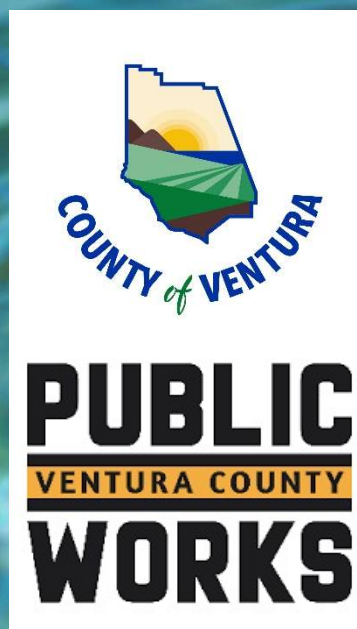


**2020 Urban Water
Management Plan for
Ventura County Waterworks
District No. 1**



Prepared for:
Ventura County Waterworks District
No. 1

Prepared by:
Stantec Consulting Services Inc.



June 14, 2021

Ventura County Waterworks District No. 1 2020 Urban Water Management Plan

June 2021

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Abbreviations

AB	Assembly Bill
AC	Acre
Act	Urban Water Management Planning Act
AF	Acre Feet
AFY	Acre Feet per Year
AMI	Area Median Income
ASR	Aquifer Storage and Recovery
AVG	Average
AWWA	American Water Works Association
Bay-Delta	Sacramento-San Joaquin Bay-Delta
BMP	Best Management Practices
Calleguas	Calleguas Municipal Water District
CASGEM	California Statewide Groundwater Elevation Monitoring
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFS	Cubic Feet Per Second
CII	Commercial, Institutional, and Industrial
CIMIS	California Irrigation Management Information System
CPUC	California Public Utilities Commission
CRA	Colorado River Aqueduct
CSWRB	California State Water Resources Control Board
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
CY	Calendar Year
Delta	San Joaquin River Delta
DMM	Demand Management Measure
DRA	Drought Reliability Assessment
DU	Dwelling Unit
DWR	Department of Water Resources
EGMA	Epworth Gravels Management Area
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPM	Emergency Procedures Manual
ESA	Endangered Species Act
ET	Evapotranspiration
Eto	Evapotranspiration from a Standardized Grass Surface
FCGMA	Fox Canyon Groundwater Management Agency
FY	Fiscal Year
GIS	Geographic Information System
Gpcd	Gallons Per Capita Per Day
GPM	Gallons Per Minute
GSA	Groundwater Sustainability Agency

GSP	Groundwater Sustainability Plan
HCD	Housing and Community Development
HOA	Home Owners Association
ICS	Intentionally Created Surplus
IID	Imperial Irrigation District
IN	Inches
IRP	Integrated Resources Plan
KML	Keyhole Markup Language
LAFCO	Local Agency Formation Commission
MAF	Million Acre Feet
MCL	Maximum Contaminant Level
Metropolitan	Metropolitan Water District of Southern California
mgd	Million Gallons per Day
mg/L	Milligrams per Liter
MOU	Memorandum of Understanding
MWD	Metropolitan Water District of Southern California
MWEO	Model Water Efficient Landscape Ordinance
MWRf	Moorpark Water Reclamation Facility
PWA	Public Works Agency
RDM	Robust Decision-Making
RHNA	Regional Housing Needs Allocation
RUWMP	Regional Urban Water Management Plan
SB	California Senate Bill
SCAG	Southern California Association of Governments
SGMA	Sustainable Groundwater Management Act
SMP	Salinity Management Pipeline
SoCal	Southern California
Supplier	Urban Water Supplier
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	Thousand Acre Feet
TDS	Total Dissolved Solids
TEA	Temporary Extraction Allocation
USBR	U.S. Bureau of Reclamation
UWMP	Urban Water Management Plan
VCWPD	Ventura County Watershed Protection District
VCWWD	Ventura County Waterworks District
WQCP	Water Quality Control Plan
WSA	Water Service Area
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan
WSDM	Water Surplus and Drought Management
WUCA	Water Utility Climate Alliance
WUEdata	Water Use Efficiency Data

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

UWMP Introduction and Lay Description

June 14, 2021

Chapter 1 UWMP Introduction and Lay Description

1.1 Background and Purpose

Ventura County Waterworks District No. 1 Moorpark (VCWWD No. 1 or District) has prepared the 2020 update of its Urban Water Management Plan (UWMP) to fulfill the requirements outlined in the California Urban Water Management Planning Act (Act) and the Water Conservation Bill of 2009. The purpose of this 2020 UWMP is to provide the District, its partner agencies, and the public with an updated status and long-term water plan, including:

- Water deliveries and uses
- Water supply sources
- Efficient water uses
- Demand management measures
- Water shortage contingency planning

This UWMP was prepared in compliance with the Act, also known as Senate Bill X7-7 (SB X7-7), under the authorization of the District.

Notification letters sent to agencies are provided in Appendix A.

Public notice for the 2020 UWMP public hearing is provided in Appendix B.

The Adoption Resolution passed by VCWWD No. 1's Board of Directors on June 22, 2021, as well as the agenda for the hearing, are provided in Appendix C.

This 2020 UWMP supersedes Ventura County Waterworks District No. 1 (Moorpark) 2015 Agricultural Water Management Plan.

1.2 UWMP Update and The California Water Code

This report has been prepared in compliance with California Water Code (CWC or Water Code) Sections 10610 through 10656 and Section 10608 of the Act, which were added by Statute 1983, Chapter 1009, and became effective on January 1, 1984. This Act requires that "every urban water supplier shall prepare and adopt an urban water management plan" (Water Code § 10620(a)). An "urban water supplier" is defined as a supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually (Water Code § 10617).

These plans must be filed with the California Department of Water Resources (DWR) every five years. The 2020 plans must be submitted to DWR by July 1, 2021. The focus of UWMPs include:

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

UWMP Introduction and Lay Description

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- Examining in detail current and future water use
- Analyzing potable and non-potable water supplies
- Analyzing water supply reliability
- Preparing a Drought Risk Assessment
- Developing a Water Shortage Contingency Plan

For 2020, the plans must also:

- Report progress toward meeting the targeted 20 percent reduction in per-capita (per-person) urban water consumption by the year 2020, and
- Discuss the use and planned use of recycled water

1.2.1 Changes in the Act Since 2015

Since 2015, several amendments have been made to the Act. The following is a summary of the significant changes in the Act that have occurred from 2015 to the present:

- Drought Risk Assessment and the Five Consecutive Dry-Year Water Reliability Assessment: suppliers are now required to assess water supply reliability over a five-year period from 2021 to 2025 to examine water supply reliability for five consecutive dry years (modified from a “multiyear” time period used in dry-year water reliability planning).
- Seismic Risk Analysis: suppliers are now required to address the seismic risk to their water system facilities with an analysis of the risk and mitigation strategies.
- Energy Use Information: suppliers are now required to include readily obtainable information on estimated amounts of energy for water system.
- Water Loss Reporting for Five Years: suppliers are required to include the past five years of water loss audit reports.
- Water Shortage Contingency Plan (WSCP): includes new prescriptive elements to enhance previous requirements of WSCPs.
- Consistency with Groundwater Sustainability Plans: suppliers are now required to be consistent with Groundwater Sustainability Plans completed by relevant Groundwater Sustainability Agencies.
- Lay Description: suppliers are now required to include a lay description of the UWMP’s conclusions regarding water service reliability, challenges ahead and strategies for managing reliability risks.

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- Water Use Efficiency and Conservation: VCWWD No. 1 must demonstrate actual water use, as compared to the previously established 2020 target.

1.2.2 Water Conservation Act of 2009

In addition to changes to the Act, the California State Legislature passed Senate Bill 7 as part of the Seventh Extraordinary Session, referred to as SB X7-7, on November 10, 2009, which became effective February 3, 2010. The State of California is required to reduce urban per capita water use by 20 percent by the year 2020. Each retail supplier must determine its baseline water as well as its target water use for the year 2020. This plan will report the progress of this goal in Chapter 5.

1.3 Lay Description

Ventura County Waterworks District No. 1's 2020 UWMP has been prepared in compliance with the CWC as noted previously. Per CWC Section 10630.5, the UWMP must include a lay description to include the fundamental determination of the UWMP. This plan provides a detailed look at VCWWD No. 1's water system current and future water use, water sources, demand management measures, evaluation of multiple consecutive drought years, as part of the Drought Risk Assessment, and the preparation of a Water Shortage Contingency Plan (WSCP).

1.3.1 VCWWD No. 1's Water System, Supply, and Demand

The District's water comes from three sources: imported water, groundwater, and reclaimed water. Imported water is the primary source of supply, bringing in 71 percent of all supply. The imported water comes from Metropolitan Water District (MWD) of Southern California through Calleguas Municipal Water District (Calleguas), a local wholesaler. The second largest supply (approximately 20 percent) comes from local groundwater production from District owned wells. Finally, reclaimed water brings in approximately 9 percent of all supply, through the Moorpark Water Reclamation Facility (MWRF). The MWRF is owned and operated by the District and has been in operation since 2003.

The District's potable water distribution system consists of 10 booster pumping stations, 20 pressure-reducing stations, 4 active production wells, 2 inactive wells (Wells 96 and 97), 10 imported water turnouts, 18 reservoirs and approximately 175 miles of distribution and transmission pipelines.

To help meet future demands, the District is planning two water projects. The Stockton Reservoir project will increase water storage capacity by constructing an additional reservoir along with infrastructure, and the Moorpark Desalter Project aims to lower the dependence on imported water.

Over the next twenty years, supply is predicted to continue to meet the demands of all water users in the District's service area (including single and multi-family residential, commercial, industrial, institutional, agricultural, and others). For more details on VCWWD No. 1's water system, supply, and demand, see Chapters 3-6.

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1.3.2 Water Service Reliability and SBx7-7 2020 Target

Per Senate Bill x7-7 (SBx7-7), the 2010 UWMP required retail water suppliers to develop baseline daily per capita water use, a minimum baseline daily per capita water use, and target daily per capita water use for 2015 and 2020. The District met their 2020 target, which was to not exceed 194 gpcd of water usage, with an actual 2020 usage of 173 gpcd. See Chapter 5 for more details.

It is the goal of VCWWD No. 1 to deliver a reliable and high-quality water supply for customers, even during dry periods. Based on conservative water supply and demand assumptions over the next 25 years, in combination with conservation of non-essential demand during certain dry years, VCWWD No.1 successfully achieves this goal. The basis of the water supply and demand assessment is summarized in Chapter 7.

1.3.3 Water Shortage Contingency Plan

As part of its UWMP, Water Code Section 10632 requires Suppliers to prepare and adopt a Water Shortage Contingency Plan (WSCP). The WSCP draws upon lessons learned from the 2012-2016 drought, California's driest period on record. Chapter 8 provides a summary of the WSCP and the detailed WSCP is included in Appendix H.

1.3.4 Demand Management Measures

Chapter 9 describes VCWWD No. 1's demand management measures: 1) metering, 2) public education and outreach, and 3) water conservation program coordination and staffing support. The District ensures and provides support for all efforts of water conservation through education and outreach.

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

Plan Preparation

June 14, 2021

Chapter 2 Plan Preparation

2.1 Plan Preparation

This chapter provides insight on how the 2020 UWMP was developed, including the basis for preparing the plan, units of measure and year calculation used, and coordination and outreach.

2.2 Basis for Preparing A Plan

Urban water suppliers with 3,000 or more service connections or supplying more than 3,000 acre-feet of water per year (AFY) are required to prepare an UWMP every five years in compliance with the Water Code 10617. 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.

2.2.1 Public Water Systems

VCWWD No. 1 is a public water supplier that meets the definition of an urban water supplier with 11,426 municipal water service connections (as of the end of fiscal year 2020) and a total 10,019 acre-feet (AF) of water supplied to customers in their water service area in fiscal year 2020. See Table 2-1 for Public Water Systems.

Submittal Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 (AF)
1	Ventura County Waterworks District No. 1	11,426	10,019
TOTAL		11,426	10,019

2.3 Regional Planning

The 2020 UWMP for VCWWD No. 1 has been prepared as an individual reporting plan that only covers the service area of VCWWD No. 1.

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

2.4 Individual or Regional Planning and Compliance

VCWWD No. 1 has developed an Individual UWMP (as opposed to a Regional UWMP) that reports solely on its service area; addresses all requirements of the CWC; and notifies and coordinates with appropriate regional agencies and constituents. VCWWD No. 1 is not a member of a Regional UWMP, nor is it a member of a Regional Alliance. See Table 2-2 for Plan Identification.

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

2.5 Fiscal or Calendar Year and Units of Measure

This section delineates the year in which all data is set, as well as the units of measure to be carried through the entirety of the plan. VCWWD No. 1 is a water retailer (as opposed to a water wholesaler).

2.5.1 Fiscal or Calendar Year

The 2020 UWMP for VCWWD No. 1 is prepared on a fiscal year basis.

2.5.2 Reporting Complete 2020 Data

The 2020 UWMP for VCWWD No. 1 includes complete water use and planning data for fiscal year 2020.

2.5.3 Units of Measure

Volumes reported in this 2020 UWMP are in acre-feet (AF) and are consistent throughout the plan. Table 2-3 shows the parameters under which the 2020 UWMP was prepared.

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
<input type="checkbox"/>	Supplier is a wholesaler
<input checked="" type="checkbox"/>	Supplier is a retailer
Fiscal or Calendar Year (select one)	
<input type="checkbox"/>	UWMP Tables are in calendar years
<input checked="" type="checkbox"/>	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
07/01	
Units of measure used in UWMP (select from drop down)	
Unit	AF

2.6 Coordination and Outreach

This section summarizes coordination and outreach efforts related to the development of this UWMP. Table 2-4 summarizes organizations contacted in the development of this UWMP and their associated level of participation. Copies of outreach correspondence can be found in Appendix A.

2.6.1 Wholesale and Retail Coordination

Per CWC §10631(j), an urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan.

VCWWD No. 1 has provided Calleguas Municipal Water District (Calleguas), the District's water wholesaler, with projected water use in accordance with CWC §10631 and has relied upon water supply information provided by Calleguas, as well as Metropolitan Water District of Southern California (Metropolitan), Calleguas' water wholesaler, in fulfilling its 2020 UWMP. See Table 2-4 for Water Supplier Information Exchange.

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

DRAFT Submittal Table 2-4 Retail: Water Supplier Information Exchange	
The retail Supplier will inform the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.	
Wholesale Water Supplier Name	
Calleguas Municipal Water District	

2.6.2 Coordination with Other Agencies and the Community

Development of the 2020 UWMP was led by the VCWWD No. 1 staff. District staff provided notification to the City of Moorpark and County of Ventura Planning Departments for development of the Plan and the County Clerk for the adoption of the Plan. Stantec used the City of Moorpark Planning Department published information for land use and population information. VCWWD No. 1 staff was responsible for distribution of the Plan with assistance from Stantec.

The intent of this Plan is to focus on specific issues unique to the VCWWD No. 1 water service area (WSA). While some regional UWMP issues are introduced in this Plan, more detailed regional information is presented in Metropolitan's and Calleguas' 2020 UWMPs.

To assist VCWWD No. 1 staff in preparation of their 2020 UWMP, Stantec attended the 2020 UWMP Workshop on the 10th of February 2021 for "Preparation, Adoption and Submittal" that was facilitated by DWR.

Table 2-A lists the entities that the District or Stantec coordinated with to develop the District's 2020 UWMP. The City of Moorpark was notified of the District's preparation of an updated UWMP and public hearing for consideration of adoption of the UWMP at least 60 days prior to the public hearing.

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

Submittal Table 2-A: VCWWD No. 1 Coordination and Public Involvement					
Entities	Coordination and Public Involvement Actions				
	Used Agency Data as Information Resource	Sent and/or Available To: Copy of Draft UWMP	Commented on Draft UWMP	Sent Notice of Public Hearing	Attended Public Hearing
County Planning Department	Yes	Yes			
City of Moorpark Planning Department	Yes	Yes			
Calleguas Municipal Water District	Yes	Yes			
Fox Canyon Groundwater Management Agency	Yes	Yes			
Metropolitan Water District of Southern California	Yes	Yes			
General Public	N/A	Yes			

The District also utilized information from the Final Calleguas 2020 Regional UWMP, the Metropolitan 2020 Final UWMP, and the “*Guidebook to Assist Urban Water Suppliers to Prepare a 2020 Urban Water Management Plan*” prepared by DWR in preparing the VCWWD No. 1 2020 UWMP. This UWMP details the specifics as they relate to the VCWWD No. 1 water service area and will refer to Metropolitan, Calleguas, Fox Canyon Groundwater Management Agency, and other agencies throughout.

The District’s water supply planning considers the programs of local and regional water agencies. The County of Ventura Water and Sanitation Department staff manages and administers activities, projects, and programs to optimize the District’s water supply.

The UWMP is intended to serve as a general, flexible, and open-ended document that is updated every five years (or more often if necessary) to reflect changes in the District’s water supply trends, and conservation and water use efficiency policies. The District’s 2020 UWMP, along with other regional 2020 UWMPs and other County of Ventura (County) planning documents, will be used by VCWWD No. 1 staff to guide the water use and management efforts through the year 2020. The 2020 UWMP will require an update in 2025.

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

2.6.3 Notice to City and Counties

See Table 2-A above for City and County notice information.

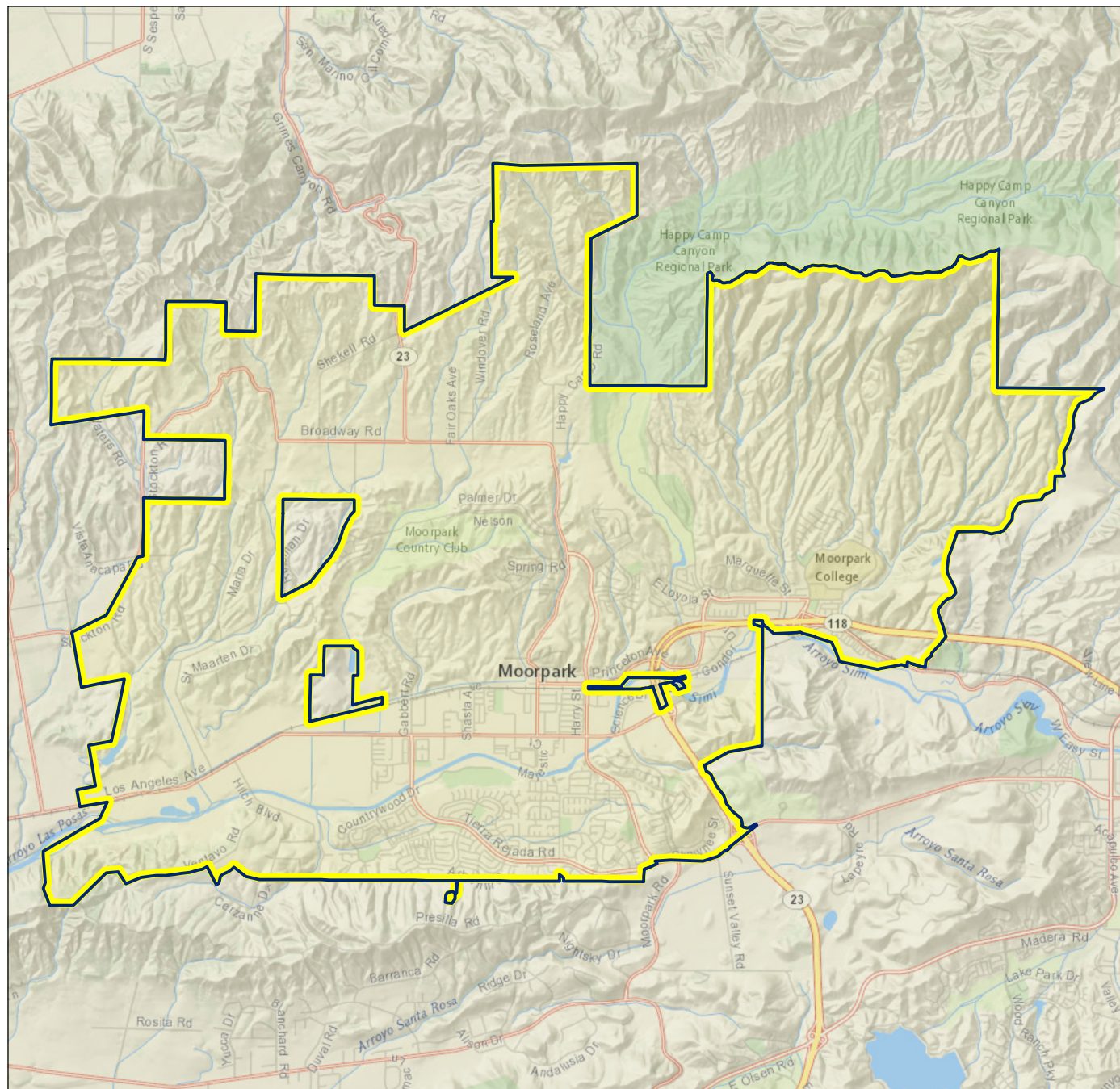
2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

Chapter 3 System Description

3.1 General Description

VCWWD No. 1 is part of the Utility Services Division of the County of Ventura Public Works Agency Water and Sanitation Department and is responsible for the administration, billing, customer service, operation, maintenance, design, inspection, and construction of potable water and sanitation services in the areas of Moorpark, CA, and surrounding portion of Ventura County. The District is a retail water utility provider and is governed by the Ventura County Board of Supervisors and are represented by the Citizens' Advisory Committee for policy recommendations. The District was formed on November 22, 1921 and serves approximately 39,000 residents through 11,426 service connections, including 11,270 residential and commercial service connections and 156 agricultural service connections. The District encompasses approximately 33.7 square miles (21,567 acres) and consists of the City of Moorpark, which accounts for 12.8 square miles (38%) of the District's service area, and contiguous unincorporated areas (62%) in eastern Ventura County. The City of Moorpark is approximately five miles west of the City of Simi Valley and five miles north of the City of Thousand Oaks. A vicinity map of the District's water service area is shown on Figure 3-1.

V:\1840\active\184031382\gis\184031382\VCWWD_ServiceAreas_LtrL_20210507.mxd Revised: 2021-05-07 By: cwhelan



Stantec



Ventura County Waterworks
District No.1 Service Area



0 7,000 Feet
(At original document size of 8.5x11)

Notes

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: LVMWD (2020)
3. Background: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA,



Project Location: Ventura County, CA
Prepared by CNW on 2020-12-01
TR by ABC on 2020-12-01
IR Review by ABC on 2012-12-01

Client/Project: 184031382 REVA
Client: Ventura County Waterworks District No.1
Project: Ventura County Waterworks District No.1 2020 UWMP
Report: 2020 Urban Water Management Plan

Figure No.
3-1

DRAFT

Title
**Ventura County Waterworks District
No.1 Service Area**

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

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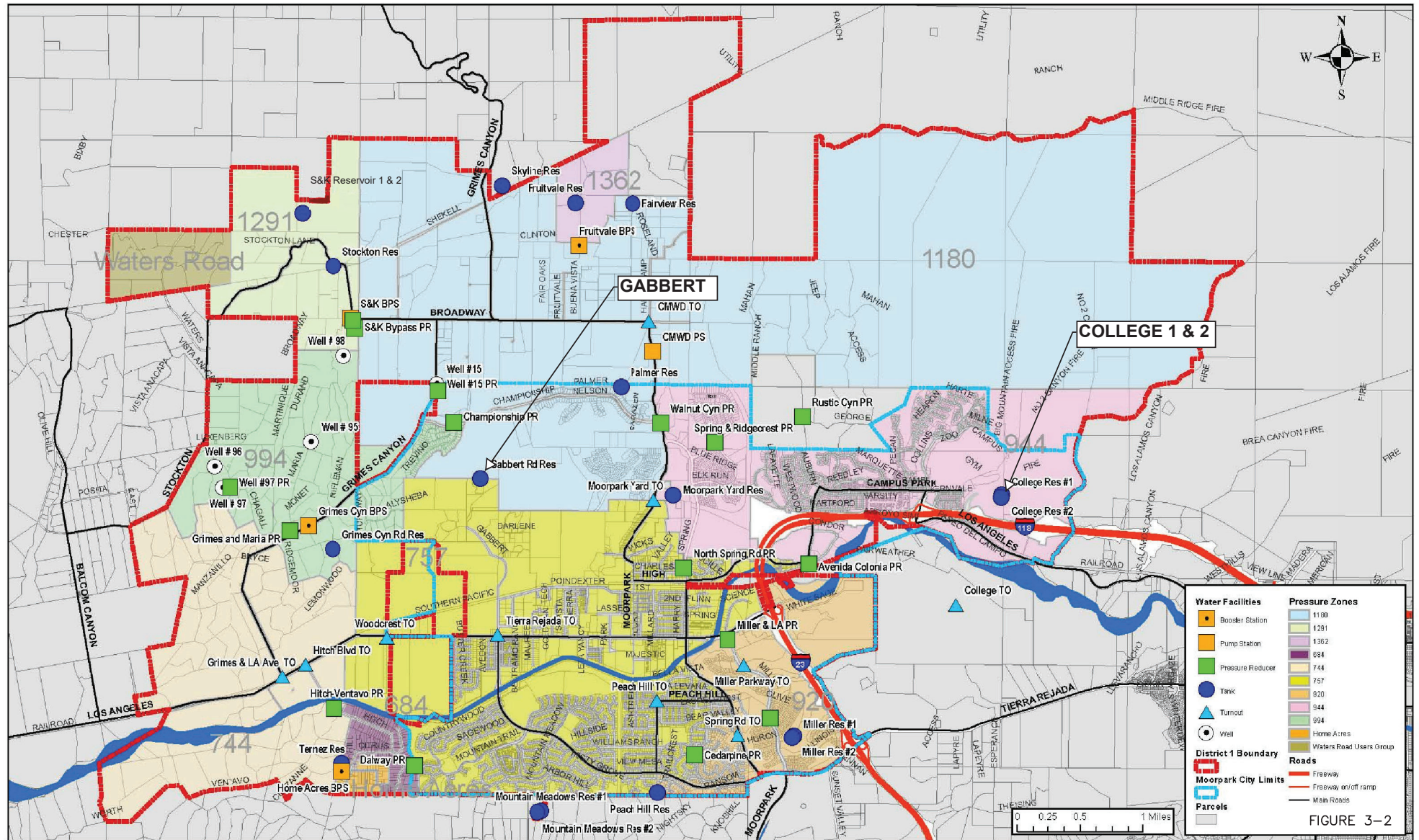
3.1.1 Water System Description

VCWWD No. 1 receives its water from three sources. Approximately 71 percent of its supply is imported potable water from the Metropolitan Water District (MWD) of Southern California through Calleguas Municipal Water District (Calleguas), a local wholesaler. The imported water is primarily State Water Project (SWP) water from the Sacramento-San Joaquin River Delta (Delta) in Northern California that has been treated at MWD's Joseph Jensen Filtration Plant. The second largest supply (approximately 20 percent) comes from local groundwater production from District owned wells. Since 2003, the District has been utilizing the Moorpark Water Reclamation Facility (MWRF) for additional supply (for irrigation only and accounts for approximately 9 percent of overall water supply). The MWRF is owned and operated by the District. Approximately 1.5 mgd of effluent is treated to tertiary levels to meet California Code of Regulations Title 22 requirements and delivered for irrigation uses.

