought. The availability of supply from CCWD is assumed to follow the guidance in Table 5-1.
- **Groundwater:** In the first two years of a multi-year drought, DWD would increase groundwater production over normal year conditions with its hardness limitation still in place. In the subsequent years, with the wellhead treatment installed, if DWD declares a drought the Board may suspend the hardness operational restriction and make its full groundwater capacity available to serve critical water needs.

The water demand and supply summary using the assumptions outline in Section 5.1 is presented in Table 5-7 over the 5-year drought from 2021 to 2025. The demands used in this analysis were assumed to linearly increase starting from the 2020 gross water use (2,105 MG) in 2021 to the year 5 demand in 2025 from Table 3-3 (2,580 MG). The DRA shows no anticipated shortages over a 5-year drought starting in 2021.

Table 5-7 5-year Drought Risk Assessment Summary

Supply / Demand (MG)	2021	2022	2023	2024	2025
CCWD ¹	2,464	2,464	2,341	2,218	2,095
DWD Groundwater ²	650	650	1,460	1,460	1,460
Total Supply	3,114	3,114	3,801	3,678	3,555
Total Demand	2,200	2,295	2,390	2,485	2,580
Surplus/(Deficit) ³	914	819	1,411	1,193	975
Surplus/(Deficit) as % of Supply	29%	26%	37%	32%	27%
Surplus/(Deficit) as % of Demand	42%	36%	59%	48%	38%

Notes:

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

² Assumes increased groundwater production in Years 1 and 2 with hardness limit still in place. In Years 3 through 5, wellhead treatment will have been installed, and in a declared drought, the Board may suspend the hardness water quality target that limits groundwater use.

³ Total supply minus total demand.

Section 6

Demand Management Measures

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

DWD, in conjunction with CCWD, has implemented all the Demand Management Measures required by the California Water Code.

6.1 Overview of Implementation Status

Appendix E contains a copy of DWD Regulation No. 8, Water-Use Efficiency, originally adopted in 1986 and most recently amended in 2021. 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, in conjunction with CCWD, has implemented all the DMMs required by the CWC. Customers within the DWD service area are eligible to participate in all 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>).

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-Use Efficiency, 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 showerhead that will limit flow to not more than 1.8 gpm.
- Install displacement devices in toilet tanks to reduce water use to 1.28 gallons per flush (gpf).
- Install aerators or laminar flow devices on residential kitchen faucets to reduce maximum flow to 1.8 gpm, non-residential kitchen faucets to 1.5 gpm, residential bathroom faucets to 1.2 gpm, and non-residential bathroom faucets to 0.4 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 80 percent of its connections on FlexNet and expects to have the remaining meters on FlexNet within the next 18 to 24 months. 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 was 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 \$3.40 per unit; and
- Each unit used over 8 units is billed at \$3.80 per unit.

DWD is in the process of hiring a rate consultant to review the current rate structure and make future rate structure and pricing recommendation. The recommendations are anticipated to be presented to the Board in late 2021.

6.2.4 Public Education and Outreach

DWD has had a long-term public information program promoting water conservation. DWD recently hired a staff member dedicated to public education and outreach and managing distribution system losses. DWD now issues a monthly eNews blast containing current information about the District and projects, conservation tips, and reminds customers of the availability of water conservation programs through both DWD (<https://diablowater.org/your-water/conservation/>) and CCWD (<http://www.ccwater.com/148/Conservation>). 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 WTP 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 non-revenue water, which is the difference between the quantity of water supplied 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. From November to December 2020, DWD performed a leak detection audit of the entire distribution system via acoustic listening and correlators. Three minor pinpoint leaks were detected and were repaired immediately.

The percentage of non-revenue water in DWD's system has averaged about 7 percent per year over the last 5 years, ranging from about 2 percent to a high of 9 percent. This average percentage is well below the target level of 10 percent or below.

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 2020 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

Multi-family and commercial 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 \$450 rebate for purchasing and installing a new high-efficiency commercial washing machine. The amount of the rebate depends on the years that the qualifying machine has been leased (if leased), with the \$450 rebate awarded if the machine is purchased. From 2016 through 2020, no washer rebates were provided in the DWD service area.

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

Each month, 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 2016 through 2020, 27 water-wise audits for single-family residential customers were performed. 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 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.

6.2.7.3 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 2016 through 2020, a total of 75 showerheads and 37 aerators were provided to single-family and multi-family residential customers.

The City of Oakley requires 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.

6.2.7.4 Large Landscape Conservation Programs

DWD's Regulation No. 8, Water-Use Efficiency, provides that no area in DWD's 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. CCWD 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 eligible to participate in CCWD's Lawn to Garden Rebate Program, offering rebates to customers to replace lawns with water-wise landscaping. From 2016 through 2020, DWD customers, including residential, commercial, institutional, and industrial, converted a total of 243,775 square feet of turf. 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.

CCWD also offers rebates for Smart Irrigation Controllers to allow for more accurate metering of landscape irrigation water. The rebate is \$12 per active irrigation zone, up to 50 percent of the cost of the controllers. From 2016 through 2020, 19 DWD customers received this rebate.

6.2.7.5 Pool Cover Rebate Program

CCWD reports that installing a pool cover can save up to 8,000 gallons of water per year. CCWD provides a rebate program to award customers the entire the cost of a qualifying pool cover up to a maximum of \$50. Qualifying covers include those that are impermeable to water, preventing evaporation, solar covers, and disk covers. From 2016 through 2020, 15 DWD customers received the rebate.

6.2.7.6 Conservation Programs for Commercial, Industrial, and Institutional 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 previously discussed, free pre-rinse dishwashing sprayers, and commercial irrigation equipment rebates for customers who choose a landscape survey.

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Section 7

Energy Intensity Analysis

DWR requires an energy intensity analysis be included in the 2020 UWMP cycle as required by CWC §10631.2(a). This analysis covers reporting of the energy intensity of water supplies within a supplier's operational control for extraction, diversion, conveyance, placement into storage, treatment, and distribution for a one-year time period.

The energy intensity for the water management processes within DWD's operational control was estimated to be approximately 2,636 kilowatt-hours per million gallons.

7.1 Energy Intensity

DWR's guidelines define operational energy intensity as the total amount of energy expended by the urban water supplier per unit of water to take water from the location where the urban water supplier acquires the water to its point of delivery. DWD's 2020 metered electricity data was used for this analysis.

7.1.1 Water Consumption

The water entering the system that is under the water supplier's "operational control" is used to calculate energy intensity for this analysis, per CWC regulations. Table 7-1 presents the potable water supplied by DWD in 2020. The District received approximately 88 percent of its water supply from Randall-Bold WTP. The WTP is under CCWD's operational control and therefore is not included further in this analysis.

Table 7-1 DWD Water Supplied in 2020

Water Management Process	Applicable Water Supply Sources	Volume in MG (2020)
Potable Water (surface water)	Potable water supplies from Randall-Bold WTP. Not under District's operational control and not included in the energy intensity analysis.	1,855 MG
Potable Water (groundwater)	Groundwater supplies from Glen Park and Stonecreek Wells within District's operational control.	250 MG
Total Potable Water		2,105 MG

7.1.2 Potable Water

The total energy usage for the water management processes within DWD's operational control was estimated to be approximately 658,980 kilowatt-hours (kWh) for 2020. Table 7-2 illustrates the total energy use by water management process for 2020. Energy use presented in this section includes energy consumptions at Glenn Park Well Station, Stonecreek Well Station, Blending Facility at Randall-Bold WTP, and the Corp Yard Pump Station (booster pumps).

Energy intensity is the amount of energy expended per gallon to move water from its source to the point of delivery. Energy intensity is reported based on the volume of water passing through each water management process within the operational control of the District.

Table 7-2 Water Supply Energy Intensity by Water Supply Process¹

	Extract/ Conveyance	Treatment	Distribution	Total Utility
Volume of Water Entering Process (MG)	250	250	250	250
Energy Consumed (kWh)	425,049 ²	12,241 ³	221,690 ⁴	658,980
Energy Intensity (kWh/MG)	1,700	49	887	2,636

Notes:

¹ Approximately 88% of the District's supply is from the Randall-Bold WTP operated by CCWD and not under the District's operational control. Energy consumed for surface water conveyance to Randall-Bold WTP, treatment at Randall-Bold WTP, and distribution from Randall-Bold WTP using high service pumps is not included.

² Includes energy consumed at Glen Park Well Station and Stonecreek Well Station in 2020.

³ Includes energy consumed at the Blending Facility at Randall-Bold WTP in 2020.

⁴ Includes energy consumed at the Corp Yard Pump Station in 2020.

Appendix A

Urban Water Management Planning Act

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Appendix A

Urban Water Management Planning Act

California Water Code Division 6, Part 2.6.

Chapter 1. General Declaration and Policy §10610-10610.4

Chapter 2. Definitions §10611-10618

Chapter 3. Urban Water Management Plans §10620-10645

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 §10650-10657

Chapter 1. General Declaration and Policy [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, and increasing long-term water conservation among Californians, improving water use efficiency within the state’s communities and agricultural production, and strengthening local and regional drought planning are critical to California’s resilience to drought and climate change.
- (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 now and into the foreseeable future, and every urban water supplier should collaborate closely with local land-use authorities to ensure water demand forecasts are consistent with current land-use planning.
- (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.
- (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 achieve the efficient use of available supplies and strengthen local drought planning.

Chapter 2. Definitions [10611 - 10618]

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

10611.3. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

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. "Drought risk assessment" means a method that examines water shortage risks based on the driest five-year historic sequence for the agency's water supply, as described in subdivision (b) of Section 10635.

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.
- 10617.5. “Water shortage contingency plan” means a document that incorporates the provisions detailed in subdivision (a) of Section 10632 and is subsequently adopted by an urban water supplier pursuant to this article.
10618. “Water supply and demand assessment” means a method that looks at current year and one or more dry year supplies and demands for determining water shortage risks, as described in Section 10632.1.

Chapter 3. Urban Water Management Plans [10620 - 10645]

Article 1. General Provisions [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, efficient water use, and improved local drought resilience.
 - (2) Notwithstanding paragraph (1), each urban water supplier shall develop its own water shortage contingency plan, but an urban water supplier may incorporate, collaborate, and otherwise share information with other urban water suppliers or other governing entities participating in an areawide, regional, watershed, or basinwide urban water management plan, an agricultural management plan, or groundwater sustainability plan development.
 - (3) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.
 - (e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.
 - (f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.
- 10621.
- (a) Each urban water supplier shall update its plan at least once every five years on or before July 1, in years ending in six and one, incorporating updated and new information from the five years preceding each update.
 - (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) An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage contingency plan as part of the supplier's general rate case filings.
- (d) 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).
- (e) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.
- (f) Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.

Article 2. Contents of Plans [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, while accounting for impacts from climate change.
- 10630.5. Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.
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 social, economic, and 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. The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.
 - (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), providing supporting and related information, including all of the following:

- (1) A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.
- (2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.
- (3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.
- (4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:
 - (A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), 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 for basins underlying the urban water supplier's service area.
 - (B) 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 a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin 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 coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).
 - (C) 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.

- (D) 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) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.
- (d) (1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:
 - (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) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.
- (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.

- (C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.
- (4) (A) Water use projections, where available, shall 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.
- (e) 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.
- (f) 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 normal and single-dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.
- (g) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
- (h) 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 (f). 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 (f).
(Amended by Stats. 2019, Ch. 239, Sec. 8. (AB 1414) Effective January 1, 2020.)

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.
(Added by Stats. 2005, Ch. 727, Sec. 2. Effective January 1, 2006.)

10631.2.

- (a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:
 - (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.
- (c) The Legislature finds and declares that energy use is only one factor in water supply planning and shall not be considered independently of other factors.

- 10632. (a) Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan that consists of each of the following elements:
 - (1) The analysis of water supply reliability conducted pursuant to Section 10635.

- (2) The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:
 - (A) The written decision making process that an urban water supplier will use each year to determine its water supply reliability.
 - (B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:
 - (i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.
 - (ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.
 - (iii) Existing infrastructure capabilities and plausible constraints.
 - (iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.
 - (v) A description and quantification of each source of water supply.
- (3) (A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.
- (B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.

- (4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:
 - (A) Locally appropriate supply augmentation actions.
 - (B) Locally appropriate demand reduction actions to adequately respond to shortages.
 - (C) Locally appropriate operational changes.
 - (D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.
 - (E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.
- (5) Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following:
 - (A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.
 - (B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1.
 - (C) Any other relevant communications.
- (6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.
- (7)
 - (A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.
 - (B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1.
 - (C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.