The District's potable water distribution system consists of 10 booster pumping stations, 20 pressure-reducing stations, 4 active production wells, 2 inactive wells (Wells 96 and 97), 10 imported water turnouts, 18 reservoirs and approximately 175 miles of distribution and transmission pipelines. Figure 3-2 shows the location of all VCWWD No. 1 system facilities and respective pressure zones.

In addition to the MWRF, the District's recycled water distribution system consists of 7 pumps, 2 tanks (one recycled water tank, one 5-thousand-gallon hydropneumatic tank), and approximately 8 miles of distribution main pipelines.

Ventura County Waterworks District 1 Moorpark Water System Facility Map



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VCWWD No. 1 pumps groundwater from the East Las Posas Subbasin (ELP) via the four active wells owned and operated by the District. The ELPGB is managed and protected by Fox Canyon Groundwater Management Agency (FCGMA), an independent special district separate from the County of Ventura and any city government and is responsible for managing and protecting both confined and unconfined aquifers within its boundaries. The groundwater is chlorinated at the well sites and two wells are treated for high iron and manganese before being pumped into the potable water distribution system (Well Nos. 15 and 20).

The MWRf was originally constructed as a secondary treatment plant in 1965. In September 2003, pursuant to permit R4-2002-2008, the recycled water distribution system and tertiary treatment production facilities were completed and began supplying Title 22 recycled water for irrigation. Presently, there are thirteen (13) active recycled water customers, including the plant itself. See Section 6 for a summary of recycled water customers.

3.1.2 Recently Completed Projects

3.1.2.1 Coating and Repair – District 1 Reservoirs (5)

This project includes the coating and repair of 5 reservoirs in District one including: Moorpark Yard Reservoir, S&K Reservoir No. 2, Gabbert Reservoir, Fairview Reservoir, and Palmer Reservoir. The project was completed at the end of 2020 and all reservoirs have been put back into service.

3.1.3 Facilities in Construction

3.1.3.1 Coating and Repair – College 1 & 2 and Gabbert Reservoirs

This project includes the coating and repair of Gabbert Reservoir, College Reservoir 1, and College Reservoir 2.

3.1.4 Projects in Design

3.1.4.1 Stockton Reservoir – VCWWD No. 1 (Moorpark)

Currently in the design phase, the Stockton Reservoir project will replace the existing 0.5-million-gallon storage reservoir. The existing reservoir is in the 994-pressure zone in the northwest portion of the District and is at the end of its useful service life. The new Stockton Reservoir will be a 1.0-million-gallon steel tank located in the vicinity of the existing tank.

3.1.4.2 Moorpark Desalter – VCWWD No. 1 (Moorpark)

To reduce dependence on imported water, the District is in the planning phases of the Moorpark Desalter Project. This multi-million-dollar project will include constructing production water wells in the shallow aquifer and extracting the brackish groundwater, which is high in salts and dissolved solids. Once extracted, this groundwater will be filtered through a membrane treatment process and disinfected, resulting in treated water which will meet State drinking water quality standards. The treated water will then be delivered to the District's water distribution system. The brine waste from the treatment process

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

will then be discharged into the Calleguas Municipal Water District's Salinity Management Pipeline to be transported to the Pacific Ocean.

3.2 Service Area Boundary Maps

The District boundary encompasses the City of Moorpark and surrounding agricultural lands in the valley area of the Arroyo Las Posas and State Highway 118 to the east and the Santa Clara River Valley to the north as shown in Figure 3-1: VCWWD No. 1 Water .

3.3 Service Area Climate and Terrain

3.3.1 Service Area Climate

The District's service area resides in a "Subtropical-Mediterranean" climate. This is described as a semi-arid environment with mild winters, warm summers, and light to moderate rainfall. The climate for the District is consistent with coastal Southern California. The region lies in the semi-permanent, high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

The average monthly maximum temperature of 83°F occurs in August, and the average monthly minimum temperature of 41 °F occurs in January and December. The average annual maximum temperature for the service area is 78°F and the average annual minimum temperature is 49 °F.

The District's service area receives approximately 11 inches of rainfall annually with most of annual rainfall occurring in the months of December through March using approved data from Ventura County Watershed Protection District (VCWPD) precipitation stations 126A and 508 located in the City of Moorpark for water years 2009 through 2015. The average annual evapotranspiration of the area is around 55.1 inches¹. For comparison, data collected by the VCWPD for nearby Evapotranspiration Station #227 at Lake Bard, 3 miles from the District's service area, shows an average evapotranspiration of 65.23 inches². See Table 3-A for a summary of climate characteristics for the District's service area.

¹ California Irrigation Management Information Systems https://cimis.water.ca.gov/App_Themes/images/etozonemap.jpg

² VCWPD Hydrologic Data Server <https://www.vcwatershed.net/hydrodata/php/getstation.php?siteid=227>

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Submittal Table 3-A: VCWWD No. 1 - Climate Characteristics													
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Avg. or Total
Avg. Max Temp. (°F)	69	69	71	74	75	77	81	83	82	79	74	69	75.3 (avg)
Avg. Min. Temp. (°F)	41	43	44	46	50	53	57	56	55	50	44	41	48.3 (avg)
Avg. Rainfall (in)	1.49	1.98	1.67	0.55	0.17	0.03	0.11	0.01	0.10	0.78	0.98	3.06	10.93 (avg)
Standard Monthly ETo (in)	2.17	2.80	4.03	5.10	5.89	6.60	7.44	6.82	5.70	4.03	2.70	1.86	55.14 (total)

Sources:

Temperatures: <http://www.weather.com/weather/monthly//USCA0728:1:US>

Precipitation for Moorpark Station 126A: <http://vcwatershed.net/hydrodata/php/getstation.php?siteid=126A#top>

Precipitation for Moorpark Station 508: <http://vcwatershed.net/hydrodata/php/getstation.php?siteid=508#top>

Evapotranspiration: CIMIS Reference Evapotranspiration Zones – Zone 9 for Moorpark area:

https://cimis.water.ca.gov/App_Themes/images/etozonemap.jpg

3.3.2 Service Area Terrain and Soils

The District is within the VCWPD. Most of the area is within a four-mile-wide valley and encompasses portions of hills to the north and south with ranges in elevation from 400 feet to 1,700 feet.

Within the valley, the soils in this area consist mainly of silty and sandy loam, which were formed from weathered alluvium, derived primarily from weathered sedimentary bedrock deposited as alluvial fans. The hills mostly have moderate to steep slopes, ranging from 30 to 50 percent, and consist mainly of gravelly loam formed from weathered sandstone.

3.4 Service Area Population and Demographics

3.4.1 Service Area Population

The District encompasses approximately 33.7 square miles (21,567 acres) and consists of the City of Moorpark, which accounts for 12.8 square miles (38%) of the District's water service area, and contiguous unincorporated areas (62%) in eastern Ventura County. The DWR Population Tool developed for use on the 2020 UWMP estimates a water agency's water service area population by creating a trend line of the persons per connection from 2000 to 2010 and that trend continues through the year 2020 based on residential (single-family and multi-family) water service connections for the years 1990, 2000, and 2010 along with the water service area boundary in electronic keyhole markup language (KML) format. The Population Tool worksheets are included in Appendix D for reference.

Southern California Association of Government (SCAG) adopted Connect SoCal (2020-2045 Regional Transportation Plan/Sustainable Communities Strategy) on September 3, 2020. Connect SoCal's

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Demographics & Growth Forecast technical report projects growth in employment population, and households at regional, county, jurisdictional, and sub-jurisdictional levels. Population projections for the City of Moorpark were used as the basis for projecting future District WSA populations through 2045, which are shown in Table 3-1. The annual growth of the City of Moorpark between 2016 and 2045 from the technical report was used starting with the 2020 DWR population estimate of 36,625 to project the population until 2045. The population is projected to increase 13.0% to 41,400 in the year 2045 relative to the 2020 population.

Submittal Table 3-1 Retail: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045(opt)
	36,625	37,600	38,500	39,500	40,400	41,400

3.4.2 Other Social, Economic, and Demographic Factors

Most of the District's service area population is in the City of Moorpark. Current and future demographics, housing development, and land use in the City will have a significant impact on water use and water system planning for the District.

3.4.3 Economic and Housing Factors

According to the Southern California Association of Governments (SCAG) Local Profile for the City of Moorpark for 2018 (developed in 2019), there was a total of 11,346 housing units, with 8,303 (73.2%) single-detached houses, 1,518 (13.4%) were single-attached; 205 (1.8%) were 2- to 4-unit residences; 1,177 were five-plus units (10.4%); and 143 were mobile homes (1.2%).

According to 2019 census data, the City of Moorpark has a population of 36,375 persons. The poverty level is 4.2%, which is 7.6% lower than the national average. The median household income of Moorpark is \$104,839 (\$44,335 per capita), compared to the national average of \$60,293 (\$32,621 per capita) in 2018 dollars. In 2019, the City of Moorpark had an average of 3.3 persons per dwelling unit³.

Based on the City's Housing Element, the City of Moorpark's housing needs for the period of 2014 to 2021 is 1,164 units mainly for the population at moderate to above moderate-income levels.

Based on DWRs Disadvantaged Community Mapping Tool, there are some areas designated as disadvantaged communities within the District boundary.

³ https://scag.ca.gov/sites/main/files/file-attachments/moorpark_localprofile.pdf?1606015228

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3.4.4 Demographics, Race, and Ethnicity

Based on the City's Housing Element 2014 to 2021, the Cities demographics of race and ethnicity composition differ from Ventura County in that there are lower percentages of City residents that are Hispanic/Latino and racial/ethnic minorities. The 2019 census data reflects this composition trend. See Table 3-C for a summary of the race and ethnicity composition of the City from current census data.

Submittal Table 3-C: City of Moorpark 2019 Census Bureau Data	
Race and Ethnicity	Percentage
White alone, not Hispanic or Latino	54.2%
Hispanic or Latino alone	31.8
Asian American alone	8.1%
Black or African American alone	1.6%
American Indian and Alaskan Native alone	1.0%
Native Hawaiian and Other Pacific Islander alone	0.7%

3.5 Land Uses within Service Area

Land Use in the area reflects the Land Use Element of the City of Moorpark and County of Ventura Land Use Program. The District encompasses approximately 33.7 square miles (21,567 acres). The City of Moorpark accounts for 12.8 square miles (38%) of the District's service area. The contiguous unincorporated areas of Ventura County that are located within the service area account for 62% and are predominantly undeveloped agricultural areas and are zoned for agriculture and open space.

3.5.1 Land Use within the City of Moorpark

The City of Moorpark's General Plan shows the significant land uses by area are Open Space 2, which allows for 1 dwelling unit (DU) per acre (1 DU/AC), and rural low density residential (1 DU/5 AC). There is also significant medium-low density (2 DU/AC) and medium density residential (4/DU AC) located in the northeast in the vicinity of Campus Park Drive and in the south in the vicinity of Tierra Rejada Road with lower and higher density residential intermixed. The majority of commercial, industrial, and public/institutional land uses are located in the vicinity of Los Angeles Avenue in the center of the City.

The City has a number of specific plans in various stages of completion. Specific plans approved or submitted in the City are as follows:

3.5.1.1 Carlsberg Specific Plan

This approved and largely constructed specific plan is located on approximately 500 acres in the southeastern portion of the City, bounded generally by the Arroyo Simi and New Los Angeles Avenue on the north, Spring Road on the west, Tierra Rejada Road on the south, and State Highway 23 on the east.

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The plan includes 534 single-family homes on both sides of Miller Parkway, north of Tierra Rejada Road. The northerly portion of the site, along New Los Angeles Avenue, consists of 40 acres for commercial use, which includes the 29-acre Moorpark Marketplace. South of the Moorpark Marketplace, there are 33 acres for office/business park use, currently being developed as the Patriot Commerce Center. There is also a 29-acre school and seven acres for institutional use.

3.5.1.2 Hitch Ranch - Specific Plan One

The proposed Specific Plan is in the Environmental Analysis phase and includes the development of 755 residential units (261 single-family and 494 multi-family), a six-acre public park, associated roadways and infrastructure, as well as expansive open space, detention basins, and manufactured slopes on approximately 277 acres. Hitch Ranch is generally located north of Poindexter Avenue, west of Casey Road, and extending approximately 1,700 feet to the west of Gabbert Road.

3.5.1.3 Moorpark Highlands - Specific Plan Two

The approved Moorpark Highlands Specific Plan includes up to 450 single-family residential lots and one multi-family neighborhood proposed for up to 102 units, on property located north of Charles Street, along the extension of Spring Road, east of Walnut Canyon Road (SR-23), and west of Happy Camp Canyon Regional Park. The project permanently preserves 169 acres of land in a Habitat Conservation Plan, providing open space that enhances the habitat within 94 of those acres, and provides multi-use trails for access to these areas by the public. The project also includes a 7-acre park and reserves land for State Route 23 and North Hills Parkway, a potential bypass route for California State Route 118, as well as an extension of Spring Road to Walnut Canyon Road.

3.5.1.4 Downtown Specific Plan

The Downtown Specific Plan area is located in the center of the city limits and contains High Street as its core. Also included in the specific plan area are other parts of Old Town Moorpark, including the residential neighborhood north of High Street, the railroad right of way south of High Street and the properties along Moorpark Avenue north of Los Angeles Avenue. The Downtown Specific Plan furthers the vision for the overall revitalization of the downtown and implements design standards, guidelines, and a strategy for business attraction and development of the city-owned parcels in the downtown.

3.5.2 Land Use within the County of Ventura

Service areas outside of the City of Moorpark within the County of Ventura have been designated as Agricultural and Open Space to 2040.

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Chapter 4 Customer Water Use/Water Use Characterization

This chapter describes and quantifies the District's past, current, and future potable and non-potable water use projections through at least the year 2040 (2045 is optional), to the extent that records are available, and are summarized in Table 4-3. Characterizing and analyzing records available provides a realistic prediction of future water use based upon the District's past and current water use, combined with considerations of anticipated growth, new regulations, changing climate conditions, and trends in customer water use behaviors. Examining each water use sector for a variety of factors, then aggregating the information into a comprehensive projection of customer water use, becomes the foundation for integration with the District's water supplies (Chapter 6) to assess long-term water system reliability (Chapter 7).

4.1 Non-Potable Versus Potable Water Use

The primary source of water supply for the District has been imported MWD water purchased through the local wholesale agency, Calleguas. The imported water, which is primarily SWP water, is treated at Metropolitan's Joseph Jensen Filtration Plant to drinking (potable) water standards. In 2020, the District supplied a total of 7,112 AF from imported water purchased from Calleguas, which was 71 percent of the total water supply including recycled water.

The District produces groundwater from the East Las Posas Groundwater Basin via four wells owned and operated by the District with a total system capacity of approximately 2,260 gpm (3,645 AFY). The groundwater is chlorinated at the well sites before being pumped into the potable water distribution system. In 2020, the District supplied a total of 1,966 AF from groundwater production, which was 20 percent of the total water supply including recycled water.

The District's Moorpark Water Reclamation Facility (MWRF) produces Title 22 recycled water via tertiary treatment facilities. The plant produced 966 AF of recycled water in 2020, which was 9% of the total water supply and sold approximately 941 AF to its thirteen customers. The plant currently has a secondary treatment capacity of 5.0 mgd (5,600 AFY) and a tertiary capacity of 3.0 mgd (3,360 AFY) but is only permitted up to 1.5 mgd (1,680 AFY). It is projected that recycled water use in the District will increase to 2,200 AFY by 2040.

The District is planning the Moorpark Desalter Project, which is a groundwater production and treatment system that is estimated to provide up to 5,000 AFY of potable water for customers in the District's water service area. As part of the project, 10 to 18 extraction wells would be constructed to extract poor-quality, brackish groundwater from a shallow aquifer in the South Las Posas Basin and pump the groundwater via a new transmission pipeline to the proposed Moorpark Desalter Plant, where the water will be treated to drinking water standards through a membrane treatment process that includes filters, low-pressure reverse osmosis, disinfection, and chemical water conditioning.

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4.2 Past, Current, and Projected Water Use by Sector

This section discusses past, current, and projected water use in five-year increments for a period of at least 20 years, and ideally to year 2045. The water uses shall be identified by sector and based upon information provided by the District.

4.2.1 Water Use Sectors Listed in Water Code

To characterize the District's water use customers, the following sections define the water sectors listed in the CWC §10631(d). The order of the sectors follows the order found in the Water Code. If a sector is not applicable or no information is available, it will be indicated as such in the respective sector and shall be excluded from the analyses. Additional sectors or subdivisions of these sectors shall be included in Section 4.2.2 to allow the analysis of unique conditions that may apply to certain sectors or subsectors not listed in the Water Code.

Of the 11,426 District water service connections in 2020, 10,415 were residential connections (91 percent). Of the 10,415 residential connections, 10,255 were single family (98 percent) and 160 were multi-family (2 percent). The remaining water service connections include commercial, industrial, institutional/government, and agricultural sectors (9 percent).

4.2.2 Water Use Sectors in Addition to Those Listed in Water Code

4.2.2.1 Other

Construction and Fire Services

Construction services include water uses such as dust suppression, washing equipment, and others. Water used for fire services include line flushing and firefighting.

4.2.3 Past Water Use

Past water use for potable water service connections by customer sector are shown in Table 4-A.

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

Submittal Table 4-A Retail: Use for Potable and Non-Potable Water - Historical					
Use Type <i>(Add additional rows as needed)</i>	Additional Description <i>(as needed)</i>	Historical Water Use <i>Report To the Extent that Records are Available</i>			
<u><i>Drop down list</i></u> <u><i>May select each use multiple times</i></u> <u><i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i></u>		2016	2017	2018	2019
Single Family		4,423	4,748	5,430	4,960
Multi-Family		392	413	416	385
Commercial		978	964	931	734
Industrial		119	112	120	110
Institutional/Governmental		515	543	717	599
Agricultural irrigation		1,905	1,758	2,077	1,723
Other	Construction and Fire Services	60	65	57	52
TOTAL		8,392	8,603	9,748	8,563
NOTES: Does not include losses					

Total potable water use including unaccounted-for (lost) water has been decreasing since the 2015 UWMP update. Since 2016 the potable demands have fluctuated up to 14 percent in 2018. Per capita water use has also decreased since 2015 and is discussed further in Chapter 5. Residential water use is approximately 45 percent of the total system water use over the past five years.

4.2.4 Distribution System Water Losses

Distribution system water losses are the physical potable water losses from the pressurized water distribution system and facilities up to the point of delivery to the customer. Water losses are calculated using the American Water Works Association Method (Title 23 California Code of Regulations [CCR] Section 638.1 et seq.). This is the sum of American Water Works Association Method real losses and apparent losses.

Per CWC §10631(d)(3), distribution system water losses for each of the five years preceding the plan update must be reported in accordance with the rules adopted pursuant to CWC §10608.34. These water losses are listed in Table 4-4 and all relevant AWWA reporting worksheets can be found in Appendix E:

Though a Water Loss Standard has not been adopted to date, the water loss audits are done internally each year for VCWWD No. 1 per CWC and are checked by a third party. For the past five years, VCWWD

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

No. 1 has received an average score of 68 out of 100 on its AWWA reporting worksheets and the losses have averaged approximately 3 percent of total water usage.

Projected water losses, reported in five-year increments for at least 20 years, must also be included to effectively evaluate water service reliability, and it is one of the water use sectors that requires reporting per Water Code Section 10631(d)(1). Projected water losses are summarized in Section 4.2.6.

4.2.5 Current Water Use

Existing water service connections by customer sector are shown in Table 4-1. Residential (single-family plus multi-family) connections accounted for approximately 60 percent of total water service connections in 2020 (excludes water losses).

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable Water - Actual			
Use Type	2020 Actual		
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume*
Add additional rows as needed			
Single Family		Drinking Water	5,087
Multi-Family		Drinking Water	399
Commercial		Drinking Water	708
Industrial		Drinking Water	105
Institutional/Governmental		Drinking Water	563
Agricultural irrigation		Drinking Water	1,997
Losses		Drinking Water	120
Other Potable	Construction/Fire Water	Drinking Water	278
TOTAL			9,257

4.2.6 Projected Water Use

In accordance with Water Code Section 10635(a), suppliers shall include 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.

2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

4.2.6.1 20-Year Planning Horizon

Suppliers shall report their projected water use, in five-year increments through 2040. Suppliers are encouraged to project through 2045 to bridge the data gap between plan cycle years. Additionally, in accordance with Water Code Section 10603(d)(2), suppliers shall report their projections for each of the water use sectors identified in Section 4.2.1. Projected water uses are reported in Table 4-2.

Submittal Table 4-2 Retail: Use for Potable and Non-Potable Water - Projected						
Use Type	Additional Description (as needed)	Projected Water Use* <i>Report To the Extent that Records are Available</i>				
<u>Drop down list</u> May select each use multiple times These are the only Use Types that will be recognized by the WUdata online submittal tool		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Single Family		5,222	5,347	5,486	5,611	5,750
Multi-Family		410	419	430	440	451
Commercial		727	744	763	781	800
Industrial		107	110	113	115	118
Institutional/Governmental		578	591	607	621	636
Agricultural irrigation		2,050	2,099	2,154	2,203	2,257
Losses		123	126	129	132	136
Other Potable		285	292	300	307	314
TOTAL		9,502	9,728	9,982	10,210	10,462

4.2.6.2 Water Year Types

For the water service reliability assessment, suppliers shall characterize the normal water use for estimating normal water supply reliability and reliability in the event of a single dry year. Suppliers may choose to characterize the normal year water use in whatever manner makes the best planning sense. Both normal year and single dry year data is reported in Tables 7-1, 7-2, and 7-3. Suppliers will also have to characterize a five-consecutive-year drought which is addressed in section 4.2.7.

4.2.6.3 Codes and Other Considerations Used in Projections

If available, water use projections shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified. Suppliers shall cite the code, standards, ordinances, or transportation and land use plans used in making the projections. Suppliers shall also indicate whether the water use projections considered savings from these (reported in Table 4-5).

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As shown in Table 4-B, through the implementation of District water conservation ordinances and measures discussed in Chapter 9, total per-capita District water use (including agricultural water use) has significantly dropped from 2005 to 2020.

Table 4-B: Historical Per-Capita Water Use				
	2005	2010	2015	2020
Total Per Capita (gpcd)	314.4	257.4	178.1	173

The actual per capita water use of 173 gpcd is less than the 2020 SBx7-7 targets of 195 gpcd calculated for the District in this UWMP as detailed in Chapter 5. Total per capita water use has remained steady from 2015 to 2020 and is expected to remain constant as many of the ordinances and measures discussed in Chapter 9 provided for permanent reductions in per-capita District water use.

4.2.7 Characteristic Five-Year Water Use

Water Code Section 10635(b) is a new requirement for the 2020 UWMPs. A critical component of this new statutory language is the requirement to prepare a five-year drought risk assessment (DRA), discussed in Chapter 7. This five-year DRA can also be used to provide the water service reliability assessment for a drought lasting five years.

DWR recommends that, as a first step, suppliers estimate expected gross water use for the next five years without drought conditions (also known as unconstrained demand). These numbers can then be adjusted to estimate the five-years' cumulative drought effects, as summarized in Chapter 7.

4.3 Worksheets and Reporting Tables

Suppliers are encouraged to use the DWR Planning Tool Use Worksheet to record current and projected water use as described in Section 4.2. These worksheets are structured to facilitate the supplier's completion of reporting tables. The tables are similar to those in the 2015 UWMP, with some modifications to reflect Water Code changes, the 2020 timeframe, and to provide additional flexibility to assure the tables are functionally useful for the supplier. The tables relevant to customer water use are used throughout this report.

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Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)						
	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable <i>From Tables 4-1R and 4-2 R</i>	9,257	9,502	9,728	9,982	10,210	10,462
Recycled Water Demand ¹ <i>From Table 6-4</i>	941	1,600	1,800	2,000	2,200	2,200
Optional Deduction of Recycled Water Put Into Long-Term Storage ²	0	0	0	0	0	0
TOTAL WATER USE	10,198	11,102	11,528	11,982	12,410	12,662
NOTES:						

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss ^{1,2}
07/2020	120
07/2019	7
07/2018	70
07/2017	670
07/2016	403
¹ Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet. ² Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.	
NOTES:	

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4.4 Water Use for Lower Income Households

Suppliers are required to include the projected water use for lower income households in their 2020 UWMP. A lower income household has an income below 80 percent of area median income, adjusted for family size.

The State Department of Housing and Community Development (HCD) categorizes households into five income groups based on the County Area Median Income (AMI) which can be used for planning and funding purposes. The five income groups include:

- Extremely Low-Income – up to 30% of AMI
- Very Low-Income – 31 to 50% of AMI
- Low-Income – 51 to 80% of AMI
- Moderate Income – 81 to 120% of AMI
- Above Moderate Income – greater than 120% of AMI

As required by State Housing Element law, jurisdictions shall provide sufficient land to accommodate a variety of housing opportunities for all economic segments of the community. The region's projected housing needs shall be accommodated for the planning period, known as the Regional Housing Needs Allocation (RHNA). To comply, jurisdictions shall provide adequate land with enough density and appropriate development standards. The Southern California Association of Governments (SCAG) allocates the RHNA to individual jurisdictions within the region.

Since the City of Moorpark accounts for approximately 97% of the water service area by population and contains most housing, SCAG data for the City of Moorpark shall be used for this UWMP. SCAG assigned an RHNA of 1,288 units to the City of Moorpark for the 2020-2045 forecast by income distribution, as summarized in Table 4-C.

Submittal Table 4-C: City of Moorpark's 2020-2045 RHNA Assigned Units		
Income Group	Number of Units	Percentage
Extremely/Very Low	377	29%
Low	233	18%
Moderate	245	19%
Above Moderate	433	34%
Total	1,288	100%

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Extremely low-, very low-, and low-income households are often combined and referred to as lower-income household. The lower-income households total 610 units for the City of Moorpark. It is estimated there are 3.3⁴ people per dwelling unit with a per capita water usage of 194 gpcd⁵ (not including agricultural water use). If all 610 lower-income housing units are built by 2045 the water demand increase is estimated to be 430 AFY, which is included in the water demand projections herein. In accordance with Water Code Section 10631.1, Table 4-5 confirms and indicates how future water savings estimates and lower-income household demands are included in water use projections.

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i>	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	Chapter 9
Are Lower Income Residential Demands Included In Projections? <i>Drop down list (y/n)</i>	Yes
NOTES:	

4.5 Climate Change Considerations

Weather patterns can shift dramatically and unpredictably, significantly affecting water supply planning. Although there are uncertainties of the exact timing, magnitude, and regional impacts of temperature and precipitation changes, researchers have identified several areas of concern for California water planners including:

- Reduction in Sierra Nevada snowpack
- Increasing intensity and frequency of extreme weather events
- Increased frequency and duration of extreme heat, impacting health and evapotranspiration; and
- Rising sea levels resulting in:
 - Impacts to coastal groundwater basins due to seawater intrusion;
 - Increased risk of damage from storms, high-tide events, and the erosion of levees; and

⁴ https://scag.ca.gov/sites/main/files/file-attachments/moorpark_localprofile.pdf?1606015228

⁵ Per capita water usage is based on 2020 goal for estimation purposes.