- (8) A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:
 - (A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).
 - (B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).
 - (C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.
 - (9) For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.
 - (10) Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.
 - (b) For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an 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.
 - (c) The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.
- 10632.1. An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.
- 10632.2. An urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in its water shortage contingency plan, as identified in subdivision (a) of Section 10632, or

reasonable alternative actions, provided that descriptions of the alternative actions are submitted with the annual water shortage assessment report pursuant to Section 10632.1. Nothing in this section prohibits an urban water supplier from taking actions not specified in its water shortage contingency plan, if needed, without having to formally amend its urban water management plan or water shortage contingency plan.

10632.3. It is the intent of the Legislature that, upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, the board defer to implementation of locally adopted water shortage contingency plans to the extent practicable.

- 10632.5. (a) In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.
- (b) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.
- (c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.

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 [10635- 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 long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive 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) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following:
- (1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk

assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.

- (2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.
 - (3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.
 - (4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.
- (c) 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.
 - (d) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.
 - (e) 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 [10640 - 10645]

10640. (a) 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.
- (b) Every urban water supplier required to prepare a water shortage contingency plan shall prepare a water shortage contingency plan pursuant to Section 10632. The supplier shall likewise periodically review the water shortage contingency plan as required by paragraph (10) of subdivision (a) of Section 10632 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 or a water shortage contingency 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 both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the 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 a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.
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) If an urban water supplier revises its water shortage contingency plan, the supplier shall submit to the department a copy of its water shortage contingency plan prepared pursuant to subdivision (a) of Section 10632 no later than 30 days after adoption, in accordance with protocols for submission and using electronic reporting tools developed by the department.
- (c) (1) (A) Notwithstanding Section 10231.5 of the Government Code, the department shall prepare and submit to the Legislature, on or before July 1, in the years ending in seven and two, a report summarizing the status of the plans and water shortage contingency plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans and water shortage contingency plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan and water shortage contingency plan to the department. The department shall also prepare reports and provide data for any legislative

hearings designed to consider the effectiveness of plans and water shortage contingency plans submitted pursuant to this part.

(B) The department shall prepare and submit to the board, on or before September 30 of each year, a report summarizing the submitted water supply and demand assessment results along with appropriate reported water shortage conditions and the regional and statewide analysis of water supply conditions developed by the department. As part of the report, the department shall provide a summary and, as appropriate, urban water supplier specific information regarding various shortage response actions implemented as a result of annual supplier-specific water supply and demand assessments performed pursuant to Section 10632.1.

(C) The department shall submit the report to the Legislature for the 2015 plans by July 1, 2017, and the report to the Legislature for the 2020 plans and water shortage contingency plans by July 1, 2022.

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

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

10645. (a) 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.

(b) Not later than 30 days after filing a copy of its water shortage contingency 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 [10650 - 10657]

10650. Any actions or proceedings, other than actions by the board, 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 or a water shortage contingency 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 water shortage contingency plan, or action taken pursuant to either, does not comply with this part shall be commenced within 90 days after filing of the plan or water shortage contingency plan or an amendment to either 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 a water shortage contingency plan, or an action taken pursuant to either 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 board and the Public Utilities Commission, for the preparation of water management plans, water shortage contingency plans, or conservation plans; provided, that if the board or the Public Utilities Commission requires additional information concerning water conservation, drought response measures, or financial conditions 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 that complies with analogous 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 urban water management plan, its drought risk assessment, its water supply and demand assessment, and its water shortage contingency plan and implementing the reasonable water conservation measures included in either of the plans.
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 is not eligible for a water grant or loan awarded or administered by the state unless the urban water supplier complies with this part.
10657. The department may adopt regulations regarding the definitions of water, water use, and reporting periods, and may adopt any other regulations deemed necessary or desirable to implement this part. In developing regulations pursuant to this section, the department shall solicit broad public participation from stakeholders and other interested persons.

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Appendix B

Urban Water Management Plan Checklist

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Appendix B

UWMP Checklist

Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Sections 1, 4, 6
10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	See beginning of each section
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 1.3
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 1.2
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 and contingency plan.	Plan Preparation	Section 1.2
10631(h)	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 4.2
10631(a)	Describe the water supplier service area.	System Description	Section 2.1
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 2.2
10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 2.3
10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Sections 2, 3, 6
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Section 2.3
10631(a)	Describe the land uses within the service area.	System Description	Sections 2.1, 3.1
10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 3.1
10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 3.1
10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans and other policies or laws.	System Water Use	not available
10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Section 3.1
10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Section 3.1
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 3.2
10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Sections 5.2, 5.3
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	Section 3.3
10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 3.3.1
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	Not applicable
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 3.3.1
10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX-7 7 2020 Compliance Form.	Baselines and Targets	Section 3.3.1, SBX-7 7 Compliance Form
10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Sections 5.1, 5.2, 5.3
10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, including changes in supply due to climate change.	System Supplies	Sections 5.1, 5.2, 5.3
10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	Sections 4.2, 4.3, 5.1
10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Sections 4.2, 4.3, 4.4
10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Section 4
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 4.3
10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or 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 4.3
10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 4.3
10631(b)(4)(B)	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 4.3
10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	Section 4.3
10631(b)(4)(C)	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 4.3
10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 4.3
10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 4.4.2
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 4.4.1
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 4.4.1
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 4.4.1
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 4.4.1
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 4.4.1
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 4.4.1
10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Not applicable
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	Section 4.4.1
10631(f)	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 for a period of drought lasting 5 consecutive water years.	System Supplies	Section 4.4
10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Supplies, Energy Intensity	Section 7
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	Sections 5.1, 5.3
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	Sections 5, 6
10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive 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 5.2
10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	Section 5.5

Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 5.5
10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Sections 5.1, 5.2
10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Sections 5.3, 5.5
10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Sections 5.1, 5.3
10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Appendix G
10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Appendix G Section 2
10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Appendix G Sections 3, 5, 6
10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Appendix G Section 3, 6
10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Appendix G Section 2
10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Appendix G Sections 1.1, 3, 5.2
10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Appendix G Section 5.2
10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Appendix G Section 5.2
10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Appendix G Section 5.2
10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix G Section 5.2
10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Appendix G Section 5.2
10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Appendix G Section 5.2
10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Appendix G Section 8
10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Appendix G Section 10
10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Appendix G Section 10
10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Appendix G Section 4
10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix G Section 9
10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Appendix G Section 9
10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Appendix G Section 10
10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix G Section 7
10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix G Section 7
10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Appendix G Section 7
10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Appendix G Section 6
10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Appendix G Section 5
10635(c)	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 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 1.3
10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Section 1.3
10631(e)(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	Section 6
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	Section 1.3, Appendices C-2 and C-3
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 1.2, Appendix C-1
10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	Section 1.3
10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Plan Adoption, Submittal, and Implementation	Section 1.3, Appendices C-2 and C-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	Section 1.3, Appendices C-2 and C-3
10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 1.3, Appendix C-4
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 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 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	Section 1.3
10645(a)	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 1.3
10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency 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 1.3
10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	Not applicable
10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	Not applicable

Appendix C

Public Involvement Materials

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C-1 – Notices of UWMP Preparation

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Sent Via E-Mail: jsamuelson@ci.antioch.ca.us

March 25, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. John Samuelson
Director of Public Works
City of Antioch
P. O. Box 5007
Antioch, CA 94531

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Samuelson,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to 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 Draft 2020 UWMP is expected to be released in early May 2021. A public hearing will be held in May 2021 to provide an opportunity to comment on the Draft 2020 UWMP.

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

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: r.gilmore@bbid.org

March 25, 2021

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

Directors:
Paul Seger
President

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Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

*General Manager
& Secretary:*
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Rick Gilmore
General Manager
Byron-Bethany Irrigation
District 7955 Bruns Road
Byron, CA 94514

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Gilmore,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to 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 Draft 2020 UWMP is expected to be released in early May 2021. A public hearing will be held in May 2021 to provide an opportunity to comment on the Draft 2020 UWMP.

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

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: respinoza@bimid.com

March 25, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Ms. Regina Espinoza
District Manager
Bethel Island Municipal Improvement District
P. O. Box 244
Bethel Island, CA 94511

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Ms. Espinoza,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to 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 Draft 2020 UWMP is expected to be released in early May 2021. A public hearing will be held in May 2021 to provide an opportunity to comment on the Draft 2020 UWMP.

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

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: mtsubota@brentwoodca.gov

March 25, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Miki Tsubota
Director of Public Works
City of Brentwood
150 City Park Way
Brentwood, CA 94513

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Tsubota,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to 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 Draft 2020 UWMP is expected to be released in early May 2021. A public hearing will be held in May 2021 to provide an opportunity to comment on the Draft 2020 UWMP.

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

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: eric.swing@waterboards.ca.gov

March 25, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tieman
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

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

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Swing,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to 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 email at cbelleci@diablowater.org or by phone at 925-625-0588.

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: john.kopchik@dcd.cccounty.us

March 25, 2021

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

Directors:
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Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

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

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Kopchik,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to 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 email at cbelleci@diablowater.org or by phone at 925-625-0588.

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: timothy.ellsworth@cchealth.org

March 25, 2021

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

Directors:
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Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Tim Ellsworth
Contra Costa County
Department of Health Services
2120 Diamond Blvd., Suite 100
Concord, CA 94520

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Ellsworth,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

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

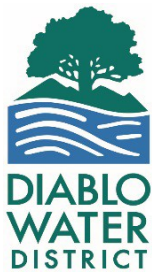
In compliance with the California Water Code, DWD is providing this notice to encourage involvement in the update of the UWMP.

DWD's Draft 2020 UWMP is expected to be released in early May 2021. A public hearing will be held in May 2021 to provide an opportunity to comment on the Draft 2020 UWMP.

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

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: jmosley@ccwater.com

March 25, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tieman
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Ms. Jill Mosley
Senior Engineer
Contra Costa Water District
P. O. Box H2O
Concord, CA 94524

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Ms. Mosley,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

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

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: vinced@deltadiablo.org

March 25, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tieman
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Vincent De Lange
General Manager
Delta Diablo
2500 Pittsburg-Antioch Highway
Antioch, CA 94509

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. De Lange,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

DWD is required by the California Water Code to update and adopt an UWMP and submit a completed plan to 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 email at cbelleci@diablowater.org or by phone at 925-625-0588.

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: atrott@eccid.org

March 25, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Aaron Trott
General Manager
East Contra Costa Irrigation District
1711 Sellers Avenue
Brentwood, CA 94513

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Trott,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

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

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DWD's Draft 2020 UWMP is expected to be released in early May 2021. A public hearing will be held in May 2021 to provide an opportunity to comment on the Draft 2020 UWMP.

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

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: davisson@isd.us.com

March 25, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

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

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Davisson,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

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

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: lea.castleberry@bos.cccounty.us

March 25, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Andrew Steudle, Chair
c/o Lea Castleberry
Knightsen Town Advisory Council
3361 Walnut Blvd, Suite 140
Brentwood, CA 94513

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Steudle,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

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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.

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

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: rohani@ci.oakley.ca.us

March 25, 2021

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

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

Directors:
Paul Seger
President

Subject: Diablo Water District's 2020 Urban Water Management Plan

Scott R. Pastor
Vice President

Dear Mr. Rohani,

Kenneth L. Crockett
Marilyn M. Tieman
Joe Kovalick

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

General Manager
& Secretary:
Daniel Muelrath

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

General Counsel:
Wesley A. Miliband

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

DWD's Draft 2020 UWMP is expected to be released in early May 2021. A public hearing will be held in May 2021 to provide an opportunity to comment on the Draft 2020 UWMP.

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

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: rabono@ci.pittsburg.ca.us

March 25, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Richard Abono, Interim Director
City of Pittsburg
Public Works/Engineering Department
357 East 12th Street
Pittsburg, CA 94565

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Abono,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

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

Sincerely,

Dan Muelrath
General Manager



Sent Via E-Mail: agoldsworthy@todb.ca.gov

March 25, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tieman
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Aaron Goldsworthy
Water and Wastewater Manager
Town of Discovery Bay
1800 Willow Lake Road
Discovery Bay, CA 94505

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Goldsworthy,

Diablo Water District (DWD) is currently updating its Urban Water Management Plan which will be submitted to the State of California's Department of Water Resources (DWR) in June 2021.

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Sincerely,

Dan Muelrath
General Manager

C-2 – Notice of Availability

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Sent Via E-Mail: respinoza@bimid.com

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Ms. Regina Espinoza
District Manager
Bethel Island Municipal Improvement District
P. O. Box 244
Bethel Island, CA 94511

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Ms. Espinoza,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

The District will be holding a public hearing on Wednesday, May 26, 2021 at 6:30 p.m. The public hearing will be conducted via conference call/virtual meeting only. Those interested in participating in the public hearing, please visit our website www.diablowater.org for calling/viewing instructions. Comments may be presented at the virtual public hearing or submitted by writing to the District no later than 5:00 p.m., June 7, 2021, to the following address: Attn: Ms. Christine Belleci, Diablo Water District, P. O. Box 127, 87 Carol Lane, Oakley, CA 94561.

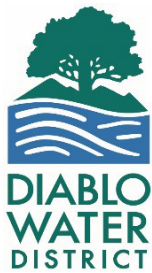
If you have any questions or if you would like additional information, please contact Christine Belleci via email at cbelleci@diablowater.org or by phone at 925-625-0588.

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: r.gilmore@bbid.org

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Rick Gilmore
General Manager
Byron-Bethany Irrigation District
7955 Bruns Road
Byron, CA 94514

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Gilmore,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: eric.swing@waterboards.ca.gov

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tieman
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

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

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Swing,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: jsamuelson@ci.antioch.c.us

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tieman
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. John Samuelson
Director of Public Works
City of Antioch
P. O. Box 5007
Antioch, CA 94531

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Samuelson,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: mtsubota@brentwoodca.gov

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Miki Tsubota
Director of Public Works
City of Brentwood
150 City Park Way
Brentwood, CA 94513

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Tsubota,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: rohani@ci.oakley.ca.us

May 6, 2021

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

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

Directors:
Paul Seger
President

Subject: Diablo Water District's 2020 Urban Water Management Plan

Scott R. Pastor
Vice President

Dear Mr. Rohani,

Kenneth L. Crockett
Marilyn M. Tieman
Joe Kovalick

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

The District will be holding a public hearing on Wednesday, May 26, 2021 at 6:30 p.m. The public hearing will be conducted via conference call/virtual meeting only. Those interested in participating in the public hearing, please visit our website www.diablowater.org for calling/viewing instructions. Comments may be presented at the virtual public hearing or submitted by writing to the District no later than 5:00 p.m., June 7, 2021, to the following address: Attn: Ms. Christine Belleci, Diablo Water District, P. O. Box 127, 87 Carol Lane, Oakley, CA 94561.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: rabono@ci.pittsburg.ca.us

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Richard Abono, Interim Director
City of Pittsburg
Public Works/Engineering Department
357 East 12th Street
Pittsburg, CA 94565

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Abono,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

The District will be holding a public hearing on Wednesday, May 26, 2021 at 6:30 p.m. The public hearing will be conducted via conference call/virtual meeting only. Those interested in participating in the public hearing, please visit our website www.diablowater.org for calling/viewing instructions. Comments may be presented at the virtual public hearing or submitted by writing to the District no later than 5:00 p.m., June 7, 2021, to the following address: Attn: Ms. Christine Belleci, Diablo Water District, P. O. Box 127, 87 Carol Lane, Oakley, CA 94561.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: john.kopchik@dcd.cccounty.us

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

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

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Kopchik,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

The District will be holding a public hearing on Wednesday, May 26, 2021 at 6:30 p.m. The public hearing will be conducted via conference call/virtual meeting only. Those interested in participating in the public hearing, please visit our website www.diablowater.org for calling/viewing instructions. Comments may be presented at the virtual public hearing or submitted by writing to the District no later than 5:00 p.m., June 7, 2021, to the following address: Attn: Ms. Christine Belleci, Diablo Water District, P. O. Box 127, 87 Carol Lane, Oakley, CA 94561.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: timothy.ellsworth@cchealth.org

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Tim Ellsworth
Contra Costa County
Department of Health Services
2120 Diamond Blvd., Suite 100
Concord, CA 94520

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Ellsworth,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

The District will be holding a public hearing on Wednesday, May 26, 2021 at 6:30 p.m. The public hearing will be conducted via conference call/virtual meeting only. Those interested in participating in the public hearing, please visit our website www.diablowater.org for calling/viewing instructions. Comments may be presented at the virtual public hearing or submitted by writing to the District no later than 5:00 p.m., June 7, 2021, to the following address: Attn: Ms. Christine Belleci, Diablo Water District, P. O. Box 127, 87 Carol Lane, Oakley, CA 94561.

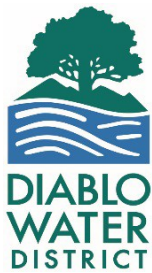
If you have any questions or if you would like additional information, please contact Christine Belleci via email at cbelleci@diablowater.org or by phone at 925-625-0588.

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: jmosley@ccwater.com

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Ms. Jill Mosley
Senior Engineer
Contra Costa Water District
P. O. Box H2O
Concord, CA 94524

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Ms. Mosley,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

The District will be holding a public hearing on Wednesday, May 26, 2021 at 6:30 p.m. The public hearing will be conducted via conference call/virtual meeting only. Those interested in participating in the public hearing, please visit our website www.diablowater.org for calling/viewing instructions. Comments may be presented at the virtual public hearing or submitted by writing to the District no later than 5:00 p.m., June 7, 2021, to the following address: Attn: Ms. Christine Belleci, Diablo Water District, P. O. Box 127, 87 Carol Lane, Oakley, CA 94561.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: vinced@deltadiablo.org

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Vincent De Lange
General Manager
Delta Diablo
2500 Pittsburg-Antioch Highway
Antioch, CA 94509

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. De Lange,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

The District will be holding a public hearing on Wednesday, May 26, 2021 at 6:30 p.m. The public hearing will be conducted via conference call/virtual meeting only. Those interested in participating in the public hearing, please visit our website www.diablowater.org for calling/viewing instructions. Comments may be presented at the virtual public hearing or submitted by writing to the District no later than 5:00 p.m., June 7, 2021, to the following address: Attn: Ms. Christine Belleci, Diablo Water District, P. O. Box 127, 87 Carol Lane, Oakley, CA 94561.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: atrott@eccid.org

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Aaron Trott
General Manager
East Contra Costa Irrigation District
1711 Sellers Avenue
Brentwood, CA 94513

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Trott,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

The District will be holding a public hearing on Wednesday, May 26, 2021 at 6:30 p.m. The public hearing will be conducted via conference call/virtual meeting only. Those interested in participating in the public hearing, please visit our website www.diablowater.org for calling/viewing instructions. Comments may be presented at the virtual public hearing or submitted by writing to the District no later than 5:00 p.m., June 7, 2021, to the following address: Attn: Ms. Christine Belleci, Diablo Water District, P. O. Box 127, 87 Carol Lane, Oakley, CA 94561.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: davisson@isd.us.com

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

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

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Davisson,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

The District will be holding a public hearing on Wednesday, May 26, 2021 at 6:30 p.m. The public hearing will be conducted via conference call/virtual meeting only. Those interested in participating in the public hearing, please visit our website www.diablowater.org for calling/viewing instructions. Comments may be presented at the virtual public hearing or submitted by writing to the District no later than 5:00 p.m., June 7, 2021, to the following address: Attn: Ms. Christine Belleci, Diablo Water District, P. O. Box 127, 87 Carol Lane, Oakley, CA 94561.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: lea.castleberry@bos.cccounty.us

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Andrew Steudle, Chair
c/o Lea Castleberry
Knightsen Town Advisory Council
3361 Walnut Blvd, Suite 140
Brentwood, CA 94513

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Steudle,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

The District will be holding a public hearing on Wednesday, May 26, 2021 at 6:30 p.m. The public hearing will be conducted via conference call/virtual meeting only. Those interested in participating in the public hearing, please visit our website www.diablowater.org for calling/viewing instructions. Comments may be presented at the virtual public hearing or submitted by writing to the District no later than 5:00 p.m., June 7, 2021, to the following address: Attn: Ms. Christine Belleci, Diablo Water District, P. O. Box 127, 87 Carol Lane, Oakley, CA 94561.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager



Sent Via E-Mail: agoldsworthy@todb.ca.gov

May 6, 2021

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

General Manager
& Secretary:
Daniel Muelrath

General Counsel:
Wesley A. Miliband

Mr. Aaron Goldsworthy
Water and Wastewater Manager
Town of Discovery Bay
1800 Willow Lake Road
Discovery Bay, CA 94505

Subject: Diablo Water District's 2020 Urban Water Management Plan

Dear Mr. Goldsworthy,

Diablo Water District (DWD) has completed the draft copies of the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.). The draft is available for review on the District's website: www.diablowater.org.

The District will be holding a public hearing on Wednesday, May 26, 2021 at 6:30 p.m. The public hearing will be conducted via conference call/virtual meeting only. Those interested in participating in the public hearing, please visit our website www.diablowater.org for calling/viewing instructions. Comments may be presented at the virtual public hearing or submitted by writing to the District no later than 5:00 p.m., June 7, 2021, to the following address: Attn: Ms. Christine Belleci, Diablo Water District, P. O. Box 127, 87 Carol Lane, Oakley, CA 94561.

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

Sincerely,

Dan
Muelrath

Digitally signed
by Dan Muelrath
Date: 2021.05.06
12:39:14 -07'00'

Dan Muelrath
General Manager

C-3 – Notice of Public Hearing

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

Directors:
Paul Seger
President

Scott R. Pastor
Vice President

Kenneth L. Crockett
Marilyn M. Tiernan
Joe Kovalick

*General Manager
& Secretary:*
Daniel Muelrath

General Counsel:
Wesley A. Miliband

NOTICE OF PUBLIC HEARING and

Availability of Final Drafts - Urban Water Management Plan and Water Shortage Contingency Plan for Public Review

As required by Law, Diablo Water District has prepared an update of its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP). The Final Draft Plans are available for public inspection and review as of May 7, 2021, at the following locations:

The District's Website, www.diablowater.org,

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

Hours: Tuesday and Wednesday from 12 p.m. to 8 p.m.; Thursday, Friday, Saturday from 10 a.m. to 6 p.m.; Closed Sunday and Monday

A public hearing on the Final Draft of the Plans will be held on May 26, 2021, at 6:30 p.m. via conference call/virtual meeting. Visit www.diablowater.org for details of the meeting. Comments may be presented at the virtual public hearing. Written comments on the Final Draft of the Plans should be submitted to the District no later than June 7, 2021, at the address shown below.

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

The Final UWMP and WSCP, incorporating appropriate comments, will be set for adoption at the June 23, 2021, Board Meeting. Please call Christine Belleci at 925-625-0588 with any questions.

To be posted from May 7, 2021 to May 26, 2021

MAY 25 2021

PROOF OF PUBLICATION

RECEIVED

THE PRESS



NOTICE OF PUBLIC HEARING

STATE OF CALIFORNIA
COUNTY OF CONTRA COSTA

Jovel Parlog of said County, does hereby certify:

That she is and was during all the times herein mentioned, a citizen of the United States, over the age of 21 years and neither a party to nor in any way interested in the matter or action herein set forth, and is and was competent to be a witness in said matter or action:

That she is now and at all times herein mentioned was the principal clerk of the OAKLEY PRESS, publishers of the OAKLEY PRESS (No. 03-0477), which is and was at all times herein mentioned a newspaper of general circulation printed and published weekly in the City of Oakley, County of Contra Costa, State of California, and as such principal clerk has now and at all of said times had charge of all legal notices and advertisements in said newspaper; that said OAKLEY PRESS is now and was at all times herein mentioned a newspaper of general circulation as that term is defined by Section 6000 of the Government Code, and as provided by said Section, is and at all of said times was published for the dissemination of local and telegraphic news and intelligence of a general character, having a bona fide subscription list of paying subscribers, and is not and at none of said times was devoted to the interests or published for the entertainment or instruction of a particular class, profession, trade, calling, race or denomination, or for any number of such classes, professions, trades, callings, races or denominations; that at all times said newspaper has been established, printed and published at regular intervals in said County and State, for more than one year preceding the date of the first publication of the notice herein mentioned; that said notice was set in type not smaller than nonpareil, and was preceded with words printed in black face type not smaller than nonpareil, describing and expressing in general terms the purport and character of the notice intended to be given.

THAT THE

NOTICE OF PUBLIC HEARING

of which the annexed is a printed copy, was published in said newspaper and not in any supplement thereof on the following dates, to-wit:

May 7, 14, 2021

I certify (or declare) under penalty of perjury that the foregoing is true and correct.
Dated this 14 day of May, 2021.

AD#: 85631

DIABLO
WATER
DISTRICTNOTICE OF PUBLIC HEARING
and Availability of Final Drafts Urban
Water Management Plan and Water
Shortage Contingency Plan for Public
Review

As required by Law, Diablo Water District has prepared an update of its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP). The Final Draft Plans are available for public inspection and review as of May 7, 2021, at the following locations:

The District's Website, www.diablowater.org.

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

Hours: Tuesday and Wednesday from 12 p.m. to 8 p.m.; Thursday, Friday, Saturday from 10 a.m. to 6 p.m.; Closed Sunday and Monday

A public hearing on the Final Draft of the Plans will be held on **May 26, 2021, at 6:30 p.m.** via conference call/virtual meeting. Visit www.diablowater.org for details of the meeting. Comments may be presented at the virtual public hearing. Written comments on the Final Draft of the Plans should be submitted to the District no later than June 7, 2021, at the address shown below.