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- Potential pumping cutbacks on the SWP

Other areas of concern due to climate change include:

- Effects on local supplies such as groundwater
- Changes in urban and agricultural demand levels and patterns
- Impacts to human health from water-borne pathogens and water quality degradation
- Declines in ecosystem health and function
- Alterations to power generation and pumping regimes

Based on an analysis of the output from 32 Global Climate Models which were modified to examine projected changes in climate in Ventura County⁶, the following potential impacts included:

- Changes in precipitation characteristics (intensification and concentration into winter season) may have implications for groundwater recharge and how surface water is conveyed, captured, and stored.
- Increased potential for post-fire flash flooding and/or debris flows due to more frequent short-duration, high intensity rainfall.
- Increased evaporative demand
- Increasing temperatures and more frequent extreme (hot) temperatures
- Increases in maximum temperatures and overnight minimum temperatures as well as frequency of extreme temperatures
- Wildfire season will likely extend earlier into the spring and early summer and later into the fall and early winter

Climate change will affect the water supplies and water supply reliability of Calleguas. Changes in weather resulting from increased average temperature will decrease the volume of precipitation falling as snow in California and an overall a reduction in snowpack in the Sierra Nevada and other mountain ranges in the state. A rise in sea level could exacerbate saltwater intrusion into the coastal aquifers used for water supply in the region, which could degrade the aquifer water quality to an unusable level and thus increase Calleguas' purveyors dependence on SWP water.⁷ Climate change is also anticipated to cause more variability to the Colorado River, which in turn could add strain to MWD (and therefore Calleguas) deliveries as MWD supplements its supply to Calleguas from the Colorado River in times of drought or other shortage conditions.⁷ Section 7.1.1.3 of Calleguas' Draft 2020 UWMP goes into further detail on climate change impacts to the wholesaler's water supply.

⁶ Projected Changes in Ventura County Climate, Western Regional Climate Center, 2019, https://wrcc.dri.edu/Docs/VenturaClimate2019_lores.pdf

⁷ Calleguas Municipal Water District Draft 2020 UWMP (Public Review Draft), March 2021, CMWD

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4.5.1 MWD Planning Efforts for Climate Change Concerns

MWD recognizes additional risks and uncertainties from a variety of sources in the 2015 Integrated Resource Plan (IRP) Update, including climate change, which may result in a negative impact to water supply reliability. While it is impossible to predict the level of risk and uncertainty, the region's reliability would be more secure with a long-term plan recognizing risks and providing resources to offset risks. Some risks and uncertainties can be addressed by following the findings of the 2015 IRP Update. However, there are other risks that may take longer to manifest, such as climate change or demographic growth patterns, that impact water demands. The initial 2015 IRP analysis indicated, to address these risks, an additional 200,000 AF of water conservation and local supplies may be needed. This additional supply shall be considered when examining implementation policies and approaches as the IRP process continues. MWD is currently updating the 2020 IRP Update. However, it was not available at the time of this report preparation.

MWD has established a comprehensive technical process to identify key vulnerabilities known as the Robust Decision-Making (RDM) approach, which can show how vulnerable the region's reliability is to longer-term risks. The RDM approach can also establish indicators to monitor when critical changes may occur such as ever-changing impacts from improved Global Climate Models or housing and population growth patterns.

MWD is an active and founding member of the Water Utility Climate Alliance (WUCA), consisting of ten nationwide water providers collaborating on climate change adaptation and greenhouse gas mitigation issues. As a part of this effort, WUCA and its member agencies pursue a variety of activities on multiple fronts such as sharing individual agency actions and program implementation; supporting regional and federal efforts; and monitoring development of climate change-related research, technology, programs, and federal legislation.

WUCA published a white paper in January 2010 titled "Options for Improving Climate Modeling to Assist Water Utility Planning for Climate Change". The publication addresses Global Circulation Models, identifies key aspects for water utility planning, and provides seven initial recommendations on how climate modeling and downscaling techniques can be improved for applications in the water sector. Another WUCA white paper published in 2015, "Embracing Uncertainty: A Case Study Examination of How Climate Change is Shifting Water Utility Planning", provides practical and relevant examples on how and why to modify planning and decision-making processes to better prepare for a changing climate.

The IRP Update also explicitly reflects uncertainty in MWD's future water management environment. This involves evaluating a wider range of management strategies and planning for uncertain and evolving conditions, ultimately performing under a wide range of future conditions. Overall, MWD champions the adopted climate change policy principles by:

- Supporting reasonable, economically viable, and technologically feasible management strategies for reducing impacts on water supply,
- Supporting flexible "no regret" solutions that provide water supply and quality benefits while increasing the ability to manage future climate change impacts, and

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- Evaluating staff recommendations regarding climate change and water resources under the California Environmental Quality Act (CEQA) to avoid adverse effects on the environment.

MWD has made significant efforts to implement greenhouse gas mitigation programs and policies for its facilities and operations. MWD has been a leader in efforts to increase regional water use efficiency, increasing the availability of incentives for local conservation and recycling projects, as well as supporting conservation Best Management Practices for industry and commercial businesses. MWD continues to incorporate current climate change science into its planning efforts.

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Chapter 5 SBX7-7 Baseline, Targets, and 2020 Compliance

This chapter reports the daily per capita water use targets that were developed in accordance with the Water Conservation Act of 2009, also known as Senate Bill x7-7 (SBx7-7). SBx7-7 provides regulatory framework to support a statewide reduction of urban per capita water use of 20 percent by December 31, 2020.

The previous 2015 UWMP measured the progress towards this goal by reported per capita water use and comparing it to the intermediary goal of a 10 percent reduction by December 31, 2015. The 2010 UWMP required retail water suppliers to develop baseline daily per capita water use, a minimum baseline daily per capita water use, and target daily per capita water use for 2015 and 2020. The baseline daily per capita water use could be based on one of four methods described below:

- Method 1: 80 percent of the water supplier's baseline per capita water use
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscape area water use; and commercial, industrial, and institutional uses
- Method 3: 95 percent of the applicable state hydrologic region target as stated in the State's April 30, 2009 draft 20x2020 Water Conservation Plan
- Method 4: A best management practices (BMP) Option based on standards that are consistent with California Urban Water Conservation Council's (CUWCC) BMPs

5.1 Guidance for Wholesale Suppliers

This section is not applicable to the District's UWMP.

5.2 SB X7-7 Forms and Summary Tables

Table 5-1 shows the average baselines and confirmed 2020 targets for the District that were established in the 2015 UWMP.

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Submittal Table 5-1 Baselines and Targets Summary From SB X7-7 Verification Form <i>Retail Supplier or Regional Alliance Only</i>				
Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	2000	2009	243	194
5 Year	2004	2008	250	
*All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)				
NOTES:				

5.3 Baseline and Target Calculations for 2020 UWMPs

5.3.1 Supplier Submitted 2015 UWMP, No Change to Service Area

The District's service area did not change, and they included this calculation in the 2015 UWMP, therefore the calculations from the 2015 UWMP do not need to be updated and will be used for the 2020 UWMP to report SBX7-7 compliance in 2020.

5.3.2 Baseline Periods

Baseline daily per capita water use is defined as a continuous 10 or 15 year base period (baseline) for water use ending no earlier than December 31, 2004 and no later than December 31, 2020.

5.4 Methods for Calculating Population and Gross Water Use

5.4.1 Calculating Population

The DWR Population Tool was used to calculate the population within the District's Service area.

5.4.2 Gross Water Use

Gross water use for the baseline and minimum baseline periods were calculated as part of the SBx7-7 Verification forms which is included as Appendix F.

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5.5 2020 Compliance Daily Per-Capita Water Use (GPCD)

In 2020, the District's per capita water use was 173 gpcd which falls below the 2020 target of 194 gpcd as shown in Table 5-2. There were no adjustments applied to the 2020 gpcd and the District met the targeted reduction for 2020.

Submittal Table 5-2: 2020 Compliance From SB X7-7 2020 Compliance Form <i>Retail Supplier or Regional Alliance Only</i>				
2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* (Adjusted if applicable)		
173	0	173	194	Yes
*All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)				
NOTES:				

5.6 Regional Alliance

The District is not participating in a regional alliance.

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Chapter 6 Water Supply Characterization

6.1 Water Supply Analysis Overview

VCWWD No. 1 receives its water from multiple sources as shown below:

- **Imported Water:** The primary source of its supply is imported potable water from the Metropolitan Water District (MWD) of Southern California through Calleguas Municipal Water District, a local wholesaler. The imported water is primarily State Water Project (SWP) water from the Sacramento-San Joaquin River Delta in Northern California that has been treated at MWD's Joseph Jensen Filtration Plant. In Fiscal Year 2020 (2020), VCWWD No.1's purchases from Calleguas totaled 7,112 AF.
- **Groundwater:** The second largest supply is from local groundwater production within the East Las Posas Groundwater Basin. Currently, the District owns and operates six wells that pump groundwater from the basin. Two wells are currently offline (monitoring Wells No. 96 and 97). All wells are in the north-east portion of the service area and have a capacity up to 2,170 AFY. In fiscal year 2020, the District's groundwater allocation was 2,195 AFY. Utilizing four wells in 2020, VCWWD No. 1 extracted 1,966 AF of groundwater from the East Las Posas Basin. In December 2020, through local ordinances and the Groundwater Sustainability Plan for the Las Posas Basins implemented by Fox Canyon Groundwater Management Agency (FCGMA), VCWWD No.1 was granted a groundwater allocation of 2,195 AFY for 2020. The District has not received an official allocation for 2021.
- **Reclaimed Water:** Since 2003, the District has used the Moorpark Water Reclamation Facility (MWRF) to generate reclaimed water for additional supply. The MWRF is owned and operated by the District. The treatment facility has the capacity of 3.0 (3,360 AFY) but is only permitted to treat 1.5 mgd (1680 AFY) of the secondary effluent to tertiary levels to meet California Code of Regulations Title 22 requirements. The recycled water is primarily used irrigation and landscape uses. In 2020, approximately 966 AF of wastewater was treated to tertiary levels and 941 AF distributed within the District's service area for reuse.

Normal water year, single dry year, and five consecutive year droughts or more frequent and severe periods of drought (as described in the drought risk assessment) can be found in Chapter 7.

6.1.1 Specific Analysis Applicable to All Water Supply Sources

6.1.1.1 Imported Water:

VCWWD No. 1 has a purchase agreement with Calleguas Municipal Water District with a Tier 1 water allocation amount of 10,722.5 AF (90% of 2021 Base Demand) to be purchased each year. This water is purchased from Calleguas via supplies from MWD. As shown in Table 7-A, it is anticipated that supplies from MWD will exceed future water demands from its customer base during normal-year, single-dry year,

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and extended drought periods. This ensures the reliability of imported water to VCWWD No.1 will meet projected demands into the future.

6.1.1.2 Groundwater:

Groundwater production in the East Las Posas Basin is managed by FCGMA, an independent special agency responsible for protecting groundwater quality and sustainability. The State Groundwater Management Act of 2014 has triggered that a specific Groundwater Sustainability Plan be developed for the Las Posas Basin to be implemented and adhered to by VCWWD No.1 and other groundwater producers pumping in the basin. The District's allocation was approved in September 2020 by the Courts in a settlement. The settlement gives the District 10.6% of the East Las Posas Basing Safe Yield. The District's allocation will be based on the established safe yield of the basin as determined by FCGMA. This allocation will be effective fiscal year 2021. The Safe Yield of the basin and District's allocation will be examined every five years and adjusted accordingly by FCGMA to meet the goals in the GSP by 2040.

6.1.1.3 Recycled Water

Recycled water is produced at the Moorpark Wastewater Treatment Facility, owned and operated by VCWWD No. 1. Recycled water production is regulated by the State of California per California Code of Regulations Title 22 requirements. VCWWD No. 1 treats wastewater collected from over 10,000 customers in its service area and has the capacity (also limited to about 75% in influent flow) to treat 3.0 mgd of secondary effluent that meet Title 22 requirements at its owned and operated MWRf but is only permitted to treat 1.5 mgd. The District supplies recycled water to thirteen users throughout the service area for landscape irrigation at golf courses, agricultural irrigation, and grading and dust control uses. It is expected that recycled water can be reliably used regardless of drought or severe water conservation efforts if wastewater up to the treatment capacity is available. Wastewater in the District has historically been consistent from year to year as population has grown. It is expected, during periods of drought or conservation, that potable water use will decline. This will impact the wastewater flows. However, it is anticipated that these flows will remain well above the tertiary treatment capacity of the plant.

6.1.2 Other Characterizations

See Figure 3-2 for a map showing conveyance facilities, groundwater well locations, and connection to Calleguas Municipal Water District.

6.1.3 Optional Planning tool

The optional Planning Tool was used for Chapter 7 evaluation.

6.2 Narrative Sections for Supplier's UWMP Water Supply Characterizations

6.2.1 Purchased or Imported Water

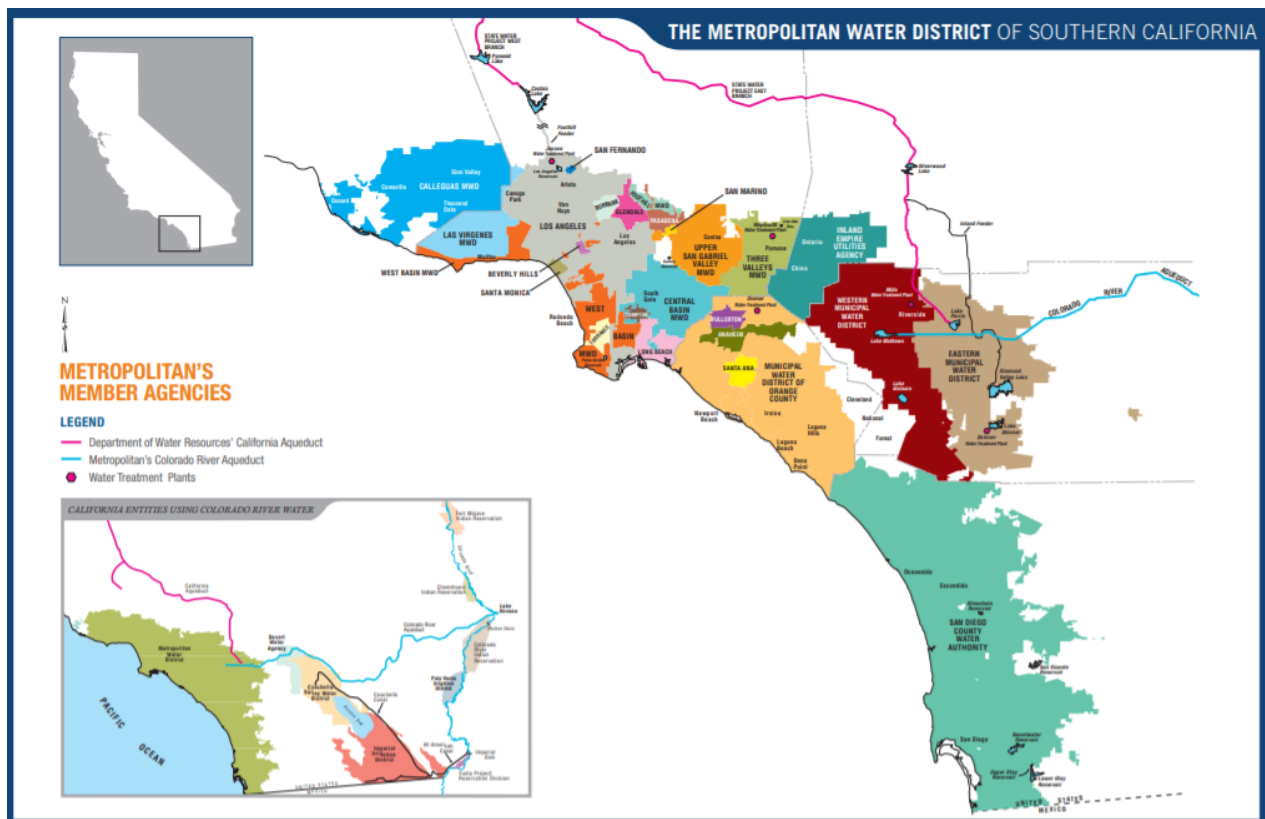
In 2020, approximately 71 percent of the District's water supply came from imported potable water. This water is purchased through Calleguas Municipal Water District, a local wholesaler, partnering with Metropolitan Water District (MWD) of Southern California. MWD treats water from the Sacramento-San

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Joaquin River Delta in Northern California at its owned and operated Joseph Jensen Filtration Plant. The treated water is conveyed to Southern California via the State Water Project (SWP).

6.2.1.1 Metropolitan Water District of Southern California (MWD)

MWD is a wholesale water agency that was formed in 1928 and is composed of 26-member water agencies as shown in Table 6-A. As a wholesaler, MWD has no retail customers, but serves customers through member agencies which account for approximately 19 million people in six Southern California counties. MWD's service area is shown on Figure 6-1.



Source: <http://www.mwdh2o.com/Who%20We%20Are%20Fact%20Sheets/Member%20Agency%20Map.pdf>

Figure 6-1: Metropolitan Water District of Southern California Service Area

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Submittal Table 6-A: MWD Member Cities and Agencies		
City of Anaheim	City of San Fernando	Inland Empire Utilities Agency
City of Beverly Hills	City of San Marino	Las Virgenes Municipal Water District
City of Burbank	City of Santa Ana	Municipal Water District of Orange County
City of Compton	City of Santa Monica	San Diego County Water Authority
City of Fullerton	City of Torrance	Three Valleys Municipal Water District
City of Glendale	Calleguas Municipal Water District	Upper San Gabriel Valley Municipal Water District
City of Long Beach	Central Basin Municipal Water District	Western Basin Municipal Water District
City of Los Angeles	Eastern Municipal Water District	Wester Municipal Water District of Riverside County
City of Pasadena	Foothill Municipal Water District	

MWD treats sourced water from the Colorado River and the State Water Project (San Joaquin River Delta), as well as additional supplies from water transfers, exchanges, water banking, and other projects.

6.2.1.1.1 Colorado River

MWD has a permanent service contract with the Secretary of the Interior which grants them legal entitlement to receive water from Lake Havasu on the Colorado River. MWD owns and operates the Colorado River Aqueduct (CRA) which transports an annual 1.2 million acre-feet of water from Lake Havasu to Lake Mathews in Riverside County. Lake Havasu is located on the Colorado River along the California-Arizona boarder is approximately 242 miles from Lake Mathews. Most of this water is delivered to member agencies south of Calleguas and VCWWD No. 1 and is only used as a back-up supply for water use in Ventura County.

6.2.1.1.2 Sacramento- San Joaquin River Delta

MWD also receives and treats water from the San-Joaquin River Delta (Delta) in Northern California via a contract with the Department of Water Resources. Water is conveyed from the Delta via the 444-mile-long California Aqueduct, part of the State Water Project (SWP). The SWP is a water storage and delivery system of reservoirs, aqueducts, power plants and pumping plants extending more than 700 miles throughout California. The SWP is managed by the Department of Water Resources (DWR) and is the nation's largest state-built, multi-purpose, user-financed water project and can deliver nearly 4.2 million

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acre-feet of water annually. The SWP provides imported water to MWD's service area making up 25 percent to 50 percent of MWD's supply. In accordance with its contract, MWD has a Table A allocation of 1,911,500 acre-feet per year. Actual deliveries have never reached this based on the availability of supplies determined by DWR. SWP water is treated at MWD's owned and operated Joseph Jensen Filtration Plant in Grenada Hills. This treated water from the Sacramento-San Joaquin River delta is imported to Calleguas primarily through MWD's West Valley Feeder No. 2 pipeline which is capable of conveying water at 300 cubic feet per second (cfs). Through Calleguas, this the primary source of water for VCWWD No.1 supply.

6.2.1.1.3 Extended Drought Restrictions

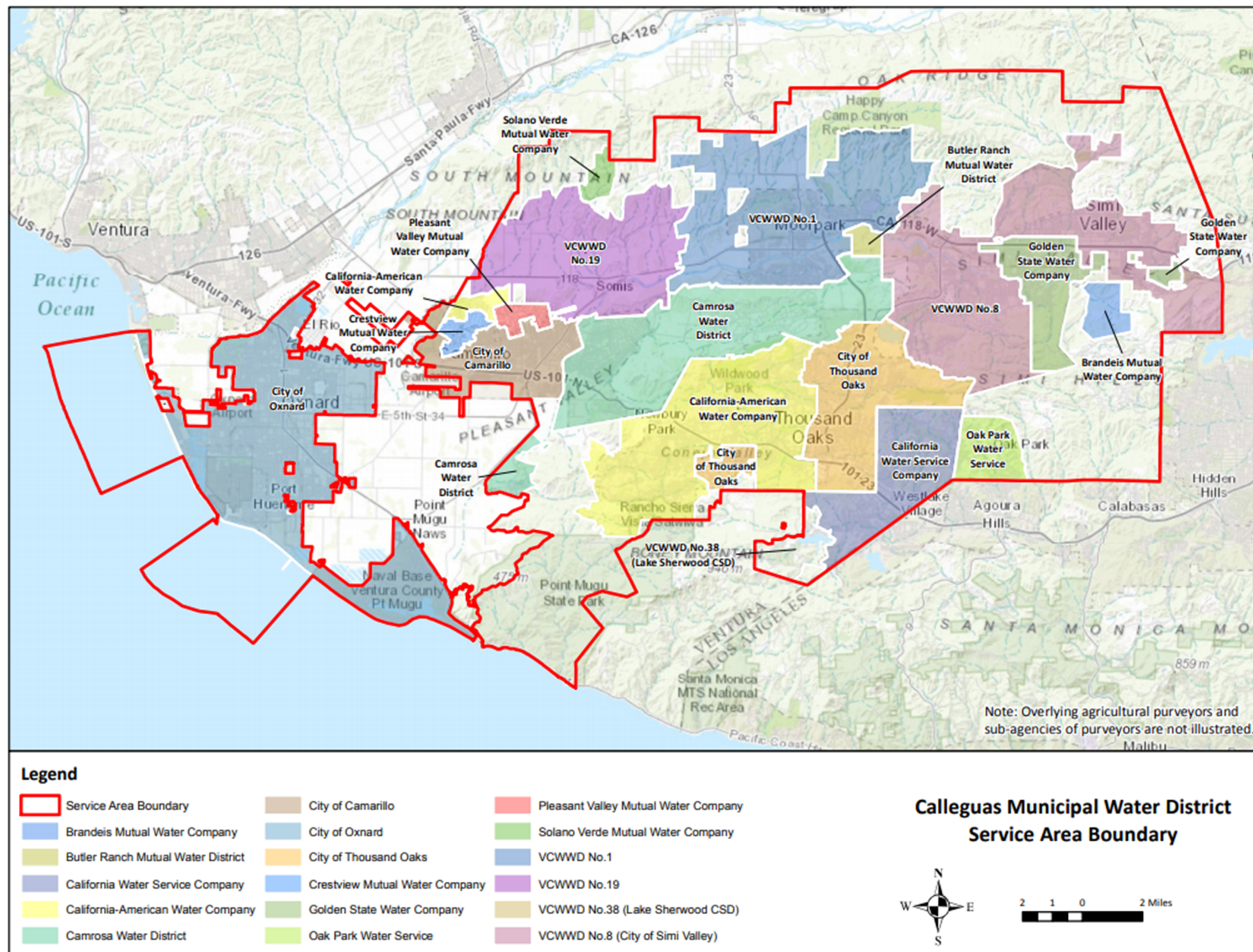
In April 2015, citing continued drought conditions and reduced allocations from the State Water Project and Colorado River, the MWD Board of Directors approved implementing their Water Supply Allocation Plan (WSAP) at a Regional Shortage Level 3 starting July 1, 2015, to cut imported water deliveries to its member agencies by 15 percent. Under a Level 3 WSAP, MWD could impose a surcharge, ranging from \$1,480 to \$2,960/AF of additional water for any member agency that failed to meet the 15% reduction. The allocation plan limits water usage for its 26 member agencies based on their dependency on MWD supplies, while considering local supply conditions and past water-saving actions. The Tier 1 threshold for Calleguas was set at 13.7 percent. Calleguas would pass the surcharge on to Calleguas' retail customers exceeding this water allocation threshold.

On May 10, 2016, the Metropolitan Board of Directors reduced the WSAP to a Level 2, which is a 10 percent reduction in imported water deliveries, effective immediately, due to lower demands achieved through the region's water saving efforts and improved supply conditions, particularly in Northern California; and declared there wouldn't be a WSAP implemented for fiscal year 2017. Calleguas also rescinded their surcharge in May 2016. Currently, a WSAP is not being implemented.

6.2.1.2 Calleguas Municipal Water District (Calleguas)

Calleguas was formed by the voters of southern Ventura County in 1953. As an independent special district, Calleguas' mission is to provide a safe, reliable water supply in an environmentally and economically responsible manner for local water purveyors in Ventura County. Named for the watershed in which it is located, Calleguas is a public agency established under the Municipal Water District Act of 1911. It is governed by a five-member board of directors elected by voters to represent each of the five geographic divisions within the District. Proposed changes in Calleguas' boundary and/or services are regulated by the Ventura Local Agency Formation Commission (LAFCO).

In 1960, Calleguas became a member agency of MWD. As a member agency, Calleguas is the fifth largest in terms of average annual water deliveries. The Calleguas water service area is shown in Figure 6-2. Calleguas receives treated water through MWD's West Valley Feeder No. 2 pipeline connection to the East Portal of Calleguas' eight-foot-diameter Perliter Tunnel. This tunnel is the only connection to MWD's water supply. The water is then conveyed to Calleguas' transmission system in Simi Valley to Lake Bard or injected into the Fox Canyon Aquifer. During planned and emergency shutdowns of imported supply, Lake Bard and the Las Posas Aquifer Storage and Recovery Project (Las Posas ASR Project) provide reliable water supplies to local water purveyors.



Source: <http://www.calleguas.com/images/about/purveyormap.pdf>

Figure 6-2: Calleguas Municipal Water District Local Water Purveyors Map

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A list of Calleguas' local water purveyors is shown in Table 6-B.