Ms. Christine Belled
Diablo Water District

P.O. Box 127
87 Carol Lane
Oakley, CA 94561

The Final UWMP and WSCP, incorporating appropriate comments, will be set for adoption at the June 23, 2021, Board Meeting. Please call Christine Belled at 925-625-0588 with any questions. Publish May 7 and May 14, 2021. Oakley Press No. 03-0477 85631
Publish Dates: May 7, 14, 2021.

SIGNATURE

C-4 – Adoption Resolutions

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RESOLUTION NUMBER 2021 – 17

**A RESOLUTION OF THE BOARD OF DIRECTORS OF DIABLO
WATER DISTRICT ADOPTING THE DISTRICT’S 2020 URBAN WATER
MANAGEMENT PLAN**

WHEREAS, California Water Code Section 10610 et seq., known as the Urban Water Management Planning Act (Planning Act), requires urban water suppliers to prepare and adopt an Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) every five years on or before July 1, in years ending in six and one; and

WHEREAS, California Water Code Section 10652 exempts the preparation and adoption of UWMPs and amendments to UWMPs from the California Environmental Quality Act; and

WHEREAS, the deadline for adoption and submittal of the 2020 UWMP and WSCP is July 1, 2021; and

WHEREAS, the Planning Act specifies the requirements and procedures for adopting such UWMPs and WSCPs.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of Diablo Water District:

1. Adopts the District’s 2020 Urban Water Management Plan.
2. Directs the General Manager to submit the UWMP as required by law.

* * * * *

I hereby certify that the foregoing is a true and complete copy of a resolution duly and regularly adopted by the Board of Directors of Diablo Water District at a meeting thereof held on June 28, 2021, by the following vote:

AYES: Pastor, Crockett, Seger, Kovalick

NOES: Tiernan

ABSENT: None

DATED: June 28, 2021

A handwritten signature in black ink, appearing to read "Dan Muelrath", written over a horizontal line.

Dan Muelrath, Secretary

RESOLUTION NUMBER 2021 – 18

A RESOLUTION OF THE BOARD OF DIRECTORS OF DIABLO WATER DISTRICT ADOPTING THE DISTRICT'S 2020 WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, California Water Code Section 10610 et seq., known as the Urban Water Management Planning Act (Planning Act), requires urban water suppliers to prepare and adopt an Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) every five years on or before July 1, in years ending in six and one; and

WHEREAS, California Water Code Section 10652 exempts the preparation and adoption of UWMPs and amendments to UWMPs from the California Environmental Quality Act; and

WHEREAS, the deadline for adoption and submittal of the 2020 UWMP and WSCP is July 1, 2021; and

WHEREAS, the Planning Act specifies the requirements and procedures for adopting such UWMPs and WSCPs.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of Diablo Water District:

1. Adopts the District's 2020 Water Shortage Contingency Plan.
2. Directs the General Manager to submit the WSCP as required by law.

* * * * *

I hereby certify that the foregoing is a true and complete copy of a resolution duly and regularly adopted by the Board of Directors of Diablo Water District at a meeting thereof held on June 28, 2021, by the following vote:

AYES: Pastor, Crockett, Seger, Kovalick

NOES: Tiernan

ABSENT: None

DATED: June 28, 2021

A handwritten signature in black ink, appearing to read "Dan Muelrath", written over a horizontal line.

Dan Muelrath, Secretary

Appendix D

CCWD Supply Reliability Analysis

This page intentionally left blank.

**BOARD OF DIRECTORS**

Lisa M. Borba, AICP
PRESIDENT

Connstance Holdaway
VICE PRESIDENT

Ernesto A. Avila, P.E.

Bette Boatman

John A. Burgh

January 21, 2021

GENERAL MANAGER

Stephen J. Welch, P.E., S.E.

Daniel Muelrath
General Manager
Diablo Water District
P. O. Box 127
Oakley, CA 94561

Subject: 2020 Urban Water Management Plan – Supply Reliability Analysis and Senate Bill x7-7 Requirements

Dear Mr. Muelrath:

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.

A summary of the water supply reliability assessment results is provided in Table 1 below shown as a percentage of demand. For example, in the year 2040, the District anticipates it could supply at least 90 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	2025	2030	2035	2040	2045
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%	100%	100%
Multi-Year Drought, Year 3	95%	95%	95%	90%	90%
Multi-Year Drought, Year 4	90%	90%	90%	85%	85%
Multi-Year Drought, Year 5	85%	85%	85%	85%	85%

Additionally, the District and its wholesale municipal customers are required to comply with Senate Bill x7-7 (SBx7-7), which requires water suppliers demonstrate compliance with their water use target.

As discussed during our meeting in December 2020, the District will prepare a SBx7-7 analysis for its regional alliance. The regional alliance will include the District and its wholesale municipal customers (Cities of Martinez, Antioch, and Pittsburg, Diablo Water District, and Golden State Water Company) as it did for the 2015 UWMP. Each agency is required to report its individual water use target as well as include a statement in its UWMP that the agency is a member of the District's regional alliance. The District will submit a letter to the Department of Water Resources with the list of members in its regional alliance.

If you would like to discuss this, or have any questions or concerns please contact me at (925) 688-8127 or jmosley@ccwater.com. The District looks forward to continuing to work with you as we complete the 2020 UWMP update.

Sincerely,



Jill Mosley
Senior Engineer

JM /kh

Appendix E

Diablo Water District Regulation No. 8, Water-Use Efficiency

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DIABLO WATER DISTRICT

REGULATION NO. 8

WATER-USE EFFICIENCY

Section I. Purpose

- A. 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 of water.

Section II. Prevention of Waste or Unreasonable Use

- A. Waste and unreasonable use is defined as the following activities:
1. Creating landscape irrigation runoff and overspray.
 2. Irrigating between the hours of 8am to 8pm.
 3. Irrigating within 48 hours of measurable rainfall (0.25” or more in a 24-hour period).
 4. Running water fountains and features that are non-recirculating.
 5. Using a hose without an automatic shut-off nozzle.
 6. Failing to fix a water leak on the customer side of the water meter.
- B. To ensure equitable treatment of all customers, the District will take a positive and proactive customer service approach to help customer resolve waste and unreasonable use actions.

- C. The District shall have the right, following written notice, to impose upon any water service connection or landlord such conditions as the District determines to be necessary to prevent unreasonable use or waste of water. After each notification, the customer will be given 7 days to remedy the issue.

First written notification: Courtesy Letter - no penalty

Second written notification: Courtesy Letter - no penalty

Third written notification: \$25 penalty

Fourth written notification: \$50 penalty

Fifth written notification: \$100 penalty and installation of flow restrictor

Further actions: All users of water furnished by the District are required to take all reasonable actions to prevent the waste of water up to and including the termination of water service.

Section III. Indoor Water Efficiency Standards

- A. The State of California has established regulatory requirements that the District must achieve regarding indoor water-use efficiency. The following are regulated limits that the District must achieve across all customers.

- January 1, 2021: 55 gallons per capita per day
- January 1, 2025: 52.5 gallon per capita per day
- January 1, 2030: 50 gallons per capita per day

All existing users of water furnished by the District are required to take all reasonable action to upgrade fixtures to current water-use efficiency standards. All new connections shall have fixtures that meet the efficiency requirements of this section, in addition to being an EPA WaterSense labeled product. In the event that CalGreen increases the water efficiency requirements per fixture, the new increased efficiency standard will supersede those listed here.

1. Residential:

- (a) Showerhead: not to exceed 1.8 gpm.
- (b) Lavatory faucet: not to exceed 1.2 gpm.
- (c) Kitchen faucet: not to exceed 1.8 gpm.
- (d) Toilets: not to exceed 1.28 gallons per flush.
- (e) Clothes washer: energy star certified.
- (f) Dishwasher: energy star certified.

2. Non-Residential:

- (g) Showerhead: not to exceed 1.8 gpm.
- (h) Lavatory faucet: not to exceed 0.4 gpm.
- (i) Kitchen faucet: not to exceed 1.5 gpm.
- (j) Metering faucets: not to exceed 0.2 gallons per cycle.
- (k) Gravity toilets: not to exceed 1.2 gallons per flush.
- (l) Flushometer style toilets: not to exceed 1.28 gallons per flush.

(m) Clothes washer: energy star certified.

(n) Dishwasher: energy star certified.

Section IV. Outdoor Water Efficiency Standards

A. The State of California is creating regulatory requirements that the District must achieve regarding outdoor water-use efficiency. The following are outdoor water-use limits for potable water customers.

1. Existing Landscapes Water Budgets:

Calculation in gallons:

Evapotranspiration x Adjustment Factor x irrigated area x 0.62

(a) Adjustment Factor January 1, 2021: 70% of
Evapotranspiration for irrigated areas.

(b) Adjustment Factor January 1, 2025: 65% of
Evapotranspiration for irrigated areas.

(c) Adjustment Factor January 1, 2030: 60% of
Evapotranspiration for irrigated areas.

2. New Landscapes:

(d) Plant selection, irrigation design, water budgets, inspections, etc. shall be in compliance with the most recent version of the State's Model Water Efficient Landscape Ordinance (MWELo).

(e) In addition to the MWELo and in support of eliminating non-functional turf, the District further

prohibits the installation of new turf in areas less than 10ft in width or length.

- (f) District will coordinate with the Association of California Water Agencies, and other trade organizations, to work with the California State Legislature to implement a state-wide, non-functional turf prohibition.
- (g) Further, the District will also work with local land use authorities to implement a non-functional turf prohibition.
- (h) All eligible products must be EPA WaterSense labeled.
- (i) The District reserves the right to be the local agency responsible for the implementation of MWELO.

Section V. Water-Use Efficiency Measures of the District

- A. The District shall pursue at all times a customer focused program for the efficient use of water.
- B. All water use shall be metered.
- C. Perform annual water audits compliant with state regulations.
- D. Coordinate with local school districts in providing educational information and/or programs on efficient water use.

- E. Make available at the District's office, website, social media, public library and other public places, educational materials regarding water-use efficiency and related benefits.

Section VI. Water Rates

- A. To encourage water-use efficiency and further discourage the waste and unreasonable use of water, the District shall utilize a cost-based, Prop 218 compliant water rate structure.

Appendix F

Diablo Water District Regulation No. 9, Drought Emergency Regulation

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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 G

Diablo Water District Water Shortage Contingency Plan

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Water Shortage Contingency Plan

Diablo Water District

June 2021



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Attachment C Emergency Plan of Diablo Water District

List of Abbreviations

Board	Board of Directors
CCCHMP	Contra Costa County Hazard Mitigation Plan
CCWD	Contra Costa Water District
CVP	Central Valley Project
CWC	California Water Code
District	Diablo Water District
DWD	Diablo Water District
gpcd	gallons per capita per day
gpf	gallon per flush
gpm	gallons per minute
m	meter
MG	million gallons
Reclamation	U.S. Bureau of Reclamation
UWMP	Urban Water Management Plan
WSCP	Water Shortage Contingency Plan
WTP	Water Treatment Plant

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Section 1

Introduction

Diablo Water District (DWD or the District) relies on various water supply sources to meet customer needs. These sources of supply include surface water supplied by the Contra Costa Water District (CCWD) and local groundwater. More frequent and longer-lasting dry periods, regulatory constraints, and seismic risks that can result in water delivery system outages are causing stress on water supply reliability for DWD's customers. As such, DWD must be prepared to take reasonable actions to balance water demands with limited water supplies. This Water Shortage Contingency Plan (WSCP) outlines a set of actions that DWD can take in the event of a declared water supply shortage or emergency.

DWD encourages its residents to always use water wisely, as outlined in DWD Regulation No. 8, Water-Use Efficiency, included as Attachment A. Regulation No. 9, Drought Emergency Regulation, is included as Attachment B. During past droughts, the Drought Emergency Regulation has served as an effective tool in reducing water use.

In 2018, two long-term water conservation bills, Senate Bill 606 and Assembly Bill 1668, were signed into law by Governor Jerry Brown. The two bills amended portions of the California Water Code (CWC) including §10632, which is related to water shortage contingency planning. Among other changes, the amended CWC requires agencies to incorporate an annual water supply and demand assessment under its Urban Water Management Plan (UWMP). It also specifies the adoption of six standard water shortage levels. This WSCP discusses the DWD's compliance with new regulations, as outlined in §10632 (a)(2) and §10632.1 of the CWC.

The purpose of the WSCP is to be prepared to impose temporary demand reductions in case available supply falls below the planned levels discussed in the 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.

1.1 Water Shortage Levels

DWD has six standard water shortage levels as summarized in Table 1-1.