Submittal Table 6-B: Calleguas Mutual Water District's Local Water Purveyors		
Berylwood Heights Mutual Water Company	City of Oxnard	Solano Verde Mutual Water Company
Brandeis Mutual Water Company	City of Pasadena	Ventura County Waterworks District No. 1
Butler Ranch Mutual Water Company	City of Thousand Oaks	Ventura County Waterworks District No. 8
California-American Water Company	Crestview Mutual Water Company	Ventura County Waterworks District No. 19
California Water Service Company	Golden State Water Company	Ventura County Waterworks District No. 38
Camrosa Water District	City of Oxnard	Zone Mutual Water Company
City of Camarillo	Oak Park Water Service	

Calleguas distributes high quality drinking water on a wholesale basis to 19 local purveyors, including VCWWD No. 1, and does not directly distribute water to retail customers. These local water purveyors, including VCWWD No. 1, deliver water to area residents, businesses, and agricultural customers through their local infrastructure. These 19 Calleguas purveyors are listed in Table 6-B. Approximately three-quarters of Ventura County residents (roughly 635,000 people) depend on Calleguas for all or part of their water. Water supplied by Calleguas currently represents approximately 73 percent of the total municipal and industrial water demand within its service area. Only a small portion of the water delivered by Calleguas (approximately 5 percent) is used for agricultural purposes. Agricultural demands are generally met by other agencies or private entities using untreated surface water, recycled wastewater, and groundwater from various basins underlying the area. As of 2020, deliveries to VCWWD No. 1 accounted for 8.21 percent of Calleguas' total water deliveries. Through ten (10) turnouts connected to Calleguas, VCWWD No. 1 imported 7,112 AF of potable water in fiscal year 2020. See Figure 3-2 for a map of the connections between VCWWD No. 1 and Calleguas Municipal Water District.

6.2.1.3 Imported Water Supply Quantity and Quality Challenges

The original SWP facilities, completed in the early 1970s, were designed to meet the needs of SWP contractors established at that time. It was anticipated that additional SWP facilities within the Sacramento/San Joaquin Delta (Delta) would be constructed over time to bolster long-term supply reliability. However, these additional facilities were repeatedly deferred, and stringent environmental regulations have greatly restricted water exports. As a result, the SWP is not capable of delivering full contractor entitlements on a routine basis. The focal point is the Delta, the largest estuary on the west coast, through which 60 percent of the freshwater used in the State must pass. Over 150 years of extensive modification by man, a variety of competing interests, and political gridlock have resulted in significant environmental deterioration within the Delta. In recent years, the Delta smelt, winter-run Chinook salmon, spring-run Chinook salmon, and splittail were added as threatened or endangered

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species under the federal and state Endangered Species Acts (ESA). Resulting actions taken to protect the ecosystem of the Delta have placed considerable limitations on SWP operations.

SWP water is generally of high quality. Total dissolved solids (TDS) concentrations range between 250 and 350 milligrams per liter (mg/L). The quality of SWP water as a drinking water source is affected by a number of factors, most notably seawater intrusion, agricultural drainage from peat soil islands in the Delta, municipal wastewater discharges, and urban runoff. The water quality parameters of most concern are bromide and salinity. Levels of bromide in the water increase significantly as it moves through the Delta. Bromide can combine with chemicals used in the water treatment process to form bromate, which is considered to be a risk to human health at concentrations above the state and federal drinking water standards. Treated wastewater and urban runoff discharged from cities and towns surrounding the Delta also add salts to the water, which build up in local watersheds over time. Moreover, actions to protect Delta fisheries have exacerbated existing water quality problems by forcing SWP diversions to shift from the spring to the fall when bromide and salinity levels are highest. Closure of the Delta Cross Channel gates to protect migrating fish has also degraded the quality of SWP supplies by reducing the flow of higher quality Sacramento River water.

6.2.2 Groundwater

Groundwater has been used in Ventura County since the late 19th century, primarily for irrigation, but also for municipal and industrial water supply. With the passage of California's Sustainable Groundwater Management Act (SGMA) in 2014, prudent management of the state's critical groundwater basins is now a primary water resource concern and mandated by state law. SGMA requires adoption of groundwater water sustainability plans by January 31, 2020 for all basins defined by the state as either a high or medium priority and subject to critical overdraft, and by January 31, 2022 for all other high or medium priority basins. For more information on SGMA, see <http://www.water.ca.gov/cagroundwater/index.cfm>.

VCWWD No. 1's water service area overlies two groundwater basins in Ventura County, the East and South Las Posas Groundwater Basins. These basins are part of the Las Posas Valley Basin and are managed by Fox Canyon Groundwater Management Agency (FCGMA). The FCGMA was initially created to manage the groundwater in both over-drafted and potentially seawater-intruded areas within Ventura County.

6.2.2.1 Basin Description

6.2.2.1.1 Fox Canyon Groundwater Management Agency

The Fox Canyon Groundwater Management Agency (FCGMA) is an independent special agency created in 1983 to oversee groundwater resources within the Fox Canyon Groundwater Basin. The primary objective of FCGMA is to preserve groundwater resources for agricultural, municipal, and industrial uses in the best interests of the public and for the common benefit of all water users. Protection of water quality and quantity, along with maintenance of long-term water supply, is part of that objective (Update to the FCGMA Groundwater Management Plan, FCGMA, 2007).

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FCGMA's boundary is located partially within Calleguas' service area and overlies approximately 118,000 acres. The FCGMA boundary encompasses the coastal basins that underlie the cities of Oxnard, Port Hueneme, Camarillo and Moorpark. There are seven main or significant groundwater basins within the FCGMA as shown in Figure 6-3. These groundwater basins include the Oxnard Plain, the Oxnard Plain Forebay, the Pleasant Valley, the Santa Rosa, and the Las Posas Valley Basins. The Las Posas Valley Basin is divided into the West Las Posas, East Las Posas, and South Las Posas basins. These basins generally contain two major aquifer systems, the Upper Aquifer System (UAS) and the Lower Aquifer System (LAS). These basins are part of the Transverse Ranges geologic province, in which the mountain ranges and basins are oriented in an east-west direction. Active thrust faults border the basins of the Santa Clara River, causing rapid uplift of the adjacent mountains and down-dropping of the basins. The alluvial basins are filled with substantial amounts of Tertiary and Quaternary sediments deposited in both marine and terrestrial (non-marine) settings. The basins beneath the Oxnard Plain are filled with sediments deposited on a wide delta complex formed at the terminus of the Santa Clara River and were heavily influenced by alternating episodes of advancing or retreating shallow seas that varied with world-wide sea level changes over many millions of years.

Various aquifers within these basins include the Oxnard and Mugu aquifers (UAS) and the Hueneme, Fox Canyon, and Grimes Canyon aquifers (LAS). A shallower, unconfined aquifer is also present locally underlying rivers and creeks. Underlying the Oxnard Plain and Pleasant Valley basins are sand layers of the "semi- perched zone," which may locally contain poor-quality water. This zone extends from the surface to no more than 100 feet in depth. These sands overlie confining clay of the upper Oxnard Aquifer which generally protects the underlying aquifers from contamination from surface land uses. The Semi-perched zone is rarely used for water supply. The aquifers are recharged by infiltration of streamflow and precipitation, artificial and mountain-front recharge, return flow from agricultural and residential irrigation, and in varying degrees by groundwater underflow from adjacent basins.

FCGMA's goal is to balance the groundwater supply and demand within its jurisdiction. To achieve this goal, FCGMA has adopted a number of ordinances in an effort to eliminate groundwater overdraft, and to combat the ongoing threat of seawater intrusion in the Fox Canyon aquifer. These ordinances and resolutions help to regulate, conserve, and manage the use and extraction of groundwater within the region.

Historically, both the UAS and the LAS have been in a state of overdraft, which has led to seawater intrusion. Unfortunately, water in the UAS has elevated levels of chlorides and total dissolved solids (TDS). VCWWD No. 1 and other agencies are active participants in regional efforts to put some of this water to beneficial use by developing groundwater desalter projects for groundwater recovery.

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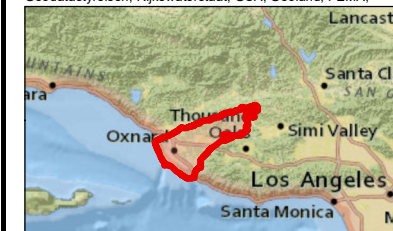
- Fox Canyon Groundwater Management Agency
- Groundwater Basin



0 18,000 Feet
(At original document size of 8.5x11)

Notes

1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: LVMWD (2020)
3. Background: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA,



Project Location: Ventura County, CA
Prepared by CNW on 2020-12-01
TR by ABC on 2020-12-01
IR Review by ABC on 2012-12-01

Client/Project: 184031382 REVA
Client: Ventura County Waterworks District No.1
Project: Ventura County Waterworks District No.1 2020 UWMP
Report: 2020 Urban Water Management Plan

Figure No.
6-3

Title
Fox Canyon Groundwater Management Agency Boundary with Groundwater Basins

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

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6.2.2.2 Multiple Groundwater Basins

6.2.2.2.1 Las Posas Valley Basin

The Las Posas Valley Basin is bounded on the south by the Camarillo and Las Posas Hills and on the north by South Mountain and Oak Ridge⁸ (pg. 6.17). The Las Posas Valley Basin (State Basin No. 4-008) is not adjudicated, based on the DWR official departmental bulletins (California's Groundwater Bulletin 118 – Interim Update 2016) and is not specifically identified as a basin in critical condition of overdraft.

The Las Posas Valley Basin has been subdivided into West, East, and South basins⁹ (pg. 6.11). Productive aquifers in this basin include a shallow, unconfined aquifer that is most transmissive along the Arroyo Las Posas and a lower confined aquifer system that is considered to be the equivalent of the Lower Aquifer System on the Oxnard Plain. VCWWD No. 1 has historically produced groundwater from the East Las Posas Basin and is planning a groundwater production and treatment system (Moorpark Desalter Project), discussed in 6.2.8.2, to produce groundwater from the South Las Posas Basin.

Urban development has brought increased discharges of both treated wastewater (including treated discharges from the District's Moorpark Water Reclamation Facility (MWRF) and shallow groundwater into Arroyo Las Posas, providing a year-round recharge source for the South and East Las Posas basins^{10,11}. This increased percolation from the arroyo has created a recharge mound that extends northward into the East Las Posas basin, where groundwater levels have risen by 125 feet to 200 feet during the past 30 years.

6.2.2.2.1.1 East Las Posas Basin

Groundwater from the East Las Posas Basin is separated from the West Las Posas Basin by a north-trending, unnamed fault running through Somis⁹ (pg. 6.11), ¹⁰ (pg. 6.11), across which groundwater levels differ by as much as 400 feet. The fault also acts as a barrier to prevent transport of saline waters from the East Las Posas basin to the West Las Posas basin¹².

⁸ (CSWRB, 1954). California Department of Water Resources, 1954. Seawater intrusion: Oxnard Plain of Ventura County: Bulletin No. 63-1.

⁹ (Hanson, 1998), Hanson, R.T., 1998. Draft Simulation of Groundwater/Surface-Water Flow in the Santa Clara-Calleguas Basin, Ventura County, California, U.S. Geological Survey, Unpublished Water Resources Investigations Report.

¹⁰ (CH2MHill, 1993) Technical Memorandum hydrogeology and three-dimensional groundwater flow model of the Las Posas Basin, Ventura County, California, Report to Metropolitan Water District of Southern California.

¹¹ (Bachman, 2002). Bachman, S.B., 2002. Water quality in the East and South Las Posas basin – problem and solutions, Report to Calleguas Municipal Water District.

¹² (Bachman, 1999). Bachman, S.B., 1999. Las Posas basin groundwater elevations and water quality, Joint report to Calleguas Municipal Water District and United Water Conservation District.

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The source of recharge to the East Las Posas basin has changed significantly since urban development of the Simi Valley and Moorpark areas over the last 30 years. Prior to this time, recharge was predominantly from rainfall on outcrop areas and from percolation of winter floodwater along the Arroyo Las Posas. Geochemical studies show that groundwater in the central portion of the East Las Posas basin is hundreds to thousands of years old ¹³ (pg. 6.12), indicating a slow rate of historical recharge along the flanks of the basin.

Groundwater pumping in the basin has resulted in falling groundwater levels in the eastern portion of the basin, away from the recharge mound. The largest drop in groundwater levels (190 feet) over the period 1973 to 1998 occurred in this region.¹² (pg. 6.11) Groundwater levels have stabilized somewhat across the basin since the late 1990s, at least in part because of the addition of in-lieu and injected recharge by Calleguas as part of the Las Posas Basin Aquifer Storage and Recovery (ASR) project.

Increasing concentrations of salts (chloride, sulfate, sodium) in the portion of the basin along the Arroyo Las Posas continue to be a problem in the East Las Posas Basin. Chloride concentrations in the shallow aquifer beneath the arroyo can reach 360 mg/L, whereas chloride concentrations in the surface waters in the arroyo are in the range of 120-180 mg/L¹¹ (pg. 6.11). These increased chloride concentrations in the shallow aquifer are associated with historically high groundwater levels (that apparently leach salts from previously unsaturated sediments in the shallow aquifer along the arroyo).

The District produces groundwater from the East Las Posas Groundwater Basin via six wells owned and operated by the District with a total system capacity of approximately 3,500 gpm (2,170 AFY). In 2020, there were only four wells online to produce groundwater (Wells No. 96 and 97 were offline). The groundwater meets all State and Federal water quality standards for drinking water with the exception that treatment is required at two of the well sites (Wells No. 15 and 20) to lower iron and manganese levels below the State Title 22 Secondary Maximum Contaminant Level (MCL) for these two minerals. The groundwater is chlorinated at each well site before being pumped into the potable water distribution system. Groundwater produced by the four District wells from for fiscal year 2020 is shown in any unused extraction allocation can be carried over for use in a following water year with only fifty percent of an extraction allocation available for carry over. All extractions during a water year in excess of the allocations established by the ordinance shall be subject to extraction surcharges as provided in the Agency Ordinance Code for extractions that exceed the historical and/or baseline allocation. This ordinance will take effect on October 1, 2021.

The FCGMA, the groundwater sustainability agency (GSA), allocated the District a maximum 1,756 AFY for groundwater production in 2016 (Ordinance E). This was the District's groundwater allocation for FY2020. In December 2020, An Ordinance to Establish *An Extraction Allocation System For the Las Posas Valley Groundwater Basin December 14, 2020* was adopted to establish an allocation of 2,195 AFY for VCWWD No. 1 to meet the requirements outlined in the GSP. These requirements took effect on January 1, 2021. Based this Ordinance, any unused extraction allocation can be carried over for use in a

¹³ (Izbicki, 1996b), Izbicki, J.A., 1996b. Source, Movement, and Age of Ground Water in a Coastal California Aquifer, United State Geologic Survey Fact Sheet 126-96.

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following water year with only fifty percent of an extraction allocation available for carry over. All extractions during a water year in excess of the allocations established by the ordinance shall be subject to extraction surcharges as provided in the Agency Ordinance Code for extractions that exceed the historical and/or baseline allocation. This ordinance will take effect on October 1, 2021.

Submittal Table 6-C: Ventura County Waterworks District No. 1 - Groundwater Production Wells FY2020	
Well Facility	Production (AFY)
Well No. 15	634
Well No. 20	626
Well No. 95	143
Well No. 96	0 (Offline)
Well No. 97	0 (Offline)
Well No. 98	563
Total	1,966

6.2.2.2.1.2 South Las Posas Basin

The South Las Posas Basin is separated from the East Las Posas Basin by an east- trending anticline (fold) that affects all but the shallowest alluvium. This fold may affect groundwater flow between the East and South Las Posas Basins at some aquifer depths, although recharge from the South Las Posas Basin flows readily into the East Las Posas Basin at Lower Aquifer System (LAS) depths. To the south, the Springville and Santa Rosa fault zones produce disrupted and tightly folded rocks along the edge of the basin, restricting groundwater flow to the south ¹⁴. There is a shallow alluvial aquifer that follows the trend of Arroyo Las Posas as it crosses the South Las Posas Basin; this shallow aquifer is in hydrologic connection with the underlying LAS and is the main source of recharge to the LAS.

There has been a significant change in average groundwater levels over the past 40 years in the South Las Posas Basin, with groundwater levels rising more than 100 feet during this period. The mechanism for this rise in groundwater elevations is the increased recharge from percolation beneath the Arroyo Las Posas as discharges from the Moorpark and Simi Valley wastewater treatment plants and dewatering wells in Simi Valley have increased year-round flow in the arroyo. The entire alluvial aquifer near the arroyo has progressively filled to the elevation of the arroyo, starting in the easternmost portion of the basin in the 1960s and moving westward through the 1990s¹¹. Water from the filled alluvial aquifer has percolated into the underlying Lower Aquifer System, creating a recharge mound in the Lower Aquifer System that extends from the arroyo northward into the East Las Posas Basin.^{10,12}

¹⁴ (CSWRB, 1956). California State Water Resources Board (CSWRB), 1956. Ventura County Investigation, Bulletin 12, 2 Volumes.

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Salts (i.e., chloride, sulfate) in the groundwater have increased in the South Las Posas basin and the southwestern portion of the East Las Posas basin as the shallow aquifer filled along Arroyo Las Posas. These salts were leached from the shallow aquifer as groundwater levels reached record highs, saturating sediments that have been unsaturated for the historic period. These salts apparently migrated vertically with percolating groundwater into the LAS and then laterally into the main portion of the East Las Posas Basin as the recharge mound developed. Due to high salinity, this groundwater is unsuitable for drinking water purposes.

The District is planning the construction of a groundwater production and treatment system that will provide up to 5,000 AFY of potable water from the South Las Posas Basin.

6.2.2.3 Other Considerations

6.2.2.3.1 Groundwater Challenges to the Las Posas Valley Basin

Subsidence and seawater intrusion are both common regional groundwater challenges facing the South Coast Hydrologic Region which includes the Oxnard Plain area and the Las Posas Valley Basin.

Seawater intrusion began in the Oxnard Plain area during the 1930's and was widespread as early as the 1940s. Changes in groundwater management, including pumping reductions, shifting of pumping locations, construction of the Freeman Diversion, and the operation of the Pumping Trough and Pleasant Valley pipeline systems have significantly reduced seawater intrusion, but seawater intrusion conditions persist according to the Long Term Operation EIS, Chapter 7, *U.S. Bureau of Reclamation (USBR)*.

According to the Simulation of Ground Water-Surface Water Flow in the Santa Clara -Calleguas Basin, Ventura County, California (*USGS*), overdraft in the basin has caused land subsidence, first measured in 1939. This was measured to be as much as 5 feet in the Las Posas Valley subbasins. Model simulations indicate that most of the land subsidence occurred after the drought of the late 1920's and during the agricultural expansion of the 1950's and 1960's. The results also indicate that subsidence occurred primarily in the upper-aquifer system prior to 1959, but in the lower-aquifer system between 1959 and 1993 owing to an increase in groundwater pumping from the lower-aquifer system.

The FCGMA maintains that the Las Posas Basins are in overdraft relative to the native water supply to the basin. This has been mitigated in some areas by non-native inflows from wastewater treatment plant discharges, urban runoff, and shallow groundwater dewatering discharges from upstream areas. Since 1992, FCGMA has incrementally reduced groundwater allocations by 25 percent.

6.2.2.3.2 Groundwater Sustainability Efforts

6.2.2.3.2.1 Sustainable Groundwater Management Act of 2014

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, composed of AB 1739 (*Dickinson*), SB 1168 (*Pavley*), and SB 1319 (*Pavley*), collectively known as the *Sustainable Groundwater Management Act (SGMA)*. For the first time in its history, California has a framework for sustainable, groundwater management.

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SGMA requires governments and water agencies of *high and medium priority basins* to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically overdrafted basins, that will be 2040. For the remaining high and medium priority basins, 2042 is the deadline.

SGMA empowers local agencies to form Groundwater Sustainability Agencies (GSAs) to manage basins sustainably and requires those GSAs to adopt Groundwater Sustainability Plans (GSPs) for crucial groundwater basins in California.

The SGMA adopts a strategy for managing the state's groundwater resources with the main focus on implementing sustainability plans for the majority of groundwater basins throughout the state, including many of which California's agricultural community are highly dependent. These plans can vary from simple basin-wide plans developed and implemented by individual local agencies, to multiple plans by different local agencies operating in the same basin, to state-imposed plans where no sufficient local plan does not exist. In particular, the goal of reaching a sustainable groundwater basin within 20 years by implementation of the plans may have a significant impact on groundwater users.

The SGMA also contains procedural requirements for plan development and implementation, and exempts many activities involved in that process from the environmental review requirements of the California Environmental Quality Act ("CEQA").

While the SGMA will regulate California's groundwater on a statewide basis for the first time, it does not cover every groundwater basin within the state's jurisdiction, and its impact will not be felt immediately. The statute generally does not apply low priority basins and/or adjudicated basins. Moreover, sustainability plans do not need to be implemented for several years, and affected basins are not required to attain sustainability goals until approximately 2040.

The California Department of Water Resources (DWR) has estimated the SGMA will cover 96 percent of groundwater used in California.

6.2.2.3.2.2 Local Groundwater Sustainability Agency

Based on language in the SGMA, any local agency with water supply, water management, or land use responsibilities or a combination of agencies in a groundwater basin covered under the SGMA may become a Groundwater Sustainability Agency for that groundwater basin.

The SGMA gives these GSAs the power, among others, to conduct investigations, acquire property including water rights, regulate, limit, allocate, or transfer extractions, and execute registration and extraction measurement requirements of facilities that extract groundwater within their authority. To support their powers pursuant to the GSP, the GSAs can implement fees on permits and groundwater extractions along with enforcement through penalties for any violations.

As outlined in the California Water Code, Part 2.74, Sustainable Groundwater Management Act (Act), Section 10723 (c), the Fox Canyon Groundwater Management Agency (FCGMA) shall be deemed the exclusive Groundwater Sustainability Agency (GSA) within its boundaries with powers to comply with Act.

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On January 9, 2015, the FCGMA held a public hearing and passed Resolution 2015-01, Attachment 1, wherein the FCGMA elected to become the GSA for the Arroyo Santa Rosa Valley, Las Posas Valley (West, South, and East), Oxnard Forebay, Oxnard Plain and Pleasant Valley Basins within the FCGMA boundaries.

Per Section 10723.2 of the Act, the GSA shall consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans. The FCGMA as enacted has a Board of Directors and operating structure that clearly represents the interests of all users and uses of groundwater and surface water within the FCGMA boundaries. The five-member Board of the FCGMA is comprised as follows:

- One member shall be chosen by United Water Conservation District, the member's district or divisions must overlie at least in part the territory of the FCGMA
- One member shall be chosen by the County of Ventura, the member's district must overlie at least in part the territory of the FCGMA
- One member shall be chosen from the members of the city councils of the cities whose territory at least in part overlies the territory of the FCGMA
- One member shall be chosen from the members of the governing boards of the following mutual water companies and special districts not governed by the County Board of Supervisors which are engaged in water activities and whose territory at least in part overlies the territory of the FCGMA: the Alta Mutual Water Company, the Anacapa Municipal Water District, the Berylwood Mutual Water Company, the Calleguas Municipal Water District, the Camrosa County Water District, the Del Norte Mutual Water Company, the Pleasant Valley County Water District, and the Zone Mutual Water Company
- The fifth member of the Board shall be chosen by the other four members from a list of at least five nominations from the Ventura County Farm Bureau and the Ventura County Agricultural Association acting jointly for a two-year term to represent agricultural interests within the territory of the FCGMA. The fifth member shall reside and be actively and primarily engaged in agriculture within the territory of the FCGMA

Final Groundwater Sustainability Plans (GSP) for the Oxnard Subbasin, Pleasant Valley Basin, and Las Posas Valley Basin were prepared in compliance with the SGMA. The Fox Canyon GMA board adopted the GSP at a public hearing on December 13, 2020.

6.2.2.3.2.3 Las Posas Valley Basin GSP

Per the adopted GSP for the Las Posas Valley Basin, the sustainability goal is to maintain a sufficient volume of groundwater in storage so that there is no significant and unreasonable net decline in groundwater elevation or storage over wet and dry climatic cycles. Further, groundwater levels in the Las Posas Basin will be maintained at elevations that are high enough not to constrain the ability of surrounding basins, such as the Oxnard Plain Basin, that would prevent net seawater intrusion after 2040.

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Goals of the GSP in the Las Posas Valley Basin include:

- Control saline water impact front at its current position
- Do not allow groundwater quality to further degrade without mitigation
- No net subsidence due to groundwater withdrawal
- Promote water levels that mitigate or minimize undesirable results (including pumping trough depressions, surface water connectivity, and chronic lowering of water levels)

The GSP assesses net impacts to the basin over both a 50-year period beginning in 2020 and a 30-year period beginning in 2040. Results in the Las Posas Valley Basin may be undesirable between 2020 and 2039, as progress is made toward achieving the sustainability goal of 2040. The 30-year period from 2040 through 2069, is the basis for evaluation and is referred to as the sustaining period.

To achieve the sustainability goal by 2040, the production of groundwater from the East, South, and West Las Posas Basins will need to decline relative to historical extraction rates while taking into account both the potential economic impacts to groundwater users and the estimated sustainable yield of the basins.

The estimated sustainable yield of East Las Posas Management Area, which includes portions of the East Las Posas Basin and South Las Posas Basin, is 17,800 AFY \pm 2,300 AFY. This also includes the safe yield of 1,300 AFY from the Epworth Gravels Management Area (EGMA), an area in the foothills north of the City of Moorpark that sits in the East Las Posas Basins. Without the EGMA, the estimated sustainable safe yield is approximately 15,700 AFY \pm 1,250 AFY to 18,700 \pm 1,500 AFY. The average groundwater extraction rate during the period of 2015 to 2017 within the basins was approximately 20,500 AFY. The uncertainty of the estimated sustainable yield is calculated by taking the difference of the upper limit (18,000 AFY and 1,500 AFY for a total of 20,200 AFY) and the average extraction (20,500 AFY) equaling 300 AFY.

The estimated sustainable yield of the West Las Posas Management Area, which includes a portion of the East Las Posas Basin, is approximately 12,500 AFY with an uncertainty of \pm 1,200 AFY. The average extraction rate during the period of 2015 to 2017 was approximately 14,000 AFY.

6.2.2.3.2.4 Projects to Achieve Sustainability in the East Las Posas Management Area

Projects that will be implemented through FCGMA to achieve sustainability include:

The purchase of Imported Water from Calleguas to replenish the Basin. This will help in the mitigation of basin levels and subsidence from over withdrawal.

Arroyo Simi-Las Posas Arundo Removal Project involves removing the invasive plant species Arundo from approximately 324 acres of land along the Arroyo Simi-Las Posas corridor. This plant species is estimated to consume 6 to 25 AFY per acre. Arroyo Simi-Las Posas Arundo removal could result in an additional 2,680 AFY of recharge into the basins.

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- a. Arroyo Simi-Las Posas Water Acquisition Project would involve the purchase of recycled water from the City of Simi Valley in return for the continuing Simi Valley's discharge of leased water from the Simi Valley Water Quality Control Plant for recharge in the basins.

Stormwater Capture Project, which includes two components. First is the Stormwater Diversion Study, and second is the Stormwater Recharge Study.

- a. Stormwater Diversion Study: In July 2018, the State Water Resources Control Board Division of Water Rights released a document outlining streamlined permitting for groundwater storage and aquifer recharge projects. The Board identified that applications that fit the following criteria can be processed on an accelerated timetable –
 - i. The application only seeks to divert flows that exceed the 90th percentile daily flow level, and no more than 10 to 20 percent of the total flow;
 - ii. The proposed season of diversion is December 1 through March 31; and
 - iii. The applicant demonstrates, based on readily available information, that the 90th percentile flows exceed the demands of downstream users and the needs of the environment.