Table 1-1 DWD Water Shortage Levels

Water Shortage Level	Target Reduction in Water Demand
Level 1: Minor Shortage	Up to 10%
Level 2: Moderate Shortage	Up to 20%
Level 3: Significant Shortage	Up to 30%
Level 4: Severe Shortage	Up to 40%
Level 5: Critical Shortage	Up to 50%
Level 6: Extreme Shortage	Greater than 50%

When a regional water supply shortage is declared by CCWD, they will assign allocation to their raw water customers including DWD. DWD will then evaluate CCWD's allocation, along with other water supply options, to determine whether to declare a shortage. This annual assessment of supply conditions, as outlined in Section 2, Annual Water Demand and Supply Assessment, will determine the appropriate water shortage level. Water shortage levels also apply to catastrophic interruption of water supplies, including but not limited to, earthquakes, facility outages, major power outages, major water quality events, acts of terrorism, or other emergency events. For an expanded discussion of catastrophic water supply interruptions, refer to Section 8, Catastrophic Supply Interruption Planning.

DWD's General Manager can recommend one of six water shortage response levels to the Board of Directors (Board) for official declaration. The Board can also terminate a water shortage level, based on the General Manager's recommendation. The process for notifying and declaring water shortage levels is explained in more detail in Section 10, Communication Protocol.

Section 2

2020 UWMP Water Supply Reliability Assessment

In accordance with CWC §10632(a), the water supply reliability analysis from the 2020 UWMP is provided here.

2.1 Service Area Reliability Assessment

To determine the overall service area reliability in compliance with CWC §10635(a), DWD incorporated data from CCWD regarding its supply reliability and historical groundwater availability to determine overall supply reliability to year 2040 under different hydrologic conditions. Tables 2-1, 2-2, and 2-3 tabulate the service reliability assessment for average year, single dry year, and multiple dry year conditions, respectively. No water shortages are anticipated as demands are met by the available supplies under all hydrologic scenarios.

Table 2-1 Water Supply and Demand Comparison for a Normal Year Hydrologic Condition

Supply / Demand (Million Gallons [MG])	2025	2030	2035	2040
CCWD ¹	2,738	2,738	2,738	3,650
DWD Groundwater ²	1,000	1,373	1,745	1,745
Total Supply	3,738	4,111	4,483	5,395
Total Demand	2,580	3,260	3,920	4,580
Surplus/(Deficit) ³	1,158	851	563	815
Surplus/(Deficit) as % of Supply	31%	21%	13%	15%
Surplus/(Deficit) as % of Demand	45%	26%	14%	18%

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

² Based on supply available from groundwater shown in UWMP Table 5-2.

³ Total supply minus total demand.

Table 2-2 Water Supply and Demand Comparison for a Single Dry Year Hydrologic Condition

Supply / Demand (MG)	2025	2030	2035	2040
CCWD ¹	2,738	2,738	2,738	3,650
DWD Groundwater ²	1,000	2,008	2,555	2,555
Total Supply	3,738	4,746	5,293	6,205
Total Demand	2,580	3,260	3,920	4,580
Surplus/(Deficit) ³	1,158	1,486	1,373	1,625
Surplus/(Deficit) as % of Supply	31%	31%	26%	26%
Surplus/(Deficit) as % of Demand	45%	46%	35%	35%

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

² Based on supply available from groundwater shown in UWMP Table 5-2. Hardness water quality targets that limit groundwater use during normal conditions may be suspended by the DWD Board if DWD declares a drought. Groundwater volumes presented here also assume installation of wellhead treatment at the Stonecreek Well to allow for full well production.

³ Total supply minus total demand.

Table 2-3 Water Supply and Demand Comparison for a Multiple-Dry Year Hydrologic Condition

Year	Supply / Demand (MG)	2025	2030	2035	2040
First Year of Drought	CCWD ¹	2,738	2,738	2,738	3,650
	DWD Groundwater ²	1,460	2,008	2,555	2,555
	Total Supply	4,198	4,746	5,293	6,205
	Total Demand	2,580	3,260	3,920	4,580
	Surplus/(Deficit) ³	1,618	1,486	1,373	1,625
	Surplus/(Deficit) as % of Supply	39%	31%	26%	26%
	Surplus/(Deficit) as % of Demand	63%	46%	35%	35%
Second Year of Drought	CCWD ¹	2,738	2,738	2,738	3,650
	DWD Groundwater ²	1,460	2,008	2,555	2,555
	Total Supply	4,198	4,746	5,293	6,205
	Total Demand	2,580	3,260	3,920	4,580
	Surplus/(Deficit) ³	1,618	1,486	1,373	1,625
	Surplus/(Deficit) as % of Supply	39%	31%	26%	26%
	Surplus/(Deficit) as % of Demand	63%	46%	35%	35%
Third Year of Drought	CCWD ¹	2,601	2,601	2,601	3,285
	DWD Groundwater ²	1,460	2,008	2,555	2,555
	Total Supply	4,061	4,609	5,156	5,840
	Total Demand	2,580	3,260	3,920	4,580
	Surplus/(Deficit) ³	1,481	1,349	1,236	1,260
	Surplus/(Deficit) as % of Supply	36%	29%	24%	22%
	Surplus/(Deficit) as % of Demand	57%	41%	32%	28%
Fourth Year of Drought	CCWD ¹	2,464	2,464	2,464	3,103
	DWD Groundwater ²	1,460	2,008	2,555	2,555
	Total Supply	3,924	4,472	5,019	5,658
	Total Demand	2,580	3,260	3,920	4,580
	Surplus/(Deficit) ³	1,344	1,212	1,099	1,078
	Surplus/(Deficit) as % of Supply	34%	27%	22%	19%
	Surplus/(Deficit) as % of Demand	52%	37%	28%	24%
Fifth Year of Drought	CCWD ¹	2,327	2,327	2,327	3,103
	DWD Groundwater ²	1,460	2,008	2,555	2,555
	Total Supply	3,787	4,335	4,882	5,658
	Total Demand	2,580	3,260	3,920	4,580
	Surplus/(Deficit) ³	1,207	1,075	962	1,078
	Surplus/(Deficit) as % of Supply	32%	25%	20%	19%
	Surplus/(Deficit) as % of Demand	47%	33%	25%	24%

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

²Based on supply available from groundwater shown in UWMP Table 5-2. Hardness water quality targets that limit groundwater use during normal conditions may be suspended by the DWD Board if DWD declares a drought. Groundwater volumes presented here also assume installation of wellhead treatment at the Stonecreek Well to allow for full well production.

³Total supply minus total demand.

2.2 Drought Risk Assessment

This section summarizes the development of a drought risk assessment in compliance with CWC §10635(b), which includes a summary of the anticipated DWD water demands and supplies over the five-year period of 2021 to 2025 in Table 2-4.

Table 2-4 5-year Drought Risk Assessment Summary

Supply / Demand (MG)	2021	2022	2023	2024	2025
CCWD ¹	2,464	2,464	2,341	2,218	2,095
DWD Groundwater ²	650	650	1,460	1,460	1,460
Total Supply	3,114	3,114	3,801	3,678	3,555
Total Demand	2,200	2,295	2,390	2,485	2,580
Surplus/(Deficit) ³	914	819	1,411	1,193	975
Surplus/(Deficit) as % of Supply	29%	26%	37%	32%	27%
Surplus/(Deficit) as % of Demand	42%	36%	59%	48%	38%

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

² Assumes increased groundwater production in Years 1 and 2 with hardness limit still in place. In Years 3 through 5, wellhead treatment will have been installed, and in a declared drought, the Board may suspend the hardness water quality target that limits groundwater use.

³ Total supply minus total demand.

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Section 3

Annual Water Demand and Supply Assessment

The new CWC §10632(a)(2) requires that urban water suppliers conduct an annual water supply and demand assessment (Annual Assessment) starting in 2022. This chapter describes the procedures used to: (1) conduct the Annual Assessment; and (2) prepare and submit an Annual Assessment Report to the State. In addition, this chapter outlines key inputs to conduct the Annual Assessment, the decision-making process for determining water supply reliability, and the ability/flexibility for DWD to use shortage response actions not included in the WSCP, as applicable.

When a regional water supply shortage is declared by CCWD, they will assign allocation to their raw water customers including DWD. DWD will then evaluate CCWD's allocation, along with other water supply options, to determine whether to declare any foreseen water shortage level based on the results of the Annual Assessment, which will then be included in the Annual Assessment Report submitted to the state. The evaluation is conducted by DWD to determine if a shortage declaration is needed and at what level. The Annual Assessment Report will document any anticipated shortage, any triggered shortage response actions, associated compliance and enforcement actions, and communication actions. More information on shortage response actions is included in Section 5, Shortage Response Actions. Reasonable alternative actions can be used to address identified water shortages, if descriptions of alternative actions are submitted with the Annual Assessment Report.

This WSCP identifies key inputs and methodology needed to evaluate DWD's annual assessment of water demand and supplies to help determine water shortage levels.

3.1 Key Input: Anticipated Water Demand

The Annual Assessment will use DWD's latest demand forecast (adjusted by previous year active consumption) which considers unconstrained demand, weather, population growth, and other influencing factors for the current and following years. Estimates of passive and active water conservation programs that DWD provides will also be noted and considered in assessment of water demand.

3.2 Key Input: Assessment of Water Supplies

Under a non-emergency condition, DWD performs an annual evaluation of all its water supply sources. DWD will evaluate the current year available supply and one dry year available supply in its Annual Assessment. The available water supply evaluation will consider hydrological and regulatory conditions. The methodology for determining the available supply from each water source is as follows:

- Local Sources:
 - *Groundwater*. Determine last year's groundwater production and any potential reduction in production for coming year
- Imported Sources:
 - *Purchased Imported Water from CCWD*. Assess imported water supplies from CCWD based on recent hydrologic conditions and forecasted assessment under a dry year

DWD relies primarily on CCWD to evaluate regional supply and demand and to evaluate water shortage levels. CCWD's water supply reliability goal is to meet 100 percent of demand in normal years and at least 85 percent of demand during a drought condition in which persistent dry weather conditions leads to water-related problems such as water supply shortages. CCWD implements a water reduction stage if a water supply shortfall is forecasted for the upcoming year. CCWD's estimate of the supply shortfall is only a rough estimate, even as late in the water year as March.

CCWD's water supply contract with the U.S. Bureau of Reclamation (Reclamation) includes criteria to determine CCWD's annual water allotment based on CCWD's historical use. Reclamation's Central Valley Project (CVP) Municipal and Industrial Water Shortage Policy defines historical use as the average quantity of CVP water put to beneficial use within the service area during the last three years of water deliveries, unconstrained by the availability of CVP water. Reclamation allows for adjustments to the calculation of historical use based on growth, certain conservation measures, or the use of non-CVP water supplies to meet demands. The level of supply shortfall from the CVP is expressed as a percent of the normally occurring demand that would need to be reduced to meet the available supplies. CCWD's available supplies other than CVP water include transfers from East Contra Costa Irrigation District and other dry-year purchases. This percent reduction is matched to the total reduction goals shown below to select the appropriate stage.

- Stage I: Supply reduction up to 10%
- Stage II: Supply reduction 10-20%
- Stage III: Supply reduction 20-40%
- Stage IV: Supply reduction 40-50%

CCWD acknowledges that retail agencies, including DWD, will independently adopt retail-level actions to manage potential water supply shortages. However, the DWD's WSCP uses the CCWD's WSCP as a key input with added detail for DWD-owned supplies and facilities. DWD's WSCP does not include a reassessment of regional emergency supply but it does assess the resulting shortage to the DWD, specifically, from a declared regional shortage by CCWD.

3.3 Key Input: Existing Water Supply Infrastructure

DWD is required to describe the methodology for identifying existing water supply infrastructure capabilities and potential constraints. DWD's existing water supply infrastructure is continuously assessed by Operations staff. Existing water supply infrastructure includes District-owned infrastructure, the Randall-Bold Water Treatment Plant (WTP) jointly owned with CCWD, and CCWD-owned imported water infrastructure. District-owned infrastructure includes groundwater wells, the Blending Facility, storage tanks, distribution system pipelines, chemical feed facilities, and pump stations. CCWD-owned infrastructure includes regional raw water conveyance pipelines and canals.

DWD will evaluate existing facility capacities and any constraints for the current year and for one dry year. District-owned infrastructure constraints can include planned shut-downs due to maintenance, construction impacts, water quality impacts, and unplanned outages due to earthquakes or other emergency conditions. Once constraints have been identified, DWD will determine whether the total quantified water supply should be adjusted to account for these constraints. DWD will also coordinate with CCWD to evaluate regional infrastructure constraints to determine how they would impact available DWD water supplies.

3.4 Decision-Making Process

This section describes the decision-making process that DWD will use each year to determine, and subsequently report to the State, its water supply reliability. The decision will also result in DWD, if conditions warrant, declaring a water shortage level and corresponding phases of actions. Steps in the decision-making process are listed below.