Based on this streamlined permitting, the District was tasked with performing a hydrologic analysis and preparation of a water diversion model to assess the amount of water that can be diverted and percolated into the Moorpark Wastewater Reclamation Facility (MWRF) percolation ponds on north side of Arroyo Simi.

- b. Stormwater Recharge Study: To investigate feasibility of utilizing percolation ponds at the Moorpark Water Reclamation Facility, Lawrence Berkeley National Laboratory is conducting study including collection and evaluation of data to characterize ponds and recharge & infiltration experiment.

6.2.2.3.2.5 State Involvement and Compliance

Because the SGMA implements local management of groundwater resources, to ensure compliance, the State, through the DWR develops and publishes best management practices for sustainable groundwater management, and it is responsible for reviewing sustainability plans every five years. In addition, it is also tasked with establishing the initial priority for the state's groundwater basins. DWR has announced that the basin designations it finalized under the California Statewide Groundwater Elevation Monitoring (CASGEM) program will serve as the initial prioritization required by the SGMA.

Under the SGMA, the State Water Resources Control Board (SWRCB or State Board) is given the authority to place a groundwater basin in probation for non-compliance, such as if no GSP is developed for a designated basin or if the implantation of the GSP is found insufficient. If a local agency fails to remedy the problem that led to a designation, the State Board may adopt its own interim sustainability plan for the basin.

6.2.2.3.2.6 Significant Future deadlines to meet SGMA compliance

January 31, 2020: GSPs required for critically over drafted basins

Basins designated as high or medium priority and subject to critical conditions of overdraft must be managed under a GSP or GSPs. The State Water Board can initiate probationary status for all or part of a basin if there is no GSP, if the GSP is inadequate, or the GSP implementation will not likely achieve sustainability (Water Code § 10720.7(a)(1), 10735.2(a)(2), 10735.2(a)(3)).

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January 31, 2022: GSPs required for all remaining high and medium priority groundwater basins

All remaining basins designated as high- or medium-priority must be managed under a GSP or GSPs. The State Water Board can initiate probationary status in 2022 for all or part of a basin if there is no GSP, if the GSP is inadequate, or the GSP implementation will not likely achieve sustainability except for basins where groundwater extractions result in significant depletion of interconnected surface waters (Water Code § 10720.7(a)(2), 10735.2(a)(4), and 10735.2(a)(5)(A)).

January 31, 2025: State Water Board actions where extractions impact surface waters

The State Water Board can initiate probationary status for those medium or high priority basin where the GSP is inadequate or implementation is not likely to achieve sustainability and the basin is in a condition where groundwater extractions result in significant depletion of interconnected surface waters (Water Code § 10735(a)(5)(B)).

6.2.2.3.3 Regulatory Conditions

Since 1988, the FCGMA has applied multiple ordinances and policies with regards to well permitting and groundwater protection. A list of historical and current policies and ordinances is available on the FCGMA website (<http://fcgma.org/>). Current ordinances are discussed further below.

Currently, the FCGMA Ordinance Code (Ordinance No. 8) requires that permits be obtained from FCGMA prior to constructing new wells. For wells installed within the FCGMA area, the applicant is required to obtain a permit from the Ventura County Public Works Agency as well. The FCGMA Ordinance Code requires the installation and maintenance of flow meters, with proof of flowmeter accuracy, and reporting of all groundwater extractions semi-annually. In 2018, FCGMA adopted an ordinance that requires all wells within the Agency to be equipped with advanced metering telemetry by October 1, 2020.

In response to severe drought conditions, declining water levels, and seawater intrusion, Emergency Ordinance E was adopted April 11, 2014. This ordinance prohibits the issuance of permits for new groundwater wells associated with new or increased groundwater use, and limits extraction from existing wells (FCGMA 2014). Beginning January 1, 2016, Article 2.C. of the emergency ordinance implemented a 20 percent reduction to Temporary Extraction Allocations (TEA) for municipal agencies. In December 2019, the agency adopted the allocation system to repeal Article 2.C. in the temporary Ordinance E measure. This provides a foundation for long-term sustainability management. Implementation began on January 1, 2020.

Ventura County Watershed Protection District is included as a beneficial user of the Las Posas Valley Basin and is involved in an active stake holder group, the Las Posas Users Group, to discuss and provide feedback to the FCGMA regarding localized management including the GSP. In April 2016, FCGMA developed a proposed extraction allocation system for the Las Posas Valley Basin to help meet the sustainability goal in the SGMA and GSP. According to *An Ordinance To Establish an Extraction Allocation System For the Las Posas Groundwater Basin*, which was passed and adopted by the FCGMA board on December 14, 2020 and will take effect on October 1, 2021, the Las Posas Management Area Allocation Pool No. 2, including VCWWD No. 1 & No. 19, is provided a yield share of 12.59 percent of the

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available yield within the East Las Posas Management Area and 11.89 percent of the available yield within the West Las Posas Management area.

As discussed above, in 2020, VCWWD No. 1's set allocation TEA was 1,756 AFY. In FY2020 the District produced 1,965 AF of groundwater from four of their wells in the East Las Posas Basin. No groundwater was produced from Wells No. 96 or 97. See Table 6-1 for local groundwater production in FY2020. The Initial Allocation established by FCGMA pursuant to the goals in the GSP and SGMA for the District in 2021 is 2,195 AFY. This is subject to change based on basin evaluations every five years.

6.2.2.4 Past Five Years

Over the past five years, VCWWD No. 1 has utilized its five wells to extract groundwater for potable uses from the East Las Posas Basin with Well No. 97 being taken off-line in 2017. These groundwater wells are in the north-western portion of the District's service area. In 2016 the FCGMA, through Emergency Ordinance E., allotted VCWWD No. 1 an allocation (TEA) of 1,756 AFY from the East Las Posas Basin. As approved by FGCMA, the allocation for calendar year 2020 was increased to 2,195 AFY. See Table 6-1 for a summary of ground water production over the past five years.

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Submittal Table 6-1 Retail: Groundwater Volume Pumped						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
<input type="checkbox"/>	All or part of the groundwater described below is desalinated.					
Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2016	2017	2018	2019	2020
<i>Add additional rows as needed</i>						
Alluvial Basin	East Las Posas	2130	1744	1526	1544	1966
TOTAL		2,130	1,744	1,526	1,544	1,966
NOTES: Values presented account for FY (July) to June						

6.2.3 Surface Water

The District is not currently utilizing surface waters as a supply.

6.2.4 Stormwater

The District is not currently utilizing storm waters as a supply.

6.2.5 Wastewater and Recycled Water

In 2003, the District constructed tertiary treatment facilities at its Moorpark Water Reclamation Facility (MWRF) in and began distributing tertiary treated water to customers for agricultural irrigation, landscape irrigation, grading, and dust control purposes. Currently, the plant has a capacity of 5.0 mgd to treat wastewater to secondary treatment levels and 3.0 mgd capacity to bring the effluent to tertiary treatment levels but is only permitted to treat 1.5 mgd to tertiary levels. The tertiary treated effluent meets applicable requirements and standards per Title 22 California Code of Regulations.

In FY 2020, the MWRF produced 966 AF of tertiary treated recycled water. Approximately 941 AF of recycled water was sold to its customers. Currently, there are thirteen (13) customers that have permits to purchase and reuse recycled water from VCWWD No. 1.

6.2.5.1 Recycled Water Coordination

Ventura County Waterworks District No. 1 is the sole entity responsible for the collection, treatment, disposal and distribution of wastewater and recycled water in its service area. This includes the City of Moorpark and the adjacent unincorporated areas of North-east Ventura County. Since 2003, the District has expanded operation and capacity at the MWRF to meet the growing recycled water demand.

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6.2.5.2 Wastewater Collection, Treatment, and Disposal

VCWWD No.1 collects sanitary wastewater flows within its service area and conveys the flows to the Moorpark Water Reclamation Facility (MWRF). The MWRF is located along California State Route 118 just west of the Moorpark city limits. The District owns, operates, and maintains the wastewater collection system and the reclamation facility. Metered wastewater flows from over 10,000 customers averaged 1.97 mgd (2,206 AFY) for 2020 as shown in Table 6-2. The reclamation facility has a capacity of 5.0 mgd (5,601 AFY) for primary and secondary treatment and can treat approximately 3.0 mgd (3,360 AFY) to tertiary levels, but currently is only permitted to treat 1.5 mgd (1,680 AFY) to tertiary levels that meet Title 22 requirements.

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020						
<input type="checkbox"/>	There is no wastewater collection system. The supplier will not complete the table below.					
100	Percentage of 2020 service area covered by wastewater collection system <i>(optional)</i>					
100	Percentage of 2020 service area population covered by wastewater collection system <i>(optional)</i>					
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i> <i>Drop Down List</i>
Ventura County Waterworks District No. 1 (VCWWD No. 1)	Metered	2,206	VCWWD No. 1	Moorpark Wastewater Reclamation Facility (MWRF)	Yes	No
Total Wastewater Collected from Service Area in 2020:		2,206				
NOTES:						

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Quantified volumes for wastewater treatment and discharge within the Districts' service area are shown in Table 6-3.

Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020											
<input type="checkbox"/> No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.											
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional) ²	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area? <i>Drop down list</i>	Treatment Level <i>Drop down list</i>	2020 volumes ¹				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area ³	Recycled Outside of Service Area	Instream Flow Permit Requirement
Moorpark Wastewater Reclamation Facility (MWTF)	MWRF	Percolation Ponds		Percolation ponds	No	Tertiary	2,206	1,242	941	0	
						Total	2,206	1,242	941	0	0
¹ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3. ² If the Wastewater Discharge ID Number is not available to the UWMP preparer, access the SWRCB CIWQS regulated facility website at https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=RegulatedFacility											
NOTES: Approximately 966 AF of Recycled Water was produced in FY2020 at MWRF. Recycled Water volume shown in this table reflects recycled water purchases within the service area and the difference from production to retail sales is included in discharged treated wastewater.											

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6.2.5.3 Recycled Water System Description

The reclaimed water treatment facility and distribution system were completed in September 2003 with reclaimed water production starting that same month delivering water for turf and landscape irrigation at Moorpark Country Club Golf Course. In 2012, the reclaimed water distribution facility constructed Phase 2 and 3a which expanded the capacity to 1.5 mgd (1680 AFY). In 2017, the recycled water distribution system was further expanded (Phase 4) with the addition of a booster pump station, capable of supplying 1,800 gpm (2,900 AFY), and the construction of 12,700 linear feet of pipeline to a second golf course (Rustic Canyon Golf Course) for irrigation. The expansion also serves the City of Moorpark Landscape Maintenance District which delivers reclaimed water for landscape irrigation purposes to its own facilities as well as Homeowners Associations. As approved by the Regional Water Quality Control Board Division of Drinking Water in September 2017, three additional permittees were approved to receive tertiary treated reclaimed water from VCWWD No. 1. Currently, the facility has the capacity to treat approximately 3.0 mgd (3,360 AFY) of wastewater to tertiary levels but is only permitted to treat 1.5 mgd.

As of 2020, the District provided recycled water to thirteen (13) customers for reuse, including the plant itself. Recycled water uses vary from facility operations, grading, dust control, golf course and landscape irrigation, and agricultural (lemon) irrigation. Recycled water purchases in 2020 by user is shown in DRAFT Submittal Table 6-D. In 2020, the plant produced 966 AF and sold 941 AF of recycled water. The MWRF also reused water for operational and landscaping purposes at its own facility.

The MWRF has plans to expand the tertiary treatment distribution to 2,020 AFY by 2040. Current and projected recycled water direct beneficial uses within the District's water service area is shown in DRAFT Submittal Table 6-6. A comparison of 2015 projected recycled water uses for 2020 compared with actual 2020 use is shown in DRAFT Submittal Table 6-5. Methods to expand future recycled water use are shown in in DRAFT Submittal Table 6-6.

6.2.5.4 Potential, Current, and Projected Recycled Water Uses

Current uses of recycled water with the service area of VCWWD No. 1 include ground water recharge, golf course and landscape irrigation, agricultural irrigation, grading and dust control. Currently, there are thirteen (13) permittees that can purchase recycled water from the District, including the plant itself. These users and intended uses are shown in DRAFT Submittal Table 6-D.

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Submittal Table 6-D: VCWWD NO. 1 - FY 2020 Recycled Water Production		
User	Purchased (AF)	Intended Use
Moorpark Country Club Golf Course	375	Golf Course Irrigation
Rustic Canyon Golf Course	310	Golf Course Irrigation
MWRF	150	(Internal Reuse) Facilities Operations and Landscape Irrigation
Guadalupe Guzman	31	Agricultural Irrigation (lemons)
Country Club Estates-Moorpark Homeowners Association (HOA)	25	Landscape Irrigation
Lazy Lemon Farms, LLC	23	Agricultural Irrigation (lemons)
Waters Family Farms, INC.	20	Agricultural Irrigation (lemons)
City of Moorpark	4	Landscape Irrigation
Ventura County Waterworks Well No. 20	2	Facilities Operations and Landscape Irrigation
Ventura County Waterworks RW Reservoir	0.2	Facilities Operations and Landscape Irrigation
Tom Lucas	0	Agricultural Irrigation (nursery)
Ventura County PWA	0	Dust Control
Warwar Properties	0	Agricultural Irrigation (lemons)
Total	941	

For future recycled water use planning, the District forecasts that customers will be added, and recycled water supply will increase to an additional 500 AFY in 2025 and up to 1,100 AFY by 2040. Currently, the plant is able to meet the projected recycled water demand of 2,200 AFY in 2040 with its capacity at 3.0 mgd (3,360 AFY), but to do so would require a new permit from RWQCB allowing additional treatment up to the plant's capacity.

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Submittal Table 6-4: Recycled Water Direct Beneficial Uses Within Service Area									
<div> <div></div> </div>		Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.							
Name of Supplier Producing (Treating) the Recycled Water:		VCWWD No. 1							
Name of Supplier Operating the Recycled Water Distribution System:		VCWWD No. 1							
Supplemental Water Added in 2020 (volume)		0							
Source of 2020 Supplemental Water									
Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water (Quantity) (AFY)	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040
Agricultural irrigation	Irrigation of lemons		Irrigation of lemons	Tertiary	75	100	100	100	100
Landscape irrigation (excludes golf courses)	General Landscape irrigation		General Landscape irrigation	Tertiary	29	500	500	500	650
Golf course irrigation	Turf and Landscape irrigation		Turf and Landscape irrigation	Tertiary	685	900	1,050	1,200	1,200
Industrial use	Facilities Operation & Storage		Facilities Operation & Storage	Tertiary	152	100	150	200	250
				Total:	941	1,600	1,800	2,000	2,200
Notes: Supply numbers are subject to reallocation each year and projected numbers could vary depending on changing allocations.									

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Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual		
<input type="checkbox"/>	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.	
Beneficial Use Type	2015 Projection for 2020	2020 Actual Use
<i>Insert additional rows as needed.</i>		
Agricultural irrigation	100	75
Landscape irrigation (exc golf courses)	300	29
Golf course irrigation	900	685
Industrial use	100	152
Total	1,400	941
NOTE:		

6.2.5.5 Actions to Encourage and Optimize Future Recycled Water Use

As discussed previously, the District anticipates that customers will be added based on the growing demand trend to utilize recycled water in the area. See Table 6-6 for recycled water use expansions.

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
<input type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
<i>Add additional rows as needed</i>			
Customer/Mains	Add/retrofit customers and construct transmission mains to users	2020 - 2025	500
Customer/Mains	Add/retrofit customers and construct transmission mains to users	2025 - 2040	600
Total			1,100
NOTES:			

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6.2.6 Desalinated Water

VCWWD No. 1 does not currently have any plans to implement seawater desalination to increase water supply on its own. VCWWD No. 1 will continue purchasing water through Calleguas. In 2015, Calleguas began exploring the feasibility of implementing seawater desalination as a baseline supply designed to meet essential water demands during a Stage 3 water shortage. A preliminary assessment indicated that the cost of a seawater desalination facility would be cost prohibitive, in part because much of Calleguas' demand occurs over 20 miles inland and at an elevation up to 1,100 feet and the expense to run the seawater reverse osmosis units. Seawater desalination will be further evaluated by Calleguas along with other water supply alternatives to identify solutions that will meet Calleguas' reliability needs in the most cost-effective and environmentally responsible manner.

6.2.7 Water Exchanges and Transfers

The District currently does not participate with other water agencies on water exchanges or transfers into or out of the District's water service area and none are planned at this time. However, the District can provide Calleguas well water in the event of an emergency and has the potential to make an inter-tie with Camrosa Water District and Ventura County Water Works District No. 19 for emergencies.

6.2.8 Future Water Projects

As discussed in Section 3.1.4, the District is planning two future water projects. One will increase water storage capacity by constructing an additional reservoir along with infrastructure, and another that may lower the dependence on imported water. The projects are discussed below.

6.2.8.1 Stockton Reservoir – VCWWD No. 1 (Moorpark)

Currently in the design phase, the Stockton Reservoir project will replace an existing 0.5-million-gallon storage reservoir with a 1-million-gallon storage reservoir allowing the District to store additional water at this location. The existing reservoir is in the 994-pressure zone in the northwest portion of the District and is at the end of its useful service life. The new Stockton Reservoir will be a 1.0-million-gallon steel tank located on Stockton Road near the existing tank.

6.2.8.2 Moorpark Desalter – VCWWD No. 1 (Moorpark)

The District is in the planning stages of the Moorpark Desalter Project, which is a groundwater production and treatment system that could provide up to 5,000 AFY of potable water for customers in the District's water service area. As part of the project, 10 to 18 extraction wells will be constructed to a depth of 250 feet within or near an active agricultural field east of Hitch Boulevard between Los Angeles Avenue and the Arroyo Las Posas/Arroyo Simi. The proposed Moorpark Desalter Treatment Plant will be located east of the existing Moorpark Water Reclamation Facility (MWRP), which is located at 9550 East Los Angeles Avenue just west of Moorpark City limits along California State Route 118.

The wells will extract approximately 6,000 AFY of poor-quality, brackish groundwater from a shallow aquifer in the South Las Posas Basin and pump the groundwater via a new transmission pipeline to the

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proposed treatment plant, where the water will be treated to State drinking water standards through a membrane treatment process that includes filters, low-pressure reverse osmosis, disinfection, and chemical water conditioning. The treated water will be connected to VCWWD No.1's water distribution system. Brine produced by the reverse osmosis process will be transported out of the watershed through the Salinity Management Pipeline (SMP), currently being constructed by Calleguas. The SMP will convey brine from Moorpark to the ocean discharge point at Point Hueneme.

The Project is a key element in the Northern Reach Renewable Water Management Plan which was developed as part of the Calleguas Creek Boron, Chloride, Total Dissolved Solids, and Sulfate Total Maximum Daily Load Compliance Plan. The Project will supplement imported water supplies, remove poor quality groundwater, allow higher quality storm flows to recharge the shallow unconfined groundwater basin, and improve the groundwater quality of the overall basin.

The Ventura County Public Works Agency's Water and Sanitation Department received a \$7 million Proposition 84 grant from the State Department of Water Resources through the Watershed Coalition of Ventura County for the Moorpark Desalter Project.

The Project, which has an overall estimated cost of \$50 million to complete, will remove up to 18 million pounds of salt per year from the Las Posas Basin and provide up to 5,000 acre-feet per year of high-quality water for use by customers in the VCWWD No. 1 water service area. The project is still in the planning stages.

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Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
<input type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
<input type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down List</i>	Expected Increase in Water Supply to Supplier <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Supplier Name</i>				
<i>Add additional rows as needed</i>						
Recycled Water System Expansion	No		Near Term Expansion of Plant tertiary treatment capacity/construct conveyance facilities	2020 - 2025	All Year Types	500
Moorpark Desalter	No		Desalinate brackish groundwater	2030	All Year Types	5,000
Recycled Water System Expansion	No		Long Term Expansion of Plant tertiary treatment capacity/construct conveyance facilities	2025 - 2040	All Year Types	600
NOTES:						

6.2.8.3 Future Recycled Water System Expansions

As discussed in Section 6.2.5, 966 AFY of wastewater was treated to tertiary levels with 941 AFY of recycled water purchased by thirteen customers in 2020. The District forecasts that future customers will be added, and recycled water supply will increase to an additional 500 AFY by 2025 and up to an another additional 1,100 AFY by 2040. To meet demand, a permit would be required to capitalize on the plant's full tertiary treatment capacity with a recycled water use of 2,200 AFY by 2040.

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6.2.9 Summary of Existing and Planned Sources of Water

6.2.9.1 Description of Supplies

The primary source of water supply for the District has been water imported from MWD through the local wholesale agency, Calleguas Municipal Water District. The imported water is primarily treated water from the Sacramento-San Joaquin River Delta in Northern California, which conveyed via State Water Project (SWP) facilities. In 2020, the District supplied a total of 7,112 AF from imported water purchased from Calleguas, which accounted for 71 percent of the total water supply including recycled water.

The second largest source of water is groundwater extracted from the East Las Posas Groundwater Basin via six groundwater wells owned and operated by the District. Most of the groundwater meets all State and Federal water quality standards for drinking water with the exception that treatment is required at two of the well sites (Wells No. 15 and 20) to lower iron and manganese levels below the State Secondary Maximum Contaminant Level (MCL) requirements. Each well site has chlorine injection before being pumped into the potable water distribution system. In 2020, the District supplied a total of 1,966 AF of groundwater, which accounted for 20 percent of the total water supply including recycled water.

A summary of expected future water supply projects or programs for the District is shown in Table 6-8.

6.2.9.2 Quantification of Supplies

Actual quantified water supplies for 2020 are shown in DRAFT Submittal Table 6-8. Water supply projections for 2025 to 2040 are shown in DRAFT Submittal Table 6-9.

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Submittal Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2020		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Actual Volume	Water Quality Drop Down List	Total Right or Safe Yield (optional)
Add additional rows as needed				
Groundwater (not desalinated)	Fox Canyon Groundwater Management Area	1,966	Drinking Water	2,195
Purchased or Imported Water	Calleguas Municipal Water District	7,112	Drinking Water	10,723
Recycled Water	Moorpark Wastewater Reclamation Facility	941	Recycled Water	1,680
Total		10,019		14,598
NOTES:				

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Submittal Table 6-9 Retail: Water Supplies — Projected						
Water Supply	Additional Detail on Water Supply	Projected Water Supply Report To the Extent Practicable				
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		2025	2030	2035	2040	2045 (opt)
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Add additional rows as needed						
Purchased or Imported Water (a)	Purchased from CMWD	7,307	2,534	2,787	3,015	3,267
Groundwater (not desalinated)	East Las Posas Basin	2,195	2,195	2,195	2,195	2,195
Recycled Water	MWRF	1,600	1,800	2,000	2,200	2,200
Desalinated Water - Groundwater	Moorpark Desalter Project	0	5,000	5,000	5,000	5,000
Total		11,102	11,529	11,982	12,410	12,662
NOTES: Imported Water volume was calculated based on domestic water demands less groundwater supply and desalinated groundwater supply as applicable. (a) Imported water does not include surplus water. Surplus water is discussed in Chapter 7 as part of the reliability analysis						

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It should be noted, as discussed in Section 7.2, MWD expects its supplies to exceed future water demands from its customer base during normal-year, single-dry year, and extended drought periods. This ensures the reliability of imported water to VCWWD No.1 will meet projected demands into the future.

6.2.10 Special Conditions

6.2.10.1 Climate Change Impacts

Climate change impacts to VCWWD No. 1's water supplies and activities related to climate change concerns are discussed in Section 4.5.

Based on the Groundwater Sustainability Plan for the Las Posas Valley Basin, a literature review in support of the U.S. Bureau of Reclamation's Los Angeles Basin Stormwater Conservation Study Task 3.1 Report found that the following changes are anticipated in Southern California due to global climate change (Bureau of Reclamation 2013):

- increased temperature (1°C to 3°C, or 1.8°F to 5.4°F)
- Increased evaporation rate
- Decrease in annual precipitation (2% to 5%)
- Increase in extreme precipitation events

Though it is difficult to quantify what affect climate change will have, it is expected that supply will be negatively impacted. For local production, increased evaporation, increased temperature, and a decrease in annual precipitation may reduce surface water from infiltrating into groundwater basins resulting in lower groundwater levels. These impacts may be felt statewide and have impact on imported water supplies to the District.

6.2.10.2 Regulatory Conditions and Project Development

Imported water: Regulatory conditions that could affect imported water supply to VCWWD No. 1's service include any change in allocation either directly from Calleguas or MWD. Since MWD has a contract allocation to obtain water from the SWP and the Colorado River, any changes to these contracted sources can influence the supply available to Calleguas which may affect the supply to the District. Also, during periods of reduced water measures or drought, Calleguas and MWD could implement Water Shortage Action Plans that could affect supply to VCWWD No. 1.

Groundwater: Groundwater production in VCWWD No. 1's service area is regulated by the FCGMA through State law and Local ordinances. Local ordinances provide VCWWD No. 1 with a set allocation (TEA) as described in section 6.2.2.3.3. The adopted Groundwater Sustainability Plan sets a yield share for each groundwater producer as described in sections 6.2.2.3.2.3 and 6.2.2.3.3. Any changes to the local groundwater ordinances, Groundwater Sustainability Plans, or State laws could influence the groundwater supply available to VCWWD No. 1. Future projects, such as the Moorpark Desalter project, as described in 6.2.8.2, will provide additional 5,000 AFY of supply to the District.

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Recycled Water: Production and distribution of recycled water is regulated by the California State Water Resources Control Board. Any changes in the regulations applicable to the production, distribution and disposal of recycled water may have an impact on the supply produced at the MWRF.

6.2.10.3 Other Locally Applicable Criteria

Local criteria that may affect water supply for VCWWD No. 1 is only applicable as it pertains to local groundwater production. Local criteria influencing groundwater production includes groundwater basin levels as described in the Groundwater Sustainability Plans, see section 6.2.2.3.2.3.

6.3 Submittal Tables

Optional Planning Tool was not used.

6.4 Energy Intensity

Per Water Code §10631.2. (a) an UWMP shall include, to the extent possible, an estimate of energy used to extract, divert, convey, treat, and distribute water supplies. Estimated energy consumption and estimated energy Intensity for groundwater extraction, pumping, pressure reducing, and storage for the VCWWD No. 1 potable water system for FY2020 is shown DRAFT Submittal Table 6-E. Energy consumption information was made available by Southern California Edison from metered facilities that supply and distribute water within the District's system.

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Submittal Table 6-E: VCWWD No. 1 Potable System FY2020 Estimated Energy		
Facility Description	kWh	SCE Meter No.
Meridian Tank	12,441	222012-367885
Skyline Reservoir	12,178	222014-082077
Fairview Reservoir	7,287	222014-025778
Dalaway Pressure Reducing Station	1,334	222014-020745
Well #15	1,337,143	V349N-010521
Well #20	881,116	359150-001393
Well #95	101,445	254000-032076
Well #96	N/A	V349N-009470
Well #97	830	259000-001285
Well #98	799,071	V349N-006617
Fruitvale Booster Pump Station	4,904	25600-221959
Grimes Booster Pump Station	2,595	259000-062704
Home Acres Booster Pump Station	28,300	222013-990123
Palmer Booster Pump Station	249,279	259000-058555
Roseland Booster Pump Station	34,492	256000-121813
S & K Booster Pump Station	103,390	259000-077192
Walnut Canyon Booster Pump Station	78,227	256000-198858
Total Energy Use (kWh)	4,453,101	
VCWWD No. 1 Potable System FY2020 Estimated Energy Intensity		
Total Annual Potable System Volume (AF)	9,078	
Energy Intensity (kWh/AF)	491	

Chapter 7 Water Service Reliability and Drought Risk Assessment

7.1 Water Supply Reliability and Drought Risk Assessment

The UMWP requires urban water suppliers to assess water supply reliability and compare total projected water use with the expected water supply at a minimum, over the next twenty years in five-year increments. The UWMP also requires an assessment for a single dry year and five consecutive dry years. This chapter presents the reliability assessment for VCWWD No.1 service area.

It is the goal of VCWWD No. 1 to deliver a reliable and high-quality water supply for customers, even during dry periods. Based on conservative water supply and demand assumptions over the next 25 years, in combination with conservation of non-essential demand during certain dry years, VCWWD No.1 successfully achieves this goal as shown in the following sections.

7.2 Water Supply Reliability Assessment

7.2.1 Constraints on Water Sources and Response Programs

Two of the most significant constraints on water supply for the District and for Southern California has been the drought that started in 2012 and persisted for parts of California into 2019, and Sacramento-San Joaquin River Delta ecosystem issues that affect imported water supply from the State Water Project. The water conditions that the region faced in 2020 were shaped by supply conditions and are summarized below¹⁵:

- MWD basins have historically experienced large swings in annual hydrologic conditions; however, these swings have largely been buffered through MWD's efforts and large volume of storage
- Dramatic swings in annual hydrologic conditions have impacted water supplies available from the State Water Project (SWP) over the last decade. MWD has been building dry-year storage reserves, water banking and transfers have helped manage the wide swings in SWP allocations
- With approximately 30 percent of Southern California's water supply transported across the Bay-Delta, its declining ecosystem has led to reduction in water supply deliveries. Operational constraints will likely continue until a long-term solution to the problems in the Bay-Delta is identified and implemented
- Water quality challenges, such as algae toxins, PFAS, and the identification of constituents of emerging concern, have a significant impact on the region's water supply conditions and underscore the importance of flexible and adaptive regional planning strategies

¹⁵ MWD Final Draft 2020 UWMP

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7.2.1.1 Constraints on Water Sources and Response Programs

This section provides a general description of the water quality of the supplies delivered by VCWWD No. 1. The District is committed to providing its purveyors with high quality water meeting all federal and state primary drinking water standards. Some contaminants are naturally-occurring minerals. In some cases, the presence of animals or human activity can contribute to the constituents in the source waters.

The District continues to maintain high standards in their effort to provide a reliable water source. More information is provided in the 2019 VCWWD No.1's Water Quality Report.

7.2.2 Year Type Characterization

Table 7-1 is used to report the characteristics of water supplies during the year types required for the water service reliability assessment. The three-year types are as follows:

- **Normal Year.** This condition represents the water supplies a Supplier considers available during normal conditions. This could be a single year or averaged range of years that most closely represents the average water supply available to the Supplier. In this Guidebook, DWR uses the terms average and normal interchangeably when addressing the water year type.
- **Single Dry Year.** The single dry year is the year that represents the lowest water supply available to the Supplier.
- **Five-Consecutive-Year Drought.** The five-consecutive year drought for the DRA would be the driest five-year historical sequence for the Supplier (Water Code Section 10612). For the water service reliability assessment, Suppliers are encouraged to use the same five-year sequence for their water service reliability assessment. However, they may choose to use a different five-consecutive year dry period such as the lowest average water supply available to the Supplier for five years in a row. Suppliers are encouraged to characterize the five-consecutive year drought in a manner that is best suited for understanding and managing their water service reliability.

7.2.2.1 MWD Reliability by Type of Year

In MWD's 2020 UWMP dated June 2021, MWD estimated supply capabilities and projected demands for a normal year based on an average of hydrology analysis for the years 1922 through 2017; for a single dry-year based on a repeat of the hydrology in 1977; and for five consecutive years from 1988 to 1992. These estimates are summarized in Tables 2-4, 2-5, and 2-6 of MWD's 2020 UWMP, which are included in Appendix G of this report for reference.

MWD 2020 UWMP Table 2-4 summarizes the sources of supply for the single dry year (1977 hydrology). MWD 2020 UWMP Table 2-5 provides results for the average of the five consecutive dry years. These tables show that MWD can provide reliable water supplies under both the single driest year and the multiple dry year scenarios. MWD Table 2-6 reports the expected situation on the average over all historic hydrology from 1922 to 2017.

A summary of the information provided in MWD Tables 2-4, 2-5, and 2-6 is shown in Table 7-A. For each of these scenarios there is a projected surplus of supply in every forecast year. Projected supply

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surpluses, based on the capability of current supplies, range from 0.1 percent to 87 percent of projected demands. With the inclusion of supplies under development, potential surpluses range from 5 percent to 110 percent of projected demands. MWD's supply capabilities are discussed further in their 2020 UWMP. MWD's likelihood of having adequate supply capability to meet projected demands, without implementing the Water Supply Allocation Plan (WSAP), is dependent on its storage resources.

Submittal Table 7-A Retail: MWD Supply Capability and Projected Demands (AFY)					
Single Dry Year MWD Supply Capability and Projected Demands (1977 Hydrology)					
	2025	2030	2035	2040	2045 (Opt)
Capability of Current Programs	2,727,000	2,791,000	2,789,000	2,551,000	2,572,000
Projected Demands	1,402,000	1,387,000	1,408,000	1,431,000	1,457,000
Projected Difference	1,325,000	1,404,000	1,381,000	1,120,000	1,115,000
Projected Surplus % ^(a)	49%	50%	50%	44%	43%
Supplies under Development	0	0	0	0	0
Potential Surplus	1,325,000	1,404,000	1,381,000	1,120,000	1,115,000
Potential Surplus % ^(a)	49%	50%	50%	44%	43%
Drought Lasting Five Consecutive Water Years MWD Supply Capability and Projected Demands (1922-2017 Hydrology)					
	2025	2030	2035	2040	2045 (Opt)
Capability of Current Programs	2,198,000	2,210,000	2,209,000	1,973,000	1,995,000
Projected Demands	1,412,000	1,414,000	1,435,000	1,457,000	1,484,000
Projected Difference	786,000	796,000	774,000	516,000	511,000
Projected Surplus % ^(a)	36%	36%	35%	26%	26%
Supplies under Development	10,000			235,000	213,000
Potential Surplus	796,000	796,000	774,000	751,000	724,000
Potential Surplus % ^(a)	36%	36%	35%	38%	36%
Average Year MWD Supply Capability and Projected Demands (1922-2017 Hydrology)					
	2025	2030	2035	2040	2045 (Opt)
Capability of Current Programs	3,932,000	3,962,000	3,960,000	3,598,000	3,622,000
Projected Demands	1,274,000	1,256,000	1,273,000	1,294,000	1,319,000
Projected Difference	2,658,000	2,706,000	2,687,000	2,304,000	2,303,000
Projected Surplus % ^(a)	68%	68%	68%	64%	64%
Supplies under Development	47,000	13,000	13,000	372,000	347,000
Potential Surplus	2,705,000	2,719,000	2,700,000	2,676,000	2,650,000
Potential Surplus % ^(a)	69%	69%	68%	74%	73%

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(a) As a percentage of projected supplies. *Source – 2020 MWD UWMP*

All storage capability figures shown in Metropolitan’s 2020 UWMP reflect actual storage program conveyance constraints. It is important to note that under some conditions, Metropolitan may choose to implement the WSAP in order to preserve storage reserves for a future year, instead of using the full supply capability. This can result in impacts at the retail level even under conditions where there may be adequate supply capabilities to meet demands.

7.2.2.2 Calleguas Reliability by Type of Year

In Calleguas’ 2020 UWMP dated June 2021, the estimated supply capability and projected demands for a normal year based on an average of hydrology analysis for the years 1922-2004; for a single dry-year based on a repeat of the hydrology in the year 1977; and for five consecutive years of 1988 to 1992 are presented. These estimates are summarized in Tables 7-1 through 7-4 of the Calleguas 2020 UWMP, which are included in Appendix G of this report for reference.

The available supplies (as a percentage of average supply) shown in Table 7-B are those estimated for the Calleguas service area that includes VCWWD No. 1. MWD and Calleguas develop independent supply/demand forecasts for the Calleguas service area.

Table 7-B: Basis of Water Year Data for Calleguas		
Year Type	Base Year	Available Supplies from Calleguas if Year Type Repeats
		% of Average Supply
Average Year	1922 to 2017	100%
Single-Dry Year	1977	95%
Consecutive Dry Years 1st Year	1988 to 1992	107%
Consecutive Dry Years 2nd Year	1988 to 1992	113%
Consecutive Dry Years 3rd Year	1988 to 1992	115%
Consecutive Dry Years 4th Year	1988 to 1992	93%
Consecutive Dry Years 5th Year	1988 to 1992	99%

As shown in Table 7-C, the estimated supply of water as determined by MWD during an average (normal) year, together with Calleguas’ recycled water supply, is sufficient to meet the Calleguas’ projected normal year water demands from 2020 through 2040. Also provided in Table 7-C is the estimated demand on Calleguas during a normal year in the event new local water production facilities are not developed as forecasted by retail purveyors. These local projects include groundwater desalters and recycled water system start-ups or expansions such as the VCWWD No. 1 Moorpark Desalter Project and expansions to the MWRf recycled water system, respectively,

As shown in Table 7-C, the estimated supply of water as determined by MWD during an average (normal) year, together with Calleguas’ recycled water supply, is sufficient to meet the Calleguas’ projected normal year water demands from 2020 through 2040. Also provided in Table 7-C is the estimated demand on Calleguas during a normal year in the event new local water production facilities, i.e., groundwater desalters and recycled water systems, are not developed as forecasted by retail purveyors.

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Submittal Table 7-C Retail: Calleguas Supply Capability and Projected Demands (AFY)						
Average Year Calleguas Supply Capability and Projected Demands (1922-2017 Hydrology)						
		2025	2030	2035	2040	2045 (Opt)
	Capability of Current Programs	117,298	118,570	120,694	122,069	122,439
	Projected Demands	90,629	91,912	94,059	95,447	95,821
	Projected Difference	26,669	26,658	26,635	26,622	26,618
Single Dry Year Calleguas Supply Capability and Projected Demands (1977 Hydrology)						
		2025	2030	2035	2040	2045 (Opt)
	Capability of Current Programs	111,706	112,972	115,093	116,468	116,833
	Projected Demands	85,038	86,317	88,459	89,848	90,217
	Projected Difference	26,668	26,655	26,634	26,620	26,616
Drought Lasting Five Consecutive Water Years Calleguas Supply Capability and Projected Demands (1922-2017 Hydrology)						
		2025	2030	2035	2040	2045 (Opt)
First Year	Capability of Current Programs	117,102	117,061	118,856	120,539	121,320
	Projected Demands	89,602	89,561	91,356	93,039	93,820
	Projected Difference	27,500	27,500	27,500	27,500	27,500
Second Year	Capability of Current Programs	125,349	125,305	127,243	129,059	129,902
	Projected Demands	97,849	97,805	99,743	101,559	102,402
	Projected Difference	27,500	27,500	27,500	27,500	27,500
Third Year	Capability of Current Programs	124,710	124,665	126,630	128,473	129,328
	Projected Demands	97,210	97,165	99,130	100,973	101,828
	Projected Difference	27,500	27,500	27,500	27,500	27,500
Fourth Year	Capability of Current Programs	104,460	104,426	105,925	107,330	107,982
	Projected Demands	76,960	76,926	78,425	79,830	80,482
	Projected Difference	27,500	27,500	27,500	27,500	27,500
Fifth Year	Capability of Current Programs	110,171	110,135	111,744	113,254	113,954
	Projected Demands	82,671	82,635	84,244	85,754	86,454
	Projected Difference	27,500	27,500	27,500	27,500	27,500

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As shown in Table 7-C, the estimated allocation of water from Metropolitan during a dry year is sufficient to meet the Calleguas' projected dry year imported water demands from 2025 through 2045. Table 7-C also shows the water supply versus demand evaluation under multiple dry year hydrologic conditions. Sufficient supplies are projected to be available for the years 2025 through 2045. Based on the estimates in Table 7-C, estimated increases in Calleguas service area demands as a percentage of normal demands assuming planned local production projects by Calleguas purveyors are constructed for dry-year and multiple-dry year conditions are shown in Table 7-D. Based on the estimates made in Table 7-C, estimated Calleguas supply capability, which is available from the MWD supply to Calleguas as a percentage of estimated Calleguas service area demands assuming planned local projects are implemented, for normal-year, dry-year and multiple-dry year conditions are shown in Table 7-E.

DRAFT Submittal Table 7-D Retail: Estimated Calleguas WSA Demands (%)					
Demand-Type Year	2025	2030	2035	2040	2045 (Opt)
Single Dry Year	-6.2%	-6.1%	-6.0%	-5.9%	-5.9%
Multiple Dry Years	-1.1%	-2.6%	-2.9%	-2.5%	-2.1%

DRAFT Submittal Table 7-E Retail: Estimated Calleguas Supply Capability (%)					
Demand-Type Year	2025	2030	2035	2040	2045 (Opt)
Normal Year	29%	29%	28%	28%	28%
Single Dry Year	31%	31%	30%	30%	30%
Multiple Dry Years	30.7%	30.7%	30.1%	29.6%	29.3%

7.2.3 Water Service Reliability

Every urban water supplier shall include, as part of its UWMP, 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 CWC Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

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7.2.3.1 Water Service Reliability – Normal Year

Projected normal year VCWWD No. 1 supplies and demands as developed in Table 6-9 and Table 4-3, respectively, are shown in Table 7-2.

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals (autofill from Table 6-9)	11,102	11,529	11,982	12,410	12,662
Demand totals (autofill from Table 4-3)	11,102	11,528	11,982	12,410	12,662
Difference	0	1	0	0	0
NOTES:					

7.2.3.2 Water Service Reliability – Single Dry Year

The District's imported water demands are estimated to decrease by approximately six percent during single dry year and one percent during multiple dry years consistent with the estimated projections in Calleguas water demands shown in Table 7-D. Projected single-dry-year and multiple-dry-year District supplies and demands are shown in Table 7-3 and Table 7-4, respectively, which includes estimated surplus imported water supply from Calleguas based on the percentage surplus shown in Table 7-E.

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals	13,367	12,315	12,818	13,314	13,643
Demand totals	10,649	11,175	11,415	11,632	11,870
Difference	2,718	1,140	1,403	1,682	1,773
NOTES: Demand and supply projections assume groundwater and recycled water remain the same and imported water is adjusted per tables 7-D and 7-E.					

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Calleguas distributes imported water on a wholesale basis to 19 local purveyors, including VCWWD No.1, who in turn delivers water to area residents, businesses, and agricultural customers. Approximately three-quarters of Ventura County residents (roughly 630,000 people) depend on Calleguas for all or part of their water. Calleguas is projecting a supply surplus for every 5-year year increment through 2040 for normal, single-dry, and multiple-dry year demand conditions. The District is planning to increase recycled water use to 2,200 AFY by 2040 but will need to update the current permit.

7.2.3.3 Water Service Reliability – Five Consecutive Dry Years

Table 7-4 compares the projected water supply versus water demand during a five consecutive dry year period. For this assessment, the evaluation considered imported water supplies from Calleguas and projected a ramp up in demand during the first three years. Following the third year, Calleguas anticipates a 20 percent decrease in imported water use as a result of conservation measures being implemented and/or MWD's WSAP. Sufficient supplies are anticipated based on projected supplies from Calleguas and MWD as shown in Table 7-4.

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Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045 (Opt)
First year	Supply totals	13,345	12,308	12,821	13,302	13,620
	Demand totals	11,022	11,264	11,501	11,734	11,994
	Difference	2,323	1,044	1,320	1,568	1,626
Second year	Supply totals	13,155	12,242	12,751	13,227	13,541
	Demand totals	11,687	11,492	11,749	12,003	12,288
	Difference	1,468	750	1,002	1,224	1,253
Third year	Supply totals	13,170	12,247	12,740	13,230	13,545
	Demand totals	11,635	11,474	11,733	11,984	12,268
	Difference	1,535	773	1,008	1,245	1,276
Fourth year	Supply totals	13,711	12,434	12,960	13,447	13,780
	Demand totals	9,999	10,916	11,120	11,315	11,540
	Difference	3,712	1,518	1,841	2,131	2,240
Fifth year	Supply totals	13,535	12,373	12,891	13,377	13,701
	Demand totals	10,459	11,073	11,292	11,502	11,742
	Difference	3,076	1,300	1,598	1,875	1,959
Sixth year (optional)	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
NOTES: Demand and supply projections assume groundwater and recycled water remain the same and imported water is adjusted per tables 7-D and 7-E.						

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7.3 Drought Risk Assessment

7.3.1 Data, Methods, and Basis for Water Shortage Condition

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.

For VCWWD No. 1, the five-consecutive dry years from 1988 to 1992 represent the driest historical five-consecutive years for its water supply from Calleguas and MWD.

Metropolitan developed estimates of future water demand and supplies for its member agencies based on local water sources and from imported water sources based on 96 years (1922-2017) of historic hydrology. Supply and demand analyses for droughts lasting at least five consecutive water years were based on conditions affecting the SWP, as this supply availability fluctuates the most among Metropolitan's sources of supply. Using the same 96-year period that was utilized for the SWP supply availability, 1988 to 1992 is the driest historical consecutive 5-years for SWP supplies.

7.3.2 DRA Water Source Reliability

VCWWD No. 1's five-year drought risk assessment (DRA) is shown in Table 7-5. This table was developed using DWR's optional Planning Tool. Based on Calleguas and MWD's 2020 UWMP Updates, a surplus in water supply is available above the projected water demands. Both Calleguas and MWD have robust WSCP's that include shortage response planning utilizing demand reduction and supply augmentation. The District does not anticipate reliability issues over the next five years. The DRA will be revisited annually.

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Submittal Table 7-5: Five-Year Drought Risk Assessment Tables
to address Water Code Section 10635(b)

2021	Total
Total Water Use	9,179
Total Supplies	12,830
Surplus/Shortfall w/o WSCP Action	3,651
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

2022	Total
Total Water Use [Use Worksheet]	9,748
Total Supplies [Supply Worksheet]	12,645
Surplus/Shortfall w/o WSCP Action	2,897
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

2023	Total
Total Water Use [Use Worksheet]	10,267
Total Supplies [Supply Worksheet]	12,660
Surplus/Shortfall w/o WSCP Action	2,393
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

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2024	Total
Total Water Use [Use Worksheet]	9,193
Total Supplies [Supply Worksheet]	13,186
Surplus/Shortfall w/o WSCP Action	3,993
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

2025	Total
Total Water Use [Use Worksheet]	8,567
Total Supplies [Supply Worksheet]	13,015
Surplus/Shortfall w/o WSCP Action	4,448
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	0
WSCP - use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

Chapter 8 Water Shortage Contingency Plan

As part of its UWMP, Water Code Section 10632 requires Suppliers to prepare and adopt a Water Shortage Contingency Plan (WSCP). 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.

The WSCP aligns with both Calleguas' WSCP as well as MWD to ensure continuity, collaboration, and efficiency. The WSCP also draws upon lessons learned from the 2012-2016 drought. The following discussion presents the various stages and the basis for implementation. For detailed information, the WSCP is attached as Appendix H.

8.1 Water Supply Reliability Analysis

The primary source of water supply for the District has been water imported from MWD through Calleguas. The imported water is primarily treated water from the Sacramento-San Joaquin River Delta in Northern California, which is conveyed via State Water Project (SWP) facilities. In 2020, the District supplied a total of 7,112 AF from imported water purchased from Calleguas, which was 71 percent of the total water supply including recycled water.

The second largest source of water is groundwater extracted from the East Las Posas Groundwater Basin via six groundwater wells owned and operated by the District. Most of the groundwater meets all State and Federal water quality standards for drinking water with the exception that treatment is required at two of the well sites (Wells No. 15 and 20) to lower iron and manganese levels below the State Secondary Maximum Contaminant Level (MCL) requirements. Each well site has a chlorine injection before being pumped into the potable water distribution system. In 2020, the District supplied a total of 1,966 AF from groundwater production, which was 20 percent of the total water supplied including recycled water.

The District's Moorpark Water Reclamation Facility (MWRF) produces recycled water via tertiary treatment facilities owned and operated by the District. In 2020, the reclamation plant produced 941 AF of recycled water which accounted for 9 percent of the total water supplied. The District forecasts that recycled water demand will increase to 1,400 AFY by 2025, necessitating a new permit from RWQCB; and to 2,200 AFY by 2040. Currently, the plant is able to meet the projected recycled water demand of 2,200 AFY in 2040 with its capacity at 3.0 mgd but an updated permit would be required for supply above the current permitted amount of 1.5 mgd.

The District is in the planning stages of the Moorpark Desalter Project, which is a groundwater production and treatment system that is projected to provide up to 5,000 AFY of potable water for customers within the District's water service area. This project is currently in the planning phase and anticipated to be online by 2030.

8.2 Annual Water Supply and Demand Assessment Procedures

As an urban water supplier, VCWWD No.1 must prepare and submit an Annual Water Supply and Demand Assessment. The Annual Water Supply and Demand Assessment is a written decision-making process for determining supply reliability each year, along with the data and methods used to evaluate reliability. The following information provides the procedures the District will undertake to complete and approve the Annual Assessment.

8.2.1 Decision-Making Process

The Annual Assessment will be formally approved by District staff. However, if water use restrictions are imposed, the District staff will draft a board letter, resolution, and exhibits. They will also work with County Counsel on the public hearing requirements. The Water and Sanitation Department Director will then present these items to the County Board of Supervisors to adopt a resolution for the Annual Water Supply and Demand Assessment.

8.2.2 Data and Methodologies

The following provides a description of the key data inputs and methodologies that will be used in the Annual Assessment.

Evaluation Criteria

The District Staff Services Specialist Conservation/Legislative Coordinator coordinates with staff from Calleguas and MWD to ensure messaging and legislation is consistent and compliant among the agency guidelines. MWD's Annual Assessment is primarily based on MWD's ongoing Water Supply Drought Management process described in their 2020 UWMP Update.

**Figure A.4-1
Sample Annual Assessment Reporting Timeline**

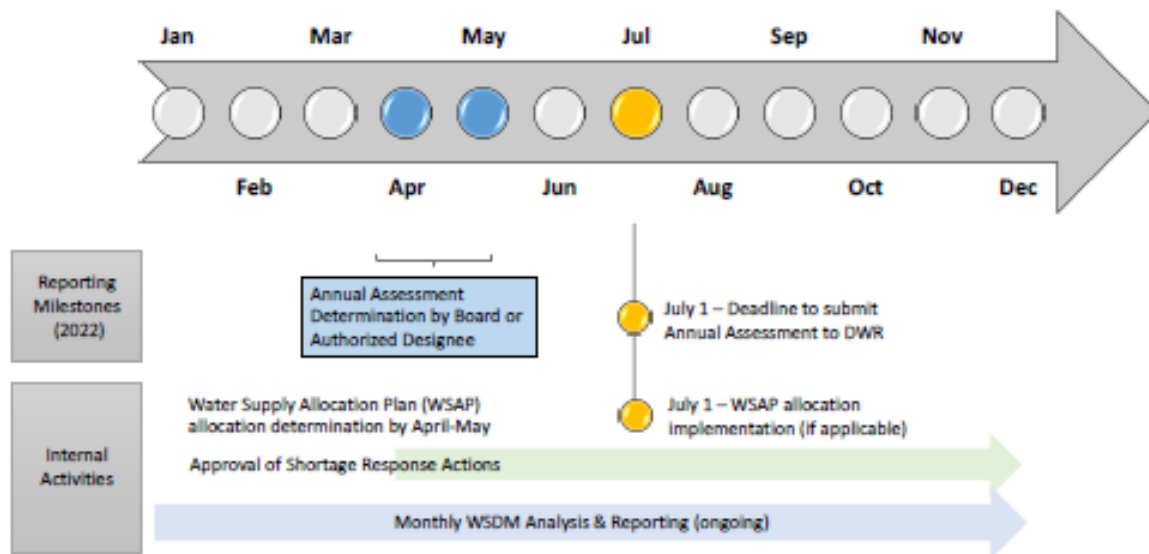


Figure 8-1 MWD Sample Annual Assessment Reporting Timeline (2020 UWMP)

Water Supply

Water supply data is collected daily and reported on a weekly and monthly interval. The underlying data, as well as the reports, will be used in the Annual Assessment.

Current Year Unconstrained Customer Demand

The District is expected to use unconstrained customer demands when assessing water supply reliability or in other words the District's customer water needs for the year prior to any special shortage response actions. Customer demand projections in Chapter 4 consider historical demand trends, changes in local supply production, climate change, water-use efficiency trends, etc. These forecasted demands may need to be adjusted to account for any use of demand management measures such as conservation campaigns or other measures that come from Calleguas or MWD.

Current Year Available Supply

To plan for a future dry year the District will have to rely on meeting demands with extra imported water. The District imports approximately 70 to 80 percent of their annual supplies from Calleguas who receives water from MWD. In 2020, imported water accounted from 71 percent of the supply. Over the last few years, MWD has been able to rebuild its storage in reservoirs due to favorable supply conditions. MWD storage allows for a single dry year and at times multiple dry years. MWD has developed a Water

Shortage Contingency Plan which is consistent with their current policies for managing regional water supplies during shortage periods. Current year supplies are discussed further in Chapter 6.

Infrastructure Consideration

The District is preparing an update to their Water Master Plan and hydraulic system water model to evaluate distribution system needs currently and for future planning. The District has determined the existing Stockton Reservoir requires replacement and is currently in the design phase. In addition, the District determined a need for additional water supply sources to reduce their reliance on imported water. The Moorpark Desalter is a groundwater production and treatment system that would supplement imported water and remove high salinity water from the groundwater basin.

Other Factors

FCGMA may impose groundwater allocation cutbacks in the future.

8.3 Six Standard Water Shortage Stages

As required by CWC §10632(a)(3)(A), the WSCP is framed around six standard shortage levels that correspond to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortages. Each of the six shortage levels represents an increasing gap between the District's estimated core supplies and unconstrained demands as determined in the Annual Assessment. Shortage levels also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other emergency events. Table 8-1 shows the percent shortage range and its associated water shortage condition.