1. CCWD announces member agency allocation determination for current year.
2. CCWD determines carryover (and emergency storage apportionments if under emergency).
3. DWD determines DWD groundwater supply available.
4. DWD determines total supply available – inclusive of imported water supply.
5. DWD determines any infrastructure constraints (including water quality conditions limiting local sources).
6. DWD determines expected demand.
7. DWD compares supply and demand and makes a determination of the water supply reliability for the current year and one dry year.
8. DWD prepares and submits Annual Assessment Report to the State. DWD will coordinate with CCWD on submittal of the report by July 1.

3.5 Reasonable Alternative Actions

As stated in the regulations, an urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in this WSCP, as identified in the CWC subdivision (a) of §10632, or reasonable alternative actions, if descriptions of the alternative actions are submitted with the Annual Assessment Report pursuant to CWC §10632.1. Should DWD like to include reasonable alternative actions, the Annual Assessment Report will describe identified reasonable alternative actions (shortage response actions in addition to what was identified in Section 5, Shortage Response Actions).

Section 4

Penalties, Charges, and Other Enforcement of Prohibitions

California law prohibits waste and unreasonable use of water, even when no shortage response actions are in effect. Regulation No. 8, Water-Use Efficiency, requires DWD customers to take all reasonable action to prevent wasting water. The Regulation prohibits all water waste and defines violations and recommended conservation measures.

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 after written notice, DWD may, at the discretion of the General Manager or designee, fine the customer \$25 after a second notification; \$50 after a third notification; \$100 and install a flow restrictor after a fourth notification; and potentially termination of service if the unreasonable use or waste continues.

Terminating a customer's water service is not taken lightly and would occur only when other enforcement measures have not been effective. DWD would consider extenuating circumstances as part of a decision regarding appropriate remedies.

Written applications for exceptions to or waivers of any provision of these penalties 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.

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Section 5

Shortage Response Actions

Per CWC §10632 (a)(4), DWD has developed a list of possible supply shortage mitigation tools. The four types of locally appropriate “shortage response actions” as defined by regulations are:

- Supply augmentation
- Demand reduction actions,
- Operational changes, and
- Mandatory water use prohibitions (in addition to state-mandated prohibitions).

Shortage response actions included in this WSCP are a mix of prohibitions on end uses, consumption reduction methods, supply augmentation, and operational change measures.

The California Department of Water Resources defines prohibitions on end uses as measures to address areas that are the responsibility of end users, such as a broken sprinkler or leaking faucet. Consumption reduction methods are actions invoked by a water agency to reduce consumption, such as expanding public information campaigns and offering water use surveys. Supply augmentation is defined as any action designed to increase the existing supply availability such as the use of emergency storage or acquiring additional transfer water. Operational changes are defined as actions taken by a water agency to change the way in which existing supplies are used within its service area. Examples of operational change include eliminating hydrant flushing and street cleaning.

5.1 Permanent Water Waste Prohibitions

Permanent water waste prohibitions are always in effect in DWD's water service area. These prohibited uses, defined in DWD Regulation No. 8, Water-Use Efficiency, are intended to promote water conservation even during years of normal or above normal precipitation. All permanent water waste prohibitions target end uses and are included as shortage response actions under Water Shortage Level 1.

The following are the restrictions under Regulation No. 8:

- 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 or replace all showerheads to limit flow to not more than 1.8 gallons per minute (gpm).
- Replace toilets that use more than 1.6 gallons per flush (gpf) with those that use 1.28 gpf or less.

- Install aerators or laminar flow devices on residential kitchen faucets to reduce maximum flow to 1.8 gpm, non-residential kitchen faucets to 1.5 gpm, residential bathroom faucets to 1.2 gpm, and non-residential bathroom faucets to 0.4 gpm.
- Minimize the amount of turf used in landscape areas and use drought-tolerant (low water-using) plants.

5.2 Shortage Response Actions

In addition to permanent water waste prohibitions, which are always in effect, there are different types of response actions that can be implemented by DWD in the event of a supply shortage. These response measures represent a “toolbox” with a range of actions that can be used in combination, depending on the severity and duration of the shortage.

DWD employs numerous shortage response actions to mitigate water shortages during drought conditions or catastrophic events. Some of these response actions are detailed in Regulation No. 9, Drought Emergency Regulation, while others go beyond the regulations. As specific drought response levels are implemented, DWD will closely monitor projected available supply and demand per the Annual Assessment. Depending on these projections, the shortage response actions would either be implemented or expanded to appropriately respond to shortages.

The combination of shortage response actions associated with each water shortage level considered the estimate of the extent to which the supply gap was reduced. The first two water shortage levels focus on unobtrusive actions to delay reductions to rate-payer quality of life. Shortage response actions from previous levels are assumed to remain in effect as the water shortage level increases. The mix of shortage response actions in any given level is designed to produce an additional 10 percent of demand reductions above the previous level’s reduction.

The following subsections list the combinations of shortage response actions associated with each of the six WSCP Water Shortage Levels. The categories of “high,” “medium,” or “low” are assigned to each shortage response action based on the estimated extent to which it can reduce the supply gap.

5.2.1 Water Shortage Level 1: Minor Shortage

Water Shortage Level 1 constitutes a consumer supply shortfall and demand reduction of up to 10 percent. Shortage response actions listed under this level include the expanded enforcement of permanent water waste prohibitions listed in Section 5.1 and provided in the DWD’s DWD Regulation No. 8, Water-Use Efficiency.

- Medium: Expanded enforcement of permanent water waste prohibitions

5.2.2 Water Shortage Level 2: Moderate Shortage

DWD implements a Water Shortage Level 2: Moderate shortage when there is reasonable probability of a supply shortage and when demand needs to be reduced by up to 20 percent to ensure there will be sufficient supplies to meet demands. To reduce consumption during a Moderate Shortage and all higher levels of conditions, DWD will increase its public education and outreach efforts to build awareness of voluntary water conservation practices and all permanent

water waste prohibitions. The shortage response actions under a Moderate Shortage appear below.

- Low: Eliminate unnecessary uses of water
- Low: Take immediate action to prevent any water from being wasted
- Medium: Limit outdoor watering to three days per week
- Medium: Limit 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.
- Medium: Prohibit the application of water to any hard surface; including but not limited to driveways, sidewalks, and asphalt.
- Medium: Prohibit serving 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
- Medium: Require 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.

5.2.3 Water Shortage Level 3: Significant Shortage

A Water Shortage Level 3: Significant Shortage is implemented when demand must be reduced up to 30 percent to match the projected supply shortfall. During a Significant Shortage, a new set of mandatory water conservation practices takes effect, in addition to all permanent water waste prohibitions, Level 1, and Level 2 conservation practices. A list of the Water Shortage Level 3 shortage response actions appears below.

- Low: Prohibit watering outdoor landscapes during and up to 48 hours after measurable precipitation
- Low: Prohibit washing cars at home.
- Medium: Reduce indoor water use to 55 gallons per capita per day (gpcd)
- Medium: Reduce outdoor irrigation percent to 50% of evapotranspiration
- Medium: Prohibit irrigating ornamental turf on public street medians with potable water.
- Medium: 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 using non-potable water.
- Medium: Prohibit the filling, or draining and re-filling of swimming pools, unless required by Contra Costa County Health Services for commercial and community swimming pools for public health and safety reasons.

5.2.4 Water Shortage Level 4: Severe Shortage

Water Shortage Level 4: Severe Shortage is implemented when demand must be reduced up to 40 percent to match the projected supply shortfall. During a Severe Shortage, a new set of mandatory water conservation practices takes effect, in addition to all permanent water waste prohibitions and additional restriction practices that became mandatory under Water Shortage Level 1, Level 2, and Level 3. The list of shortage response action options available for Water Shortage Level 4 appears below.

- Low: Prohibit the use of potable water in a fountain or decorative water feature, unless the water is part of a recirculating system.
- Medium: Prohibit the use of potable water to irrigate the landscapes outside newly constructed homes or buildings.
- Medium: Reduce indoor water use to 50 gpcd.
- Medium: Prohibit watering of turf (except for parks and schools).

5.2.5 Water Shortage Level 5: Critical Shortage

Water Shortage Level 5: Critical Shortage is implemented when a water shortage emergency requires that demand be reduced up to 50 percent to ensure sufficient supplies. During a Critical Shortage a new set of mandatory conservation measures takes effect, in addition to all permanent water waste prohibitions are summarized below. Mandatory conservation practices imposed under Water Shortage Levels 1 through 4 remain in effect.

- Low: Require ice-pigging of new water mains, or alternate method approved by DWD, in lieu of traditional flushing methods for cleaning new water mains
- Medium: Reduce indoor water use to 45 gpcd.
- Medium: Require those installing new water mains to capture flushing water in holding tanks or other similar facility for non-potable reuse.

5.2.6 Water Shortage Level 6: Extreme Shortage

Water Shortage Level 6: Extreme Shortage is implemented when a water shortage emergency requires that demand be reduced greater than 50 percent to ensure sufficient supplies. During an Extreme Shortage, a new set of mandatory conservation measures takes effect, in addition to all permanent water waste prohibitions. Mandatory conservation practices that were imposed Levels 1 through 5 remain in effect. A list of available shortage response actions under Water Shortage Level 6 are summarized below.

- Low: Prohibit the planting of new lawns
- Low: Prohibit the use of water from the District's fire hydrants for other than fire protection purposes.
- Medium: Prohibit excessive water use in any one day.

- Medium: No outdoor irrigation allowed.
- Medium: Reduce indoor water use to 40 gpcd.
- High: Require the installation of water saving low flow devices in existing structures.

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Section 6

Determining Water Shortage Reductions

6.1 Monitoring and Reporting

DWD monitors how effective the combination of shortage response actions in each water shortage level is with meters. DWD meters both water supplies entering the distribution system and water consumed by individual customers. DWD can compare this meter data with water use in prior months and during non-drought years to determine if it is achieving specific percentage goals for water consumption associated with the drought response levels. If the goals are not being met, DWD can implement additional shortage response actions.

DWD is also required to report total monthly production to the State Water Resources Control Board in compliance with Governor Brown's Executive Order B-29-15 and more recently B-36-15.

6.2 Reevaluation and Improvement Procedures

Reevaluation and improvement procedures are used to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed. The WSCP will be re-evaluated at least every five years in coordination with the UWMP update or at the discretion of Board. An evaluation on the effectiveness of the water shortage response actions on demand levels will be conducted following the future implementation of the WSCP. The evaluation will compare the expected percent demand reduction against actual reductions, and shortage response actions in the WSCP will be revised appropriately. DWD will also assess the effectiveness of the communication plan so that it may be modified as appropriate in the future.

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Section 7

Revenue and Expenditure Impacts

When customers reduce their water consumption in response to prolonged water shortages or emergency situations, revenues for DWD's General Fund decline as a result. However, a portion of the Fund's expenditures are fixed regardless of how much water customers use. To remedy this imbalance of revenues versus expenditures, DWD may have to increase rates and/or reduce or defer capital improvements. This is necessary to meet contractual requirements of bond holders related to outstanding debt, as DWD must maintain a minimum debt service coverage ratio. Maintaining targeted debt service ratios is critical to obtaining future funding for capital projects needed to improve water system reliability and mitigate against future droughts and emergencies.

7.1 Water Rate Structure

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 \$3.40 per unit; and
- Each unit used over 8 units is billed at \$3.80 per unit.

7.2 Use of Financial Reserves

DWD currently has monies in a contingency reserve to balance the budget if revenues fall up to 50 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 10-year low.

7.3 Potential Revenue Reductions & Expenses Associated with Activated Shortage Response Actions

Potential revenue reductions and expenses associated with activated shortage response actions are varied depending on shortage response action. As mentioned above, customer reductions in water use consumption will result in declining revenues during a shortage. Increased enforcement and auditing of existing water waste prohibitions could increase operational expenditures. In addition, increase outreach efforts may require more staff time and resources.

Table 7-1 summarizes hypothetical reductions in revenue due to 10, 20, 30, 40, and 50 percent cutbacks in water use based on 2020 water sales and costs. 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, which is conservative. Up to a 50 percent reduction in water sales will be covered by the District's reserves.

Table 7-1 Revenue Impacts from Reduction in Demand

Percent Reduction	Normal Operations	10%	20%	30%	40%	50%
Estimate Revenue	\$13,000,000	\$11,700,000	\$10,400,000	\$9,100,000	\$7,800,000	\$6,500,000
Estimated Expenditures	\$13,000,000	\$12,550,000	\$12,100,000	\$11,650,000	\$11,200,000	\$10,750,000
Net Revenue (Deficit)	--	(\$850,000)	(\$1,700,000)	(\$2,550,000)	(\$3,400,000)	(\$4,250,000)
Reserve Funds Available	\$4,500,000	\$4,500,000	\$4,500,000	\$4,500,000	\$4,500,000	\$4,500,000
Estimated Deficiency	--	--	--	--	--	--

7.4 Measures to Mitigate Revenue and Expenditure Impacts During Shortages

It is not anticipated that reductions this severe will occur, as discussed in Section 2.1. 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);
- Water shortage rates ; or
- Short-term borrowing.