Submittal Table 8-1: Water Shortage Contingency Plan Levels		
Shortage Level	Percent Shortage Range	Water Shortage Condition
Permanent	--	The District has adopted permanent conservation methods such as water saving devices and prohibited water waste.
1	Up to 10%	The District will initiate a public information campaign to increase awareness of water conservation measures specified in the District's Rules and Regulations. Customers are expected to perform voluntary water use reductions and adhere to on-going water conservation measures.
2	Up to 20%	The District will expand the public information campaign and step-up enforcement of water conservation measures specified in the District's Rules and Regulations. It is mandatory for Customers to implement water use reductions and adhere to on-going water conservation measures.
3	Up to 30%	This stage requires additional mandatory water conservation actions.
4	Up to 40%	This stage requires additional mandatory water conservation actions, such as water rationing for specific uses.
5	Up to 50%	This stage requires additional mandatory water conservation actions, such as water rationing for all customers.
6	>50%	This stage requires additional mandatory water conservation actions, such as increased water rationing for all water customers.
NOTES:		

8.4 Plan Adoption, Submittal, and Availability

The District WSCP was developed and is included as an Appendix H and shall be made available to its purveyors and any city or county within which it provides water supplies no later than 30 days after adoption. Below is a description of how the WSCP will be adopted, submitted, implemented, and amended. The WSCP may be periodically amended independently of the UWMP, as needed.

The District provided notice of availability of the draft 2020 UWMP and 2020 WSCP in accordance with CWC. A public meeting will be held prior to the adoption of the District's WSCP. The public meeting will

provide a platform for cities, counties, and members of the public to comment on the WSCP prior to its adoption. Notice of the public hearing was given to cities and counties within which water is supplied and to the general public.

A public hearing is scheduled to be held at the County Government Center Hall of Administration Board of Supervisors Hearing Room 800 S. Victoria Avenue Ventura, California 93009 on June 22, 2021 to receive public comments.

Not later than 30 days after filing a copy of its plan with the Department of Water Resources (DWR), the urban water supplier and the DWR shall make the plan available for public review during normal business hours. The adopted 2020 UWMP and WSCP for the water system will be made publicly available on the District's website <https://vcpublicworks.org/wsd>.

Chapter 9 Demand Management Measures

The goal of the Demand Management Measures (DMM) section in a UWMP is to provide a comprehensive description of the water conservation programs that the District has implemented, is currently implementing, and plans to implement in order to meet its urban water use reduction targets. Calleguas implements many of the urban water conservation DMMs on behalf of its member agencies, including VCWWD No. 1. Calleguas' 2020 Regional Urban Water Management Plan should be referred to for a detailed discussion of each regional BMP program.

9.1 Existing Demand Management Measures for Retail Suppliers

9.1.1 Water Waste Prevention Ordinances

The District has passed rules and regulations that prohibit water wasting. Specifically, the District has implemented the following requirements:

Water Saving Devices: All new customers shall install and use the following water efficient plumbing fixtures:

- a) Ultra-low-volume toilets (1.6 gallons per flush or less).
- b) Low-flow shower heads (2.0 gallons per minute or less).

Water Waste Prohibited: No person shall use or permit the use of District water as follows:

- a) Watering of turf, ornamental landscape, open ground crops and trees, in a manner or to an extent which allows water to run to waste.
- b) In any manner such that the escape of water through leaks, breaks, or malfunctions within the water user's plumbing or distribution system occurs for any period of time beyond which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of forty-eight hours after the water user discovers such leak, break, or malfunction, or receives notice from the District of such condition, whichever occurs first, is a reasonable time within which to correct such condition.
- c) Using water to wash or clean a vehicle, including but not limited to washing automobiles, trucks, trailers, boats, or other types of mobile equipment, without the use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility.
- d) Operating any ornamental fountain, or similar structures, unless water for such is recycled for lawful reuse without substantial loss.
- e) Washing down hard or paved surfaces, including but not limited to washing of sidewalks, walkways, driveways, parking lots or any other hard-surfaced areas by hose or flooding, except

as otherwise necessary to prevent or eliminate conditions dangerous to the public health and safety or for other legitimate uses approved by the District, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, a low-volume high-pressure cleaning machine equipped to recycle any water used, or a low-volume high-pressure water broom.

- f) Serving water in eating or drinking establishments, including but not limited to restaurants, hotels, cafés, bars or other public places where food or drinks are sold or served, to customers without first being expressly requested by the customer.
- g) For any indiscriminate running of water or washing with water not otherwise prohibited above which is wasteful and without reasonable purpose.
- h) Watering of residential, commercial, industrial, and governmental outdoor irrigation from 9:00 a.m. to 4:00 p.m. except for a short duration, not to exceed 3 minutes per station, for the limited purpose of testing or making repairs to the irrigation system. Agricultural customers are exempt from this irrigation schedule but must comply with agricultural irrigation schedules determined by the District (currently a 3 day/week watering schedule is in effect).
- i) Running of water or spraying of water onto other properties.
- j) Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended for more than ten (10) minutes watering per day per station. This rule does not apply during the establishment period, as determined by the District, for new landscaping.
- k) For laundry purposes by hotels, motels and other commercial lodging establishments, except where customers are given the option of not having towels and linens laundered daily through the prominent display of written notice of such option in each bathroom using clear and easily understood language.
- l) Through the installation of single pass cooling systems in buildings requesting new water service.
- m) Through the installation of non-recirculating water systems in new commercial conveyor car wash and new commercial laundry systems.
- n) Through the use of non-water conserving dish wash spray valves by food preparation establishments, such as restaurants and cafes.
- o) Through a commercial conveyor car wash operating without a re-circulating water system, or without first securing a waiver of this requirement from the Director.

Irrigation Schedules: The district may impose irrigation schedules for outdoor use, including agricultural use, to address water conservation and limited water supply.

9.1.2 Metering

The District maintains water meters on all residential, commercial, industrial and municipal connections to the District's water distribution system. The District has an aggressive meter replacement program. Meters are re-built on a multi-year cycle to ensure accuracy and proper functioning. The District's water system is fully metered. Therefore, the District completes annual checks on the accuracy and operation of production meters by either recalibrating and reinstalling, or by replacing meters that do not fall within the required operating range of AWWA standards.

9.1.3 Conservation Pricing

The District has a tiered rate structure for water service for residential customers within its service area. The tiered rate structure discourages high water use for residential customers.

9.1.4 Public Education and Outreach

The County of Ventura's Public Works Agency maintains a website (<https://www.vcpublicworks.org/>) that provides information regarding indoor and outdoor water conservation tips (e.g., fix leaks, take shorter showers, recycle indoor water for outdoor plant use). Ventura County Public Works Agency also offers a Leak Adjustment Program for customers who experience an indoor water leak or an outdoor irrigation leak.

In addition, Calleguas has made water conservation a priority and as such they have budgeted for Public Outreach and Education Programs annually. This budget also supports their rebate programs. Over the years water saving technologies have advanced in both quality and effectiveness and these advancements have necessitated changes in the way they run rebate programs. Metropolitan and Calleguas continue to try and find the best way to get these devices and rebates to the customers and end users. Calleguas provides the following additional resource links that includes water conservation, rebate programs, water saving incentives and other information sources related to water conservation.

Education: <http://www.mwdh2o.com/inthecommunity/education-programs/Pages/default.aspx>
Community Partnering Program: <http://www.mwdh2o.com/inthecommunity/community-outreach>
Water Savings Incentive Program: http://www.bewaterwise.com/water_savings_incentive_program.shtml
Innovative Conservation Program: <http://www.bewaterwise.com/icp.shtml>
California Native Plant Society: <http://www.cnps.org/>
Gardening Classes: <http://www.bewaterwise.com/Training.shtml>

9.1.5 Programs to Assess and Manage Distribution System Real Loss

The District is currently using a wide range of operational policies and practices to ensure the efficient use of its water supply. The District conducts monthly monitoring of all water services. In addition, daily inspection of all facilities such as pump stations, wells, reservoirs, valve vaults, etc., is completed. On an annual basis, visual inspection of all easements and pipeline alignments is accomplished.

The District accomplishes water audits and leak detection through various District activities focused on finding and correcting water losses. Field crews visually survey the system as they travel throughout the district service area on a daily basis. The District's telemetry system also enhances the ability to locate

and correct large leaks expeditiously. Leak monitoring is accomplished by all operations field personnel. In the event of a leak, prompt response and investigation are communicated to the District by customers and other entities.

The District works diligently to confirm that the appropriate parties are billed for water loss resulting from damaged fire hydrants, air-vacuums, blow offs, dig-ins, etc. In addition, monthly monitoring of “unaccounted-for” water losses assists in identifying leaks. The AWWA Water Audit Software Version 5.0 was used to quantify distribution water loss for the District for 2020 and a water loss volume of 120 AFY was calculated for the domestic water system, which is 1.3 percent of the water supplied.

The District implements programs on leak detection and repair, metering, meter replacement, system flushing, reservoir cleaning and maintenance, valve maintenance and mapping. The District proposes to review distribution system operational procedures and maintenance practices with appropriate field and administrative staff. These measures will ensure system reliability. The hydrant flushing program will be reviewed for its scope and timing, as well as to determine how much water is lost during flushing.

9.1.6 Water Conservation Program Coordination and Staffing Support

The District has designated the Water Superintendent responsible for the position of Water Conservation Coordinator. The District continues to be involved in water conservation programs and coordinates with Calleguas and MWD on an as needed basis.

9.2 Water Use Objectives

Water Code Section 10631 requires that Suppliers develop new water use objectives that are based on specific standards for certain water use sectors. These water use objectives will not be developed until 2023.

Chapter 10 Plan Adoption, Submittal, and Implementation

Plan Adoption, Submittal, and Implementation. Suppliers may use this section to describe and document the steps taken to make its UWMP publicly available, as well as the steps taken to adopt and submit its UWMP in accordance with the Water Code. This chapter can also describe the Supplier's plan to implement the UWMP.

Since 2015, the public processes for completing the UWMP have not been revised. However, the Water Shortage Contingency Plan is now a standalone component of the 2020 UWMP that can be amended separately from the UWMP (see Chapter 8).

10.1 Inclusion of all 2020 Data

The 2020 UWMP consists of water use and planning data for FY2020. The District is reporting on a fiscal year basis.

10.2 Notice of Public Hearing

A public meeting will be held prior to the adoption of the District's UWMP. The public meeting will provide a platform for cities, counties, and members of the public to comment on the UWMP prior to its adoption. Notice of the public hearing was given to cities and counties within which water is supplied and to the general public. Copies of all public notices will be included in Appendix A.

10.2.1 Notification to Cities and Counties

Table 10-1 provides a summary of cities and counties that were provided with both the 60-Day Notice and Notice of Public Hearing by email.

Submittal Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
City of Moorpark	Yes	Yes
County Name <i>Drop Down List</i>	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Ventura County	Yes	Yes

10.2.2 Notice to the Public

Prior to holding the public hearing and adoption meeting for this UWMP, two Notices of Public Hearing will be published in a local newspaper, with at least five intervening days between each notice. Copies of the public notices will be included in Appendix B.

10.3 Public Hearing and Adoption

As part of the public hearing, the District will provide information on their baseline values, water use targets, and implementation plan required in the Water Conservation Act of 2009. The public hearing on the UWMP will take place before the adoption of the UWMP, which will allow the District the opportunity to modify the UWMP in response to public input before adoption. A public hearing and board adoption is scheduled to be held at County Government Center Hall of Administration Board of Supervisors Hearing Room 800 S. Victoria Avenue Ventura, California 93009 on June 22, 2021 to receive public comments. The District will formally adopt the UWMP before submitting the UWMP to DWR. A copy of the District's adoption resolution, along with the agenda for the hearing, will be included in Appendix C.

10.4 Plan Submittal

The District's 2020 UWMPs will be submitted to DWR within 30 days of adoption and by July 1, 2021. UWMP submittal will be done electronically through the WUE Data Portal, an online submittal tool that will be updated for 2020 UWMPs and available in adequate time for UWMP submittal.

After the UWMP has been submitted, DWR will review the plan using the provided checklist (Appendix K) and determine whether or not the UWMP addresses the requirements of the Water Code. The DWR reviewer will contact the Supplier as needed during the review process. Upon completion of the Plan review, DWR will issue a letter to the Supplier with the results of the review.

10.5 Public Availability

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

10.6 Amending an Adopted UWMP

If the District amends the adopted UWMP, each of the steps for notification, public hearing, adoption, and submittal will also be followed for the amended plan.

**2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS
DISTRICT NO. 1**

Appendix A – Notification Letter

June 14, 2021

Appendix A – Notification Letter

Central Services
Joan Araujo, Director

Engineering Services
Christopher Cooper, Director

Roads & Transportation
David Fleisch, Director

Water & Sanitation
Joseph Pope, Director

Watershed Protection
Glenn Shephard, Director

March 19, 2021

Attention: Anthony Goff

General Manager
Calleguas Municipal Water District
2100 E. Olsen Road
Thousand Oaks, CA 91360

tgoff@calleguas.com

Dear Anthony Goff,

Reference: Ventura County Waterworks District No. 1 - Moorpark 2020 Urban Water Management and 2020 Water Shortage Contingency Plan Availability and Public Comment Period

Ventura County Waterworks District (VCWWD) No. 1 - Moorpark is currently updating its Urban Water Management Plan (UWMP) and preparing the Water Shortage Contingency Plan (WSCP) and invites all stakeholders and the public to participate in the process. The UWMP is a long-term water resource planning document required for all Urban Water Suppliers by the California Water Code.

VCWWD retained the services of Stantec Consulting Services Inc. to prepare an update to the 2015 UWMP that was adopted by the Board of Directors on June 14, 2016. The draft 2020 UWMP is now available for review on the VCWWD website at: <https://www.vcpublishworks.org/wsd/publicationsanddocuments/>.

A public hearing is tentatively scheduled for June 22, 2021 to receive public comments and consider adoption of the 2020 UWMP. All interested parties are invited to attend.

For questions concerning the draft UWMP, please contact Ryan Lippincott, Engineering Manager at (805) 378-3018 or Ryan.Lippincott@Ventura.org. Written comments are requested by close of business on **May 3, 2021**.

Regards,

Ryan Lippincott
Engineering Manager
Water and Sanitation Department
P: 805.378.3018 C: 805.765.5777
Ryan.Lippincott@Ventura.org



Central Services
Joan Araujo, Director

Engineering Services
Christopher Cooper, Director

Roads & Transportation
David Fleisch, Director

Water & Sanitation
Joseph Pope, Director

Watershed Protection
Glenn Shephard, Director

March 19, 2021

Attention: Daniel Kim

City Engineer
City of Moorpark - Public Works Department
627 Fitch Avenue
Moorpark, CA 93021

DKim@moorparkca.gov

Dear Daniel Kim,

Reference: Ventura County Waterworks District No. 1 - Moorpark 2020 Urban Water Management and 2020 Water Shortage Contingency Plan Availability and Public Comment Period

Ventura County Waterworks District (VCWWD) No. 1 - Moorpark is currently updating its Urban Water Management Plan (UWMP) and preparing the Water Shortage Contingency Plan (WSCP) and invites all stakeholders and the public to participate in the process. The UWMP is a long-term water resource planning document required for all Urban Water Suppliers by the California Water Code.

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Regards,

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Water and Sanitation Department
P: 805.378.3018 C: 805.765.5777
Ryan.Lippincott@Ventura.org



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Joan Araujo, Director

Engineering Services
Christopher Cooper, Director

Roads & Transportation
David Fleisch, Director

Water & Sanitation
Joseph Pope, Director

Watershed Protection
Glenn Shephard, Director

March 19, 2021

Attention: Jeff Pratt

Executive Officer
Fox Canyon Groundwater Management Agency
800 South Victoria Avenue
Ventura, CA 93009

Jeff.Pratt@ventura.org

Dear Jeff Pratt,

Reference: Ventura County Waterworks District No. 1 - Moorpark 2020 Urban Water Management and 2020 Water Shortage Contingency Plan Availability and Public Comment Period

Ventura County Waterworks District (VCWWD) No. 1 - Moorpark is currently updating its Urban Water Management Plan (UWMP) and preparing the Water Shortage Contingency Plan (WSCP) and invites all stakeholders and the public to participate in the process. The UWMP is a long-term water resource planning document required for all Urban Water Suppliers by the California Water Code.

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A public hearing is tentatively scheduled for June 22, 2021 to receive public comments and consider adoption of the 2020 UWMP. All interested parties are invited to attend.

For questions concerning the draft UWMP, please contact Ryan Lippincott, Engineering Manager at (805) 378-3018 or Ryan.Lippincott@Ventura.org. Written comments are requested by close of business on **May 3, 2021**.

Regards,

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Water and Sanitation Department
P: 805.378.3018 C: 805.765.5777
Ryan.Lippincott@Ventura.org



Central Services
Joan Araujo, Director

Engineering Services
Christopher Cooper, Director

Roads & Transportation
David Fleisch, Director

Water & Sanitation
Joseph Pope, Director

Watershed Protection
Glenn Shephard, Director

March 19, 2021

Attention: Karen Vaughn

Community Development Director
City of Moorpark - Community Development
799 Moorpark Avenue
Moorpark, CA 93021

kvaughn@moorparkca.gov

Dear Karen Vaughn,

Reference: Ventura County Waterworks District No. 1 - Moorpark 2020 Urban Water Management and 2020 Water Shortage Contingency Plan Availability and Public Comment Period

Ventura County Waterworks District (VCWWD) No. 1 - Moorpark is currently updating its Urban Water Management Plan (UWMP) and preparing the Water Shortage Contingency Plan (WSCP) and invites all stakeholders and the public to participate in the process. The UWMP is a long-term water resource planning document required for all Urban Water Suppliers by the California Water Code.

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Regards,

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Joan Araujo, Director

Engineering Services
Christopher Cooper, Director

Roads & Transportation
David Fleisch, Director

Water & Sanitation
Joseph Pope, Director

Watershed Protection
Glenn Shephard, Director

March 19, 2021

Attention: Kimberly Prillhart, P.E.

Planning Director
Ventura County Resource Management Agency-Planning Division
800 South Victoria Avenue, #1740
Ventura, CA 93009

Kimberly.Prillhart@ventura.org

Dear Kimberly Prillhart,

Reference: Ventura County Waterworks District No. 1 - Moorpark 2020 Urban Water Management and 2020 Water Shortage Contingency Plan Availability and Public Comment Period

Ventura County Waterworks District (VCWWD) No. 1 - Moorpark is currently updating its Urban Water Management Plan (UWMP) and preparing the Water Shortage Contingency Plan (WSCP) and invites all stakeholders and the public to participate in the process. The UWMP is a long-term water resource planning document required for all Urban Water Suppliers by the California Water Code.

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For questions concerning the draft UWMP, please contact Ryan Lippincott, Engineering Manager at (805) 378-3018 or Ryan.Lippincott@Ventura.org. Written comments are requested by close of business on **May 3, 2021**.

Regards,

Ryan Lippincott
Engineering Manager
Water and Sanitation Department
P: 805.378.3018 C: 805.765.5777
Ryan.Lippincott@Ventura.org



2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1

Appendix B – Public Notice

June 14, 2021

Appendix B – Public Notice

**2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS
DISTRICT NO. 1**

Appendix C – Adoption Resolution

June 14, 2021

Appendix C – Adoption Resolution

**2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS
DISTRICT NO. 1**

Appendix D – Population Tool Worksheet

June 14, 2021

Appendix D – Population Tool Worksheet

WUEdata - Ventura County Waterworks District No 01 - Moorpark



Please print this page to a PDF and include as part of your UWMP submittal.

Confirmation Information

Generated By	Water Supplier Name	Confirmation #	Generated On
Kevin Hernandez	Ventura County Waterworks District No 01 - Moorpark	6529935538	2/4/2021 10:40:36 AM

Boundary Information

Census Year	Boundary Filename	Internal Boundary ID
1990	ww01_sp.kml	1029
2000	ww01_sp.kml	1029
2010	ww01_sp.kml	1029
1990	ww01_sp.kml	1029
2000	ww01_sp.kml	1029
2010	ww01_sp.kml	1029

Baseline Period Ranges

10 to 15-year baseline period

Number of years in baseline period:

Year beginning baseline period range:

Year ending baseline period range¹: 2009

5-year baseline period

Year beginning baseline period range:

Year ending baseline period range²: 2008

¹ The ending year must be between December 31, 2004 and December 31, 2010.

² The ending year must be between December 31, 2007 and December 31, 2010.

Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

Year	Census Block Group Level	Census Block Level			# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection
	% Population in SF Housing	Service Area Population	Population in SF Housing (calculated)	Population in MF/GQ Housing (calculated)				
1990	86.08%	25,626	22,060	3,566	<input type="text" value="7035"/>	<input type="text" value="91"/>	3.14	39.19
1991	-	-	-	-	-	-	3.17	39.14
1992	-	-	-	-	-	-	3.20	39.09
1993	-	-	-	-	-	-	3.22	39.03
1994	-	-	-	-	-	-	3.25	38.98
1995	-	-	-	-	-	-	3.28	38.93
1996	-	-	-	-	-	-	3.31	38.88
1997	-	-	-	-	-	-	3.34	38.83
1998	-	-	-	-	-	-	3.36	38.77
1999	-	-	-	-	-	-	3.39	38.72
2000	87.28%	31,913	27,853	4,060	<input type="text" value="8140"/>	<input type="text" value="105"/>	3.42	38.67
2001	-	-	-	-	-	-	3.39	38.88
2002	-	-	-	-	-	-	3.37	39.08
2003	-	-	-	-	-	-	3.34	39.29
2004	-	-	-	-	-	-	3.32	39.50
2005	-	-	-	-	-	-	3.29	39.70
2006	-	-	-	-	-	-	3.26	39.91
2007	-	-	-	-	-	-	3.24	40.12
2008	-	-	-	-	-	-	3.21	40.33
2009	-	-	-	-	-	-	3.19	40.53
2010	85.59%	35,351	30,258	5,093	<input type="text" value="9572"/>	<input type="text" value="125"/>	3.16	40.74
2011	-	-	-	-	-	-	3.13	40.95
2012	-	-	-	-	-	-	3.11	41.16
2013	-	-	-	-	-	-	3.08	41.36
2014	-	-	-	-	-	-	3.06	41.57
2015	-	-	-	-	-	-	3.03	41.78
					-	-	2.90 *	42.82 *

Population Using Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

Year		# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection	SF Population	MF/GQ Population	Total Population
10 to 15 Year Baseline Population Calculations								
Year 1	2000	8140	105	3.42	38.67	27,853	4,060	31,913
Year 2	2001	8283	107	3.39	38.88	28,113	4,160	32,272
Year 3	2002	8426	109	3.37	39.08	28,379	4,260	32,639
Year 4	2003	8570	111	3.34	39.29	28,641	4,361	33,002
Year 5	2004	8713	113	3.32	39.50	28,892	4,463	33,356
Year 6	2005	8856	115	3.29	39.70	29,136	4,566	33,702
Year 7	2006	8999	117	3.26	39.91	29,373	4,670	34,042
Year 8	2007	9142	119	3.24	40.12	29,602	4,774	34,376
Year 9	2008	9286	121	3.21	40.33	29,827	4,879	34,706
Year 10	2009	9429	123	3.19	40.53	30,041	4,986	35,026
5 Year Baseline Population Calculations								
Year 1	2004	8713	113	3.32	39.50	28,892	4,463	33,356
Year 2	2005	8856	115	3.29	39.70	29,136	4,566	33,702
Year 3	2006	8999	117	3.26	39.91	29,373	4,670	34,042
Year 4	2007	9142	119	3.24	40.12	29,602	4,774	34,376
Year 5	2008	9286	121	3.21	40.33	29,827	4,879	34,706
2020 Compliance Year Population Calculations								
2020		10255	160	2.90 *	42.82 *	29,773	6,852	36,625

[Hide Print Confirmation](#)

QUESTIONS / ISSUES? CONTACT THE WUEdata HELP DESK

**2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS
DISTRICT NO. 1**

Appendix E – AWWA System Losses Worksheet

June 14, 2021

Appendix E – AWWA System Losses Worksheet

AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

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Water Audit Report for: **Ventura County Waterworks District 1**
Reporting Year: **2016** **1/2016 - 12/2016**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

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

WATER SUPPLIED

Volume from own sources: + ? 6 1,791.100 acre-ft/yr
Water imported: + ? 7 6,983.700 acre-ft/yr
Water exported: + ? n/a 0.000 acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt: + ? 3 Value: 0.000 acre-ft/yr
+ ? 9 Value: 0.000 acre-ft/yr
+ ? Value: 0.000 acre-ft/yr

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

WATER SUPPLIED: 8,774.800 acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered: + ? 5 8,339.070 acre-ft/yr
Billed unmetered: + ? 10 3.230 acre-ft/yr
Unbilled metered: + ? 9 28.710 acre-ft/yr
Unbilled unmetered: + ? 7 0.606 acre-ft/yr

Click here: ?
for help using option
buttons below

Pcnt: Value: 0.606 acre-ft/yr

Use buttons to select
percentage of water
supplied
OR
value

AUTHORIZED CONSUMPTION: 8,371.616 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: + ? 3 5.000 acre-ft/yr
Customer metering inaccuracies: + ? 4 84.523 acre-ft/yr
Systematic data handling errors: + ? 9 10.000 acre-ft/yr

Pcnt: Value: 5.000 acre-ft/yr

1.00% Value: 10.000 acre-ft/yr

Apparent Losses: 99.523 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 303.661 acre-ft/yr

WATER LOSSES: 403.184 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 432.500 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: + ? 5 168.0 miles
Number of active AND inactive service connections: + ? 9 10,876
Service connection density: ? 65 conn./mile main

Are customer meters typically located at the curbside or property line? Yes

Average length of customer service line: + ? (length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure: + ? 5 83.0 psi

COST DATA

Total annual cost of operating water system: + ? 10 \$18,398,000 \$/Year
Customer retail unit cost (applied to Apparent Losses): + ? 9 \$3.06 \$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses): + ? 5 \$1,210.00 \$/acre-ft ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 70 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported

2: Billed metered

3: Customer metering inaccuracies

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Water Audit Report for: Ventura County Waterworks District 1			
Reporting Year:	2017	1/2017 - 12/2017	

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

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

WATER SUPPLIED

<----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	+	?	7	1,753.500	acre-ft/yr
Water imported:	+	?	7	7,947.400	acre-ft/yr
Water exported:	+	?	n/a	0.000	acre-ft/yr

Master Meter and Supply Error Adjustments

		Pcnt:	Value:		
+	? 3		<input checked="" type="radio"/>	<input type="radio"/>	acre-ft/yr
+	? 9		<input checked="" type="radio"/>	<input type="radio"/>	acre-ft/yr
+	?		<input checked="" type="radio"/>	<input type="radio"/>	acre-ft/yr

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

AUTHORIZED CONSUMPTION



Billed metered:	+	?	5	8,995.038	acre-ft/yr
Billed unmetered:	+	?	10	2.085	acre-ft/yr
Unbilled metered:	+	?	9	13.315	acre-ft/yr
Unbilled unmetered:	+	?	7	20.000	acre-ft/yr

Click here: [?](#)
for help using option
buttons below

Pcnt:	Value:
<input type="radio"/>	20,000 acre-ft/yr

Use buttons to select
percentage of water
supplied
OR
value

Pcnt: ☐ Value: ☒ 5.000 acre-ft/yr

1.00%			acre-ft/yr
		10.000	acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: + ? 3 5.000 acre-ft/yr