It is important to note that the above discussion on revenue impacts is hypothetical. As discussed in Section 8, the likelihood of a catastrophic long-term significant reduction in DWD supply is very low. According to CCWD's January 2021 supply analysis, any supply deficiency that may occur over a five-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 five years.

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 a portion of lost revenue.

DWD's penalty revenues would be increased because 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 more than their allocation and the charge for such excess as may be established by the Board. 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.

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Section 8

Catastrophic Supply Interruption Planning

A catastrophic supply interruption occurs when a disaster suddenly disrupts all or a large portion of the water available to meet the region's needs. The UWMP Act requires agencies to identify actions they will take if there is a catastrophic supply interruption, specifically including interruptions from a power outage, earthquake, or other non-drought related emergency. DWD has developed plans for catastrophic supply interruptions that include a regional power outage, earthquake, or other disaster.

Catastrophic supply interruption events are considered when determining DWD's overall water supply shortage as defined by the water shortage levels identified in Section 5. DWD does not designate a specific catastrophic supply interruption water shortage level with its own shortage response actions. Rather, the resulting shortage of a catastrophic supply interruption would contribute to DWD's total projected shortage in any given year. Shortage response actions associated with the determined water shortage level will help guide DWD's response to catastrophic supply interruptions.

8.1 Emergency Planning

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. Attachment C contains a copy of the existing Emergency Plan (currently being updated by the District). 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 Contra Costa 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 Randall-Bold 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 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-health and human safety 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.

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 million gallons per day 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.

8.2 Seismic Risks

DWD lies in a seismically active zone between the Pacific and North American tectonic plates. Earthquakes in the San Francisco Bay area (including DWD service area) are typically from strain energy accumulating in the region from movement of the Pacific and North American tectonic plates. Additionally, there are several local faults near the DWD service area with potential for ground shaking, especially Hayward, Calaveras North, Concord-Green Valley, Mount Diablo, and Greenville faults. The impacts of a seismic disruption are amplified due to the entire system being in an area with soils that have medium to high liquefaction potential. In a major earthquake event, the underlying soils supporting the DWD's above ground facilities and buried pipelines could shift both horizontally and vertically, causing failures at locations that experience stresses that exceed their strength. That can result in upheaval or settlement of structures, cracks or fractures in rigid support systems, separation at pipe joints, deflection at pipe joints, failures of anchors and attachments, etc.

DWD's design standards provide appurtenances and material selection that allows for some settlement potential. If properly designed for movement, the structures and pipelines can absorb the induced stresses without damage. However, in liquefying soils (where the groundwater table is high and the soil is saturated), the stresses are greatly magnified as the soil temporarily loses supporting consolidated strength effectively transforming to a liquid-like state.

DWD's pipeline designs follows the draft 2005 Seismic Guidelines for Water Pipelines drafted by the American Lifelines Alliance in a public-private partnership with the Federal Emergency Management Agency and American Society of Civil Engineers. It was not updated due to lack of funding, but it still represents a cost-effective approach to designing pipelines in highly susceptible areas for seismic and liquefaction events. Since the draft was published, new pipeline products are now offered that are designed the pipe joints to allow for significant movement in multiple locations.

In addition to seismic events, other catastrophic events that could impact DWD's buried assets include sea level rise and levee failures. The National Oceanic and Atmospheric Administration modeling projects a 1.4-meter (m) sea level rise above 1990 levels by 2100 with intermediate greenhouse gas emissions. A 100-year rainstorm event combined with a 1.4 m sea level rise scenario present the greatest risk to levees in the Delta. Under these conditions most of the Delta islands would experience levee failure and inundation, causing major property damage and water quality issues throughout the Delta.

Pipes located in saturated soil due to sea water inundation are at a higher risk of corrosion than pipes in dry soil. Any portion of pipeline in a transition zone where the surrounding condition differs from other portions along the pipeline have high corrosion potential to metallic pipe. Since this is a slowly emerging threat, DWD's system is not currently equipped to address the threat. However, DWD can monitor for sea-level rise and consider protective measures during water system planning updates and work with other agencies and groups that are attempting to establish a long-term policy or approach to addressing the threat before the impacts are felt widely.

8.3 Hazard Mitigation Planning

Local agencies in Contra Costa County completed a planning process to assess risks and vulnerabilities to impacts from natural hazards, developed a mitigation strategy, and created a plan for implementing, evaluating, and revising this strategy. In 2019, DWD adopted the District's jurisdictional annex of part 2, part 3, and the appendices of Volume II of the Contra Costa County Hazard Mitigation Plan (CCCHMP). The CCCHMP identified critical DWD assets and potential natural hazards, ranked those hazards, and provided an action plan to prioritize and address those hazards.

DWD will use the adopted and approved portion of the CCCHMP to guide pre and post disaster mitigation of the hazards identified and will coordinate the strategies identified in the CCCHMP with other planning programs and mechanisms under its jurisdictional authority.

Section 9

Legal Authorities

Under California law, including CWC Chapters 3.3 and 3.5 of Division 1, Parts 2.55 and 2.6 of Division 6, Division 13, and Article X, Section 2 of the California Constitution, DWD is authorized to implement the water shortage actions outlined in this WSCP. In all water shortage cases, shortage response actions to be implemented will be at the discretion of DWD and will be based on an assessment of the supply shortage, customer response, and need for demand reductions. When necessary, DWD shall declare a water shortage emergency, in accordance with CWC Chapter 3 (commencing with Section 350) of Division 1.

It is noted that upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 [commencing with Section 8550] of Division 1 of Title 2 of the Government Code) based on drought conditions, the state will defer to implementation of locally adopted water shortage contingency plans to the extent practicable. DWD will coordinate with the City of Oakley and Contra Costa County for possible proclamation of a local emergency, as necessary, under California Government Code, California Emergency Services Act (Article 2, Section 8558).

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Section 10

Communication Protocol

DWD's communication protocol includes the various channels DWD will utilize to convey critical messages regarding water shortage allocations and voluntary and mandatory actions. Public outreach programs can help increase awareness of water shortages, while customer services and workshops can encourage ratepayers to actively participate in demand reducing strategies. A strong communication plan will educate DWD ratepayers, including local leaders and the business community, on the water supply situation; what actions are proposed; what the intended achievements are; and how these actions are to be implemented. While specific types of messaging are deployed at various shortage response levels, how these messages are conveyed to the public are described per this communication protocol. The communication protocol will be in place prior to a water supply shortage and be initiated in Level 1 (Minor Shortage). Activation of the communication protocol will continue through all subsequent water shortage levels. At times, specific communities may require specialized outreach. DWD will ensure outreach efforts are reaching key audiences as needed.

It is important to communicate to customers the following when urgent conservation is needed:

- Specific actions needed to save water;
- How much water needs to be saved and for how long;
- Why water needs to be saved; and
- What DWD is doing to correct the supply problem or address the situation.

10.1 Coordination

To communicate effectively, avoid confusion, and maintain credibility, DWD will work in close coordination with the City of Oakley, Contra Costa County, and CCWD. During droughts or other times of limited supply, the frequency and extent of coordination will increase to ensure outreach tactics are consistent with the changing needs of DWD and its ratepayers. DWD will seek opportunities to leverage external resources to complement its own outreach.

10.2 Communication Objectives

Communication objectives during the various water shortage levels of the WSCP include the following:

- Motivate water users to quickly increase conservation in ways that are consistent with any voluntary or mandatory actions called for at the current level of the WSCP.
- Raise awareness and understanding of the drought, regulatory, or other condition affecting water supplies and the need for increased conservation.

- Minimize confusion and maintain credibility of water agencies and conservation messages with an appropriate tone that avoids a “cry wolf” perception and non-compliance backlash.
- Make water users feel appreciated for existing accomplishments in improving their water-use efficiency, and for supporting regional and local investments in water supply reliability.
- Educate regional civic and business leaders, elected officials and the public that DWD has greatly improved its water supply reliability.
- Prepare customers for any potential escalation (or de-escalation) of the WSCP based on trending supply conditions.
- Ensure all stakeholders believe they are being treated fairly in relationship to other stakeholders.
- Maintain communication effectiveness by soliciting or monitoring feedback from key stakeholders and the public to update or adapt messages or communication tools.
- Exit WSCP implementation having demonstrated the effectiveness and value of conservation actions and water supply reliability investments in minimizing impacts to the customers' economy and quality of life.

10.3 Communication Protocol for Current or Predicted Shortage and Triggered or Anticipated to Be Triggered Shortage Response Actions

A current or predicted shortage, as determined by the Annual Assessment, will be communicated to the public upon submittal of the Annual Assessment Report in June of any given year. The General Manager may, with the concurrence of the Board, order that the appropriate phase of water conservation be implemented. The order would be made by public proclamation and be published one time only in a daily newspaper of general circulation and would become effective immediately upon such publication. The prohibited water uses for each phase shall take effect with the first full billing period commencing on or after the effective date of the public proclamation by the General Manager.

10.4 Protocol and Strategies for Relevant Communications

To reduce water use consumption during any water shortage level, DWD will increase its public education and outreach efforts to build awareness of needed actions from the public. In addition, DWD's outreach campaign will be regularly revised to reflect current conditions. Key communication strategies and associated water shortage level implementation are listed below. Communication strategies build from previous levels are assumed to be built upon as the Shortage Level increases.

- Announce status change to key stakeholders and the public (all Water Shortage Levels).
- Provide regular update to stakeholders and the media on conditions (all Water Shortage Levels).

- Conduct issue briefings with City of Oakley elected officials and other key civic and business leaders (Water Shortage Level 2)
- Promote available water assistance resources for vulnerable populations; specialized outreach for affected industries (Water Shortage Levels 3 and 4).
- Conduct specialized outreach to reduce discretionary outdoor use while minimizing landscape damage (Water Shortage Levels 3 and 4).
- Suspend promotion of long-term water use efficiency programs/tools to focus on imminent needs (Water Shortages Levels 5 and 6).

DWD has various mean of implementing its communication strategies. DWD may update its website, monthly e-newsletters, and social media platforms to reflect conditions and convey key messaging. DWD may also coordinate with the City of Oakley and hold news conferences or other events to announce or explain changes in conditions.

In the event of a catastrophic supply interruption that requires water use to be quickly prioritized for or limited to essential public health and safety needs, DWD will immediately deploy appropriate strategies from Water Shortage Levels 1 through 6. In addition, outreach messaging will reflect emergency conditions and the need to focus on health and public safety. DWD may also consider potential joint news release/new events with City of Oakley officials and Contra Costa County public health officials or incident commanders to announce conditions and explain needed action. Finally, DWD will ensure ongoing coordination with emergency response services with daily advisories or alerts as needed.

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Attachment A

Regulation No. 8, Water-Use Efficiency

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DIABLO WATER DISTRICT

REGULATION NO. 8

WATER-USE EFFICIENCY

Section I. Purpose

- A. 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 of water.

Section II. Prevention of Waste or Unreasonable Use

- A. Waste and unreasonable use is defined as the following activities:
1. Creating landscape irrigation runoff and overspray.
 2. Irrigating between the hours of 8am to 8pm.
 3. Irrigating within 48 hours of measurable rainfall (0.25" or more in a 24-hour period).
 4. Running water fountains and features that are non-recirculating.
 5. Using a hose without an automatic shut-off nozzle.
 6. Failing to fix a water leak on the customer side of the water meter.
- B. To ensure equitable treatment of all customers, the District will take a positive and proactive customer service approach to help customer resolve waste and unreasonable use actions.

- C. The District shall have the right, following written notice, to impose upon any water service connection or landlord such conditions as the District determines to be necessary to prevent unreasonable use or waste of water. After each notification, the customer will be given 7 days to remedy the issue.

First written notification: Courtesy Letter - no penalty

Second written notification: Courtesy Letter - no penalty

Third written notification: \$25 penalty

Fourth written notification: \$50 penalty

Fifth written notification: \$100 penalty and installation of flow restrictor

Further actions: All users of water furnished by the District are required to take all reasonable actions to prevent the waste of water up to and including the termination of water service.

Section III. Indoor Water Efficiency Standards

- A. The State of California has established regulatory requirements that the District must achieve regarding indoor water-use efficiency. The following are regulated limits that the District must achieve across all customers.

- January 1, 2021: 55 gallons per capita per day
- January 1, 2025: 52.5 gallon per capita per day
- January 1, 2030: 50 gallons per capita per day

All existing users of water furnished by the District are required to take all reasonable action to upgrade fixtures to current water-use efficiency standards. All new connections shall have fixtures that meet the efficiency requirements of this section, in addition to being an EPA WaterSense labeled product. In the event that CalGreen increases the water efficiency requirements per fixture, the new increased efficiency standard will supersede those listed here.

1. Residential:

- (a) Showerhead: not to exceed 1.8 gpm.
- (b) Lavatory faucet: not to exceed 1.2 gpm.
- (c) Kitchen faucet: not to exceed 1.8 gpm.
- (d) Toilets: not to exceed 1.28 gallons per flush.
- (e) Clothes washer: energy star certified.
- (f) Dishwasher: energy star certified.

2. Non-Residential:

- (g) Showerhead: not to exceed 1.8 gpm.
- (h) Lavatory faucet: not to exceed 0.4 gpm.
- (i) Kitchen faucet: not to exceed 1.5 gpm.
- (j) Metering faucets: not to exceed 0.2 gallons per cycle.
- (k) Gravity toilets: not to exceed 1.2 gallons per flush.
- (l) Flushometer style toilets: not to exceed 1.28 gallons per flush.

(m) Clothes washer: energy star certified.

(n) Dishwasher: energy star certified.

Section IV. Outdoor Water Efficiency Standards

A. The State of California is creating regulatory requirements that the District must achieve regarding outdoor water-use efficiency. The following are outdoor water-use limits for potable water customers.

1. Existing Landscapes Water Budgets:

Calculation in gallons:

Evapotranspiration x Adjustment Factor x irrigated area x 0.62

(a) Adjustment Factor January 1, 2021: 70% of
Evapotranspiration for irrigated areas.

(b) Adjustment Factor January 1, 2025: 65% of
Evapotranspiration for irrigated areas.

(c) Adjustment Factor January 1, 2030: 60% of
Evapotranspiration for irrigated areas.

2. New Landscapes:

(d) Plant selection, irrigation design, water budgets, inspections, etc. shall be in compliance with the most recent version of the State's Model Water Efficient Landscape Ordinance (MWELo).

(e) In addition to the MWELo and in support of eliminating non-functional turf, the District further

prohibits the installation of new turf in areas less than 10ft in width or length.

- (f) District will coordinate with the Association of California Water Agencies, and other trade organizations, to work with the California State Legislature to implement a state-wide, non-functional turf prohibition.
- (g) Further, the District will also work with local land use authorities to implement a non-functional turf prohibition.
- (h) All eligible products must be EPA WaterSense labeled.
- (i) The District reserves the right to be the local agency responsible for the implementation of MWELO.

Section V. Water-Use Efficiency Measures of the District

- A. The District shall pursue at all times a customer focused program for the efficient use of water.
- B. All water use shall be metered.
- C. Perform annual water audits compliant with state regulations.
- D. Coordinate with local school districts in providing educational information and/or programs on efficient water use.

- E. Make available at the District's office, website, social media, public library and other public places, educational materials regarding water-use efficiency and related benefits.

Section VI. Water Rates

- A. To encourage water-use efficiency and further discourage the waste and unreasonable use of water, the District shall utilize a cost-based, Prop 218 compliant water rate structure.

Attachment B

Regulation No. 9, Drought Emergency Regulation

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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.

Attachment C

Emergency Plan of Diablo Water District

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**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 Materials (24-hour emergency).....925-335-3232

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.

PHONE NUMBERS

1.	<u>Employee</u>	<u>Phone</u>	<u>Pager</u>	<u>Cell Phone</u>
	Christine Belleci			925-437-9704
	LaVonda Castor.....	925-625-3637		
	Alfonso Espinoza.....	925-206-0966.....		925-575-4386
	Jorge Gonzalez	925-625-4339.....		925-383-2610
	Jennifer Lester	925-420-5561.....		925-584-1785
	Michael Lira.....	707-580-1189.....		925-260-6915
	Nacho Mendoza.....			925-383-2712
	Luis Romero	925-234-8227.....		925-575-4390
	Rebecca Rugroden.....			925-301-7899
	Wayne Weaver.....	925-634-8229.....		925-766-8387
	Mike Yeraka	925-256-9314.....	925-281-4126.....	925-726-9422
2.	<u>CDM Smith, Inc.</u>			925-933-2900
	Bill Brick			925-296-8005
	John Mariano			925-296-8037
	<u>After Hours Home Numbers for CDM Smith, Inc.</u>			
	Scott Dittman.....			925-229-1484
	John Mariano			415-587-1086
3.	<u>State Health Department</u>			510-540-2158
	Betty Graham.....		Work	510-620-3454
			Evening.....	510-501-6856
	Eric Swing		Work	510-620-3604
			Evening.....	510-390-3544

4. Contra Costa County Environmental Health Department925-646-5225
(After hours phone sheriff (925-228-8282) and ask for the Health Officer on-call)
5. Contra Costa County Sheriff(24 Hours).....925-228-8282
6. Contra Costa County Office of Emergency Services925-646-4461
After Hours (ask for alert duty officer) (24 Hours)925-228-5000
Fax925-646-1120

State of California Office of Emergency Services..... (24 Hours).....916-845-8911
Toll Free800-852-7550
Coastal Region Office of Emergency Services510-286-0895
7. Contra Costa County Community Awareness & Emergency Response (CAER)
Hazardous Materials925-335-3200
.....925-335-3232
8. Contra Costa Water District925-688-8000
Contra Costa Water District(24 Hours).....925-688-8374
Antioch Operations Center925-679-3500
Randall-Bold Plant925-625-6600

(NOTE: Call the control numbers in above order so that CCWD can follow their procedure for contacting their personnel. The numbers listed below are to be used only if there is no response from the above numbers.)

Pat Panus, Superintendent, R-B.....Work 925-625-6601 or 925-688-8094
Home925-706-2911
Pager925-210-5694
Cell Phone.....925-525-2566

John Parsons, Supervisor, R-BWork925-625-6603
Home925-753-1840
Cell Phone.....925-525-2520
Fax925-625-4658

Bollman Plant(24 Hours).....925-688-8090

9. East Contra Costa Fire Protection District925-634-3400
Emergency911
Dispatch (business).....925-625-9276

10. Radio Stations
KCBS 740 AM415-765-4000
KGO 810 AM415-954-8142
11. TV Stations
KQVR - Sacramento.....800-374-8813
KQVR - Stockton209-466-6985
KGO – San Francisco...415-954-7926
12. East County Times.....925-757-2525
Keith Bennetts, Asst. City Editor, Fax925-706-2305
Keith Bennetts, Asst. City Editor, Phone925-779-7136
13. Rain For Rent.....(24 Hours).....925-679-2803
14. Contra Costa County Sheriff925-228-8282
15. AT&T phone repair service.....800-332-1321
16. PG&E800-743-5000
Roxanne Cruz650-291-9894
John Little925-674-6424

VARIOUS PHONE NUMBERS

1. East Contra Costa Fire Protection District925-634-3400
Dispatch925-625-9276
Emergency 911
2. Oakley Police.....(24 Hours).....925-646-2441
Business – non emergency925-625-8855
3. Sheriff, Contra Costa County925-228-8282
4. PG&E.....800-743-5000
5. Burlington Northern Santa Fe Railroad
Stop Train Emergency Number **1-800-285-2164**
Santa Fe Police Communications 1-800-333-2383

GENERATOR UNIT AND WAUKESHA ENGINES

Telestar(Business).....	925-671-2888
Brinderson -	925-640-7115
Beasley Electric	925-634-4671
Answering Service will call their On-Call list	
California Electric (Generator & transfer switch)	510-655-6100
Bedford Electric (Larry Bedford)	925-679-9724
Cell.....	925-980-6325

AUTOCON, VARIABLE FREQUENCY DRIVE AND COMPUTER

1. Telestar (A. C. Controls)925-671-2888
Bob MarstonCell Phone.....925-963-6665
June Johnson.....Home707-426-0932
2. Fluidiqs707-258-8400

DISTRIBUTION LINES AND VALVES

1. J. W. Backhoe 925-634-7905
Jim WilliamsCell Phone..... 925-980-8243
Bobby WilliamsCell Phone..... 925-595-4176

PUMPS, SHAFTS, GEAR DRIVE AND MOTORS

Repairing pumps and right angle gear drive.

- | | | |
|-----|--|--------------|
| 1. | Pump Repair Service - San Francisco | 415-467-2150 |
| | Dave Archer..... Home | 510-552-3279 |
| | Wayne Archer..... Home | 510-581-7103 |
| 4. | Martell Water Systems | 800-498-4282 |
| | | 925-432-4282 |
| 5. | Vincent Electric Motor Co. | 510-639-4500 |
| | After Hours – use message machine and follow prompts | |
| | Tom Marvin..... | 510-639-4500 |
| | Fax | 510-639-4488 |
| 6. | Dahl-Beck Electric | 510-237-2325 |
| | Dan Neal..... Cell Phone..... | 510-812-0443 |
| | Helmet Schlitzer | 510-385-1293 |
| | Jesse Vazquez..... Cell Phone..... | 510-385-0712 |
| 7. | California Electric | 510-655-6100 |
| | Answering Service Pages On-Call list – 24 Hours | |
| | Ed Howe..... Cell Phone..... | 510-773-0193 |
| 8. | Unico Replacement Parts, Inc. | 707-745-4540 |
| 9. | Layne Christensen Company..... | 530-662-2825 |
| 10. | Bay Valve (Limit Torque) | 925-228-0665 |
| | Ed Kumisca..... Home | 925-933-5057 |
| | Pager | 925-382-4309 |
| | Joe Contant..... Home | 925-228-3179 |
| | Cell..... | 925-382-9698 |
| 11. | Charbonneau Industries | 510-651-5194 |
| | Ken Butler..... Home | 510-656-6190 |
| | Cell Phone | 510-579-2377 |

T & D SUPPLIES

- | | | |
|----|---|--------------|
| 1. | Ferguson (Westburne) | 925-432-7375 |
| 2. | Siemens (Supplies)Giselle Dougherty | 408-935-6293 |
| | After Hours..... | 800-435-3223 |
| 3. | Roberts & Brune | 925-679-8005 |
| | Fax | 925-679-8465 |

AFTER HOURS EMERGENCY NUMBERS

- | | | |
|----|---------------------------------------|--------------|
| | Jeff Franks | 925-250-6615 |
| | Richie Aliotti | 925-382-1973 |
| 4. | BCS(Blending Facility Chemicals)..... | 650-363-1661 |
| 5. | Hill Brothers Chemical Co. | 800-257-1920 |

OFFICE VENDOR PHONE NUMBERS

ACS, IBM AS400 Application Software 1-800-354-9300

CRYSTAL COMMUNICATION RADIOS..... 510-895-9500

DELTA DIABLO JANITORIAL, 925-779-1828
Sam Moore

EAGLE BUSINESS FORMS 925-831-1058
Jeff Manning

FERTADO HEATING & AIR.....925-754-2730

HENSEN'S PLUMBING.....925-634-0272

IBM Customer # 1) 6664491 2) 4476374 Maintenance. 1-800-426-7378

LINCO SERVICES925-516-2679

SENSUS METERS

New Systems (Hand-Helds and Route Manager).....800-638-3748 (Opt. 2 Help Line)

J & J ANSWERING SERVICE925-779-2734

Fax Work... 757-7227
..... Home ...754-4735

SEIMENSGiselle Dougherty.....408-935-6293

After Hours.....800-435-3223

WATER SUPPLY IDENTIFICATION

- 1) Stand-by Well - Diablo Water District – Corporation Yard, 3990 Main Street, Oakley; 1,000 g.p.m. No back up power.
- 2) Antioch Inter-tie Connection – Highway 4/Wilbur Avenue; 1,000 g.p.m.
- 3) Antioch Inter-Tie Connection – Highway 160; 1,000 g.p.m.
- 4) Antioch Inter-Tie Connection – End of Bridgehead Road; 1,000 g.p.m.
- 5) Glen Park Blending Facility – 2201 Laurel Road; 1,700 gpm.
- 6) Stand-By Well – Diablo Water District – South Park, Summer Lakes Rd; 1,000 g.p.m.
- 7) Stonecreek Well – Diablo Water District – 5637 Sellers Avenue;

Revised: 12-31-12

Per DOHS request letter of 5-4-05

DELTA MUTUAL WATER COMPANY

BOARD OF DIRECTORS

Jim Hopwood, President 925-684-3324
..... Fax: 925-684-3322

George Leydecker, Vice President 925-684-3513

Tom Thomas, Secretary/Treasurer 925-684-2837

David Croy, Director 925-684-2126
..... Fax: 925-684-9724

Steve Whitehead, Director 925-698-0888

VENDORS

1. DeJesus Pump & Well Drilling 925-634-3392
2. Hensen's Plumbing 925-634-0272
3. J.W. Backhoe (c) 925-980-8243
..... (h) 925-634-7905