Customer metering inaccuracies:	+	?	3	90.993	acre-ft/yr
Systematic data handling errors:	+	?	9	10.000	acre-ft/yr

Apparent Losses: ? 105.993 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:	?	564.469	acre-ft/yr
---	---	---------	------------

WATER LOSSES:	670.462 acre-ft/yr
----------------------	---------------------------

NON-REVENUE WATER

NON-REVENUE WATER: ? 703.777 acre-ft/yr

$$= \text{Water Losses} + \text{Unbilled Metered} + \text{Unbilled Unmetered}$$

SYSTEM DATA

Length of mains:	+	?	6	168.0	miles
Number of <u>active AND inactive</u> service connections:	+	?	9	10,921	
Service connection density:		?		65	conn./mile main

Are customer meters typically located at the curbside or property line? ☐ Yes

Average length of customer service line: + (length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure: ps

COST DATA

Total annual cost of operating water system:	+	?	10	\$18,840,000	/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	9	\$3.23	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+	?	5	\$1,302.00	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 70 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported

2: Customer metering inaccuracies

3: Billed metered

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Water Audit Report for: **Ventura County Waterworks District 1**
Reporting Year: **2018** **1/2018 - 12/2018**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

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

WATER SUPPLIED

Volume from own sources: + ? 9 1,755.700 acre-ft/yr
Water imported: + ? 5 7,507.200 acre-ft/yr
Water exported: + ? n/a 0.000 acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt: + ? 3 Value: 0.000 acre-ft/yr
+ ? 9 Value: 0.000 acre-ft/yr
+ ? Value: 0.000 acre-ft/yr

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

WATER SUPPLIED: 9,262.900 acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered: + ? 5 9,168.700 acre-ft/yr
Billed unmetered: + ? n/a 0.000 acre-ft/yr
Unbilled metered: + ? 9 19.070 acre-ft/yr
Unbilled unmetered: + ? 7 5.000 acre-ft/yr

AUTHORIZED CONSUMPTION: 9,192.770 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: + ? 3 1.000 acre-ft/yr
Customer metering inaccuracies: + ? 3 92.806 acre-ft/yr
Systematic data handling errors: + ? 9 2.000 acre-ft/yr

Apparent Losses: 95.806 acre-ft/yr

Check input values; APPARENT LOSSES should be less than WATER LOSSES

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? -25.676 acre-ft/yr

WATER LOSSES: 70.130 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 94.200 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: + ? 9 177.0 miles
Number of active AND inactive service connections: + ? 9 10,941
Service connection density: ? 62 conn./mile main

Are customer meters typically located at the curbside or property line? Yes

Average length of customer service line: + ? (length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure: + ? 5 83.0 psi

COST DATA

Total annual cost of operating water system: + ? 10 \$19,597,000 \$/Year
Customer retail unit cost (applied to Apparent Losses): + ? 9 \$3.47 \$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses): + ? 5 \$1,356.00 \$/acre-ft ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 64 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported

2: Customer metering inaccuracies

3: Billed metered

AWWA Free Water Audit Software: Reporting Worksheet

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Water Audit Report for: **Ventura County Waterworks District 1**
Reporting Year: **2019** **7/2018 - 6/2019**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

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

WATER SUPPLIED

Volume from own sources: + ? 5 1,544.430 acre-ft/yr
Water imported: + ? 5 6,905.500 acre-ft/yr
Water exported: + ? n/a 0.000 acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt: + ? 3 Value: 0.000 acre-ft/yr
+ ? 9 Value: 0.000 acre-ft/yr
+ ? Value: 0.000 acre-ft/yr

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

WATER SUPPLIED: 8,449.930 acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered: + ? 7 8,419.560 acre-ft/yr
Billed unmetered: + ? n/a 0.000 acre-ft/yr
Unbilled metered: + ? 9 18.560 acre-ft/yr
Unbilled unmetered: + ? 9 5.000 acre-ft/yr

AUTHORIZED CONSUMPTION: 8,443.120 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: + ? 21.125 acre-ft/yr
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: + ? 3 85.234 acre-ft/yr
Systematic data handling errors: + ? 9 2.000 acre-ft/yr

Apparent Losses: 108.358 acre-ft/yr

Check input values; APPARENT LOSSES should be less than WATER LOSSES

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? -101.548 acre-ft/yr

WATER LOSSES: 6.810 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 30.370 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: + ? 9 174.0 miles
Number of active AND inactive service connections: + ? 9 10,901
Service connection density: ? 63 conn./mile main

Are customer meters typically located at the curbside or property line? Yes

Average length of customer service line: + ? (length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure: + ? 5 83.0 psi

COST DATA

Total annual cost of operating water system: + ? 10 \$17,386,550 \$/Year
Customer retail unit cost (applied to Apparent Losses): + ? 9 \$3.61 \$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses): + ? 5 \$1,346.00 \$/acre-ft ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 65 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported

2: Customer metering inaccuracies

3: Variable production cost (applied to Real Losses)

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Water Audit Report for: **Ventura County Waterworks District 1**
Reporting Year: **2019** **7/2019 - 6/2020**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

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

WATER SUPPLIED

Volume from own sources: + ? 7 1,965.770 acre-ft/yr
Water imported: + ? 7 7,112.350 acre-ft/yr
Water exported: + ? n/a 0.000 acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt: + ? 3 Value: 0.000 acre-ft/yr
+ ? 9 Value: 0.000 acre-ft/yr
+ ? Value: 0.000 acre-ft/yr

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

WATER SUPPLIED: 9,078.120 acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered: + ? 7 8,939.770 acre-ft/yr
Billed unmetered: + ? n/a 0.000 acre-ft/yr
Unbilled metered: + ? 9 13.170 acre-ft/yr
Unbilled unmetered: + ? 9 5.000 acre-ft/yr

AUTHORIZED CONSUMPTION: 8,957.940 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: + ? 22.695 acre-ft/yr
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: + ? 3 90.434 acre-ft/yr
Systematic data handling errors: + ? 9 2.000 acre-ft/yr

Apparent Losses: 115.129 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 5.051 acre-ft/yr

WATER LOSSES: 120.180 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 138.350 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: + ? 9 174.0 miles
Number of active AND inactive service connections: + ? 9 10,901
Service connection density: ? 63 conn./mile main

Are customer meters typically located at the curbside or property line? Yes

Average length of customer service line: + ? (length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure: + ? 5 83.0 psi

COST DATA

Total annual cost of operating water system: + ? 10 \$19,750,732 \$/Year
Customer retail unit cost (applied to Apparent Losses): + ? 9 \$3.77 \$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses): + ? 5 \$1,326.00 \$/acre-ft ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 72 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported

2: Customer metering inaccuracies

3: Variable production cost (applied to Real Losses)

**2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS
DISTRICT NO. 1**

Appendix F – SBx7-7 Verification Form

June 14, 2021

Appendix F – SBx7-7 Verification Form

SB X7-7 Table 0: Units of Measure Used in UWMP* <i>(select one from the drop down list)</i>
--

Acre Feet

<i>*The unit of measure must be consistent with Submittal Table 2-3</i>

NOTES:

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	13,876	Acre Feet
	2008 total volume of delivered recycled water	469	Acre Feet
	2008 recycled water as a percent of total deliveries	3%	See Note 1
	Number of years in baseline period ^{1, 2}	10	Years
	Year beginning baseline period range	2000	
	Year ending baseline period range ³	2009	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range ⁴	2008	
¹ If the 2008 recycled water delivery is less than 10 percent of total water deliveries, then the 10-15 year baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater of total deliveries, the 10-15 year baseline period is a continuous 10- to 15-year period.			
² The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.			
³ The ending year for the 10-15 year baseline period must be between December 31, 2004 and December 31, 2010.			
⁴ The ending year for the 5 year baseline period must be between December 31, 2007 and December 31, 2010.			
NOTES:			

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
<input type="checkbox"/>	1. Department of Finance (DOF) or American Community Survey (ACS)
<input type="checkbox"/>	2. Persons-per-Connection Method
<input checked="" type="checkbox"/>	3. DWR Population Tool
<input type="checkbox"/>	4. Other DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	2000	31,913
Year 2	2001	32,272
Year 3	2002	32,639
Year 4	2003	33,002
Year 5	2004	33,356
Year 6	2005	33,702
Year 7	2006	34,042
Year 8	2007	34,376
Year 9	2008	34,706
Year 10	2009	35,026
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2004	33,356
Year 2	2005	33,702
Year 3	2006	34,042
Year 4	2007	34,376
Year 5	2008	34,706
NOTES:		

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

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	Deductions					Acre Feet
		Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	Annual Gross Water Use
10 to 15 Year Baseline - Gross Water Use							
Year 1	2000	11,576		-	3,249	-	8,327
Year 2	2001	10,891		-	2,890	-	8,001
Year 3	2002	12,538		-	3,669	-	8,869
Year 4	2003	11,678		-	2,922	-	8,756
Year 5	2004	13,639		-	3,709	-	9,930
Year 6	2005	11,873		-	2,615	-	9,258
Year 7	2006	11,469		-	2,614	-	8,855
Year 8	2007	12,628		-	3,464	-	9,164
Year 9	2008	13,407		-	2,869	-	10,538
Year 10	2009	12,617		-	3,040	-	9,577
Year 11	0	-		-		-	-
Year 12	0	-		-		-	-
Year 13	0	-		-		-	-
Year 14	0	-		-		-	-
Year 15	0	-		-		-	-
10 - 15 year baseline average gross water use							9,128
5 Year Baseline - Gross Water Use							
Year 1	2004	13,639		-	3,709	-	9,930
Year 2	2005	11,873		-	2,615	-	9,258
Year 3	2006	11,469		-	2,614	-	8,855
Year 4	2007	12,628		-	3,464	-	9,164
Year 5	2008	13,407		-	2,869	-	10,538
5 year baseline average gross water use							9,549
* Units of measure (AF, MG , or CCF) must remain consistent throughout the UWMP, as reported in Table 2-3.							
NOTES:							

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

Complete one table for each source.

Name of Source		Source 1		
This water source is:				
<input type="checkbox"/>	The supplier's own water source			
<input checked="" type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System¹	Meter Error Adjustment² <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	2000	9,261		9,261
Year 2	2001	10,074		10,074
Year 3	2002	10,969		10,969
Year 4	2003	10,347		10,347
Year 5	2004	13,545		13,545
Year 6	2005	11,624		11,624
Year 7	2006	11,310		11,310
Year 8	2007	12,214		12,214
Year 9	2008	11,914		11,914
Year 10	2009	10,534		10,534
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2004	13,545		13,545
Year 2	2005	11,624		11,624
Year 3	2006	11,310		11,310
Year 4	2007	12,214		12,214
Year 5	2008	11,914		11,914
¹ <i>Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in Table 2-3.</i> ² <i>Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

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

Complete one table for each source.

Name of Source		Source 2		
This water source is:				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System ¹	Meter Error Adjustment ² <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	2000	2315		2,315
Year 2	2001	817		817
Year 3	2002	1569		1,569
Year 4	2003	1331		1,331
Year 5	2004	94		94
Year 6	2005	249		249
Year 7	2006	159		159
Year 8	2007	414		414
Year 9	2008	1493		1,493
Year 10	2009	2083		2,083
Year 11	0			0
Year 12	0			0
Year 13	0			0
Year 14	0			0
Year 15	0			0
5 Year Baseline - Water into Distribution System				
Year 1	2004	94		94
Year 2	2005	249		249
Year 3	2006	159		159
Year 4	2007	414		414
Year 5	2008	1493		1,493
¹ <i>Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in Table 2-3.</i> ² <i>Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

SB X7-7 Table 4-B: Indirect Recycled Water Use Deduction (For use only by agencies that are deducting indirect recycled water)										
Baseline Year <i>Fm SB X7-7 Table 3</i>	Surface Reservoir Augmentation					Groundwater Recharge			Total Deductible Volume of Indirect Recycled Water Entering the Distribution System	
	Volume Discharged from Reservoir for Distribution System Delivery ¹	Percent Recycled Water	Recycled Water Delivered to Treatment Plant	Transmission/ Treatment Loss ¹	Recycled Volume Entering Distribution System from Surface Reservoir Augmentation	Recycled Water Pumped by Utility ^{1, 2}	Transmission/ Treatment Losses ¹	Recycled Volume Entering Distribution System from Groundwater Recharge		
10-15 Year Baseline - Indirect Recycled Water Use										
Year 1	2000		-		-			-		-
Year 2	2001		-		-			-		-
Year 3	2002		-		-			-		-
Year 4	2003		-		-			-		-
Year 5	2004		-		-			-		-
Year 6	2005		-		-			-		-
Year 7	2006		-		-			-		-
Year 8	2007		-		-			-		-
Year 9	2008		-		-			-		-
Year 10	2009		-		-			-		-
Year 11	0		-		-			-		-
Year 12	0		-		-			-		-
Year 13	0		-		-			-		-
Year 14	0		-		-			-		-
Year 15	0		-		-			-		-
5 Year Baseline - Indirect Recycled Water Use										
Year 1	2004		-		-			-		-
Year 2	2005		-		-			-		-
Year 3	2006		-		-			-		-
Year 4	2007		-		-			-		-
Year 5	2008		-		-			-		-
¹ Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in Table 2-3. provide supplemental sheets to document the calculation for their input into "Recycled Water Pumped by Utility". The volume reported in this cell must be less than total groundwater pumped - See Methodology 1, Step 8, section 2.c.										
² Suppliers will										
NOTES:										

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

Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	2000	31,913	8,327	233
Year 2	2001	32,272	8,001	221
Year 3	2002	32,639	8,869	243
Year 4	2003	33,002	8,756	237
Year 5	2004	33,356	9,930	266
Year 6	2005	33,702	9,258	245
Year 7	2006	34,042	8,855	232
Year 8	2007	34,376	9,164	238
Year 9	2008	34,706	10,538	271
Year 10	2009	35,026	9,577	244
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				243
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2004	33,356	9,930	266
Year 2	2005	33,702	9,258	245
Year 3	2006	34,042	8,855	232
Year 4	2007	34,376	9,164	238
Year 5	2008	34,706	10,538	271
5 Year Average Baseline GPCD				250
NOTES:				

SB X7-7 Table 6: Baseline GPCD <i>Summary</i> <i>From Table SB X7-7 Table 5</i>	
10-15 Year Baseline GPCD	243
5 Year Baseline GPCD	250
NOTES: 	

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

Target Method		Supporting Tables
<input type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D
<input type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input checked="" type="checkbox"/>	Method 4	Method 4 Calculator <i>Located in the WUE Data Portal at wuedata.water.ca.gov Resources button</i>

NOTES:

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	2020 Target GPCD
243	194
NOTES: <div></div>	

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

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

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

5 Year Baseline GPCD From SB X7-7 Table 5	Maximum 2020 Target ¹	Calculated 2020 Target ²			Confirmed 2020 Target ⁴
		As calculated by supplier in this SB X7-7 Verification Form	Special Situations ³		
			Prorated 2020 Target	Population Weighted Average 2020 Target	
250	238	194			194

¹ **Maximum 2020 Target** is 95% of the 5 Year Baseline GPCD except for suppliers at or below 100 GPCD.

² **Calculated 2020 Target** is the target calculated by the Supplier based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target. Supplier may only enter one calculated target.

³ **Prorated targets and population weighted target** are allowed for special situations only. These situations are described in Appendix P, Section P.3

⁴ **Confirmed Target** is the lesser of the Calculated 2020 Target (C5, D5, or E5) or the Maximum 2020 Target (Cell B5)

NOTES:

**2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS
DISTRICT NO. 1**

Appendix G – MWD and Calleguas Supply and Demand Tables

June 14, 2021

Appendix G – MWD and Calleguas Supply and Demand Tables

Table 2-1
Metropolitan Regional Water Demands
Single Dry-Year
(Acre-Feet)

	2025	2030	2035	2040	2045
A. Total Demands¹	4,929,000	5,037,000	5,160,000	5,265,000	5,378,000
Retail Municipal and Industrial	4,397,000	4,507,000	4,626,000	4,737,000	4,848,000
Retail Agricultural	144,000	134,000	130,000	122,000	123,000
Seawater Barrier	61,000	61,000	61,000	61,000	61,000
Storage Replenishment	327,000	334,000	343,000	345,000	346,000
B. Total Conservation	1,162,000	1,211,000	1,263,000	1,325,000	1,389,000
Existing Active (through 2020) ²	93,000	55,000	35,000	25,000	17,000
Code-based	560,000	623,000	665,000	701,000	731,000
Price-Effect ³	259,000	283,000	313,000	349,000	391,000
Pre-1990 Conservation	250,000	250,000	250,000	250,000	250,000
C. Total Local and Other Imported Supplies	2,501,000	2,604,000	2,702,000	2,722,000	2,743,000
Groundwater	1,278,000	1,300,000	1,324,000	1,333,000	1,344,000
Surface Water	78,000	80,000	80,000	80,000	80,000
Los Angeles Aqueduct ⁴	119,000	119,000	119,000	119,000	119,000
Seawater Desalination	56,000	56,000	56,000	56,000	56,000
Groundwater Recovery	143,000	157,000	158,000	158,000	159,000
Recycling ⁵	550,000	613,000	687,000	698,000	706,000
Other Imported Supplies ⁶	278,000	278,000	278,000	278,000	278,000
D. Total Metropolitan Demands	1,266,000	1,222,000	1,195,000	1,218,000	1,247,000
Consumptive Use	1,125,000	1,081,000	1,055,000	1,078,000	1,107,000
Seawater Barrier	4,000	4,000	4,000	4,000	4,000
Replenishment	136,000	136,000	136,000	136,000	136,000

Notes:

All units are acre-feet unless specified, rounded to the nearest thousand.

Totals may not sum due to rounding.

¹ Growth projections are based on SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy and SANDAG San Diego Forward: The 2019 Federal Regional Transportation Plan.

² Does not include future active conservation savings. 1990 is base year.

³ Includes un-metered water use savings.

⁴ Los Angeles Aqueduct Projection uses 1977 hydrology.

⁵ Excludes Santa Ana River base flow, which is used for recharge of Orange County groundwater basin and reflected in the Groundwater production numbers.

⁶ Exchange with SDCWA.

Table 2-2
Metropolitan Regional Water Demands
Drought Lasting Five Consecutive Water Years
(Acre-Feet)

	2025	2030	2035	2040	2045
A. Total Demands¹	4,877,000	5,064,000	5,182,000	5,299,000	5,410,000
Retail Municipal and Industrial	4,414,000	4,540,000	4,658,000	4,777,000	4,889,000
Retail Agricultural	147,000	143,000	135,000	129,000	126,000
Seawater Barrier	61,000	61,000	61,000	61,000	61,000
Storage Replenishment	255,000	319,000	327,000	332,000	334,000
B. Total Conservation	1,162,000	1,211,000	1,263,000	1,325,000	1,389,000
Existing Active (through 2020) ²	93,000	55,000	35,000	25,000	17,000
Code-based	560,000	623,000	665,000	701,000	731,000
Price-Effect ³	259,000	283,000	313,000	349,000	391,000
Pre-1990 Conservation	250,000	250,000	250,000	250,000	250,000
C. Total Local and Other Imported Supplies	2,400,000	2,561,000	2,660,000	2,713,000	2,736,000
Groundwater	1,240,000	1,293,000	1,316,000	1,333,000	1,345,000
Surface Water	77,000	76,000	77,000	77,000	77,000
Los Angeles Aqueduct ⁴	118,000	118,000	118,000	118,000	118,000
Seawater Desalination	56,000	56,000	56,000	56,000	56,000
Groundwater Recovery	139,000	152,000	158,000	158,000	159,000
Recycling ⁵	491,000	588,000	658,000	694,000	703,000
Other Imported Supplies ⁶	278,000	278,000	278,000	278,000	278,000
D. Total Metropolitan Demands	1,314,000	1,292,000	1,259,000	1,261,000	1,286,000
Consumptive Use	1,221,000	1,164,000	1,130,000	1,132,000	1,158,000
Seawater Barrier	8,000	4,000	4,000	4,000	4,000
Replenishment	85,000	124,000	124,000	124,000	124,000

Notes:

All units are acre-feet unless specified, rounded to the nearest thousand.

Totals may not sum due to rounding.

¹ Growth projections are based on SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy and SANDAG San Diego Forward: The 2019 Federal Regional Transportation Plan.

² Does not include future active conservation savings. 1990 is base year.

³ Includes un-metered water use savings.

⁴ Los Angeles Aqueduct Projection uses 1988-1992 hydrology.

⁵ Excludes Santa Ana River base flow, which is used for recharge of Orange County groundwater basin and reflected in the Groundwater production numbers.

⁶ Exchange with SDCWA.

Table 2-3
Metropolitan Regional Water Demands
Normal Water Year
(Acre-Feet)

	2025	2030	2035	2040	2045
A. Total Demands¹	4,925,000	5,032,000	5,156,000	5,261,000	5,374,000
Retail Municipal and Industrial	4,403,000	4,514,000	4,632,000	4,743,000	4,854,000
Retail Agricultural	144,000	134,000	130,000	123,000	123,000
Seawater Barrier	61,000	61,000	61,000	61,000	61,000
Storage Replenishment	316,000	323,000	332,000	334,000	335,000
B. Total Conservation	1,162,000	1,211,000	1,263,000	1,325,000	1,389,000
Existing Active (through 2020) ²	93,000	55,000	35,000	25,000	17,000
Code-based	560,000	623,000	665,000	701,000	731,000
Price-Effect ³	259,000	283,000	313,000	349,000	391,000
Pre-1990 Conservation	250,000	250,000	250,000	250,000	250,000
C. Total Local and Other Imported Supplies	2,613,000	2,712,000	2,809,000	2,836,000	2,860,000
Groundwater	1,255,000	1,273,000	1,296,000	1,311,000	1,326,000
Surface Water	80,000	82,000	82,000	82,000	82,000
Los Angeles Aqueduct ⁴	257,000	257,000	258,000	258,000	258,000
Seawater Desalination	51,000	51,000	51,000	51,000	51,000
Groundwater Recovery	143,000	157,000	158,000	158,000	159,000
Recycling ⁵	550,000	613,000	687,000	698,000	706,000
Other Imported Supplies ⁶	278,000	278,000	278,000	278,000	278,000
D. Total Metropolitan Demands	1,149,000	1,110,000	1,084,000	1,100,000	1,125,000
Consumptive Use	1,020,000	981,000	954,000	971,000	996,000
Seawater Barrier	4,000	4,000	4,000	4,000	4,000
Replenishment	125,000	125,000	125,000	125,000	125,000

Notes:

All units are acre-feet unless specified, rounded to the nearest thousand.

Totals may not sum due to rounding.

¹ Growth projections are based on SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy and SANDAG San Diego Forward: The 2019 Federal Regional Transportation Plan.

² Does not include future active conservation savings. 1990 is base year.

³ Includes un-metered water use savings.

⁴ Los Angeles Aqueduct Projection uses 1922-2017 hydrology.

⁵ Excludes Santa Ana River base flow, which is used for recharge of Orange County groundwater basin and reflected in the Groundwater production numbers.

⁶ Exchange with SDCWA.

Runoff data is available at:

- DWR (cdec) <https://cdec.water.ca.gov/>
- U.S. Geological Survey: <https://maps.waterdata.usgs.gov/mapper/?state=ca>
- Operators of local dams and reservoirs

Groundwater information is available at:

- Fox Canyon GMA: <http://fcgma.org/>
- State of California Sustainable Groundwater Management Website: <https://water.ca.gov/Programs/Groundwater-Management>
- California Statewide Groundwater Elevation Monitoring (CASGEM): <https://water.ca.gov/Programs/Groundwater-Management/Groundwater-Elevation-Monitoring--CASGEM>

7.1.4 Water Service Reliability

7.1.4.1 Water Service Reliability – Normal Year

As shown in Table 7-2, the estimated supply of water as determined by Metropolitan during an average (normal) year, together with Calleguas’ recycled water supply, and the District’s reasonably available outage supply are sufficient to meet the Calleguas’ projected normal year water demands from 2025 through 2045.

Table 7-2. Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals (autofill from Table 6-9)	114,187	115,300	117,460	118,906	119,364
Demand totals (autofill from Table 4-3)	87,541	88,665	90,846	92,307	92,769
Difference	26,646	26,635	26,614	26,599	26,595
NOTES: "Supply totals" does not include projected losses.					

7.1.4.2 Water Service Reliability – Single Dry Year

As shown in Table 7-3, the estimated supply of water from Metropolitan during a dry year is sufficient to meet the Calleguas’ projected dry year imported water demands from 2025 through 2045.

Table 7-3. Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals	113,080	114,190	116,346	117,791	118,244
Demand totals	86,435	87,556	89,734	91,193	91,651
Difference	26,645	26,634	26,612	26,598	26,593
NOTES: "Supply totals" does not include projected losses.					

7.1.4.3 Water Service Reliability – Five Consecutive Dry Years

Table 7-4 shows the water supply versus demand evaluation under five consecutive drought years. For the five consecutive drought years assessment, a steady ramp up in imported demand is projected to occur over the first 3 years. Following the 3rd consecutive drought year, an approximate 20 percent decrease in imported demand would be observed. This would most likely occur due to the implementation of Metropolitan’s WSAP or other external conservation messaging (e.g., SWRCB Conservation Targets for Community Water Systems). The 20 percent decrease in imported demand is consistent with what the Calleguas system experienced in 1988 through 1992 and again in 2012 through 2016. For example, during the 2012-2016 drought, imported demands decreased from 105,868 AF in 2014 to 86,537 AF in 2015 (about an 18 percent decrease). Sufficient supplies are projected to be available for the years 2025 through 2045.

Table 7-4. Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045 (Opt)
First year	Supply totals	117,282	117,293	119,045	120,784	121,644
	Demand totals	90,679	90,690	92,460	94,216	95,085
	Difference	26,603	26,603	26,585	26,568	26,559
Second year	Supply totals	124,402	124,414	126,305	128,182	129,111
	Demand totals	97,871	97,883	99,793	101,688	102,626
	Difference	26,532	26,532	26,513	26,494	26,485
Third year	Supply totals	125,797	125,809	127,727	129,631	130,573
	Demand totals	99,279	99,291	101,229	103,152	104,103
	Difference	26,518	26,518	26,499	26,479	26,470
Fourth year	Supply totals	102,480	102,489	103,952	105,404	106,123

Table 7-4. Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045 (Opt)
	Demand totals	75,729	75,739	77,216	78,683	79,408
	Difference	26,751	26,751	26,736	26,722	26,715
Fifth year	Supply totals	111,027	111,036	112,608	114,167	114,938
	Demand totals	84,331	84,341	85,928	87,503	88,282
	Difference	26,696	26,695	26,680	26,664	26,656

7.1.5 Management Tools, Options, and Other Considerations

Metropolitan manages supplies on a calendar year basis and follows its WSDM plan for water management actions in response to a potential surplus or shortage year.

Calleguas owns and operates two significant points of imported water storage (Lake Bard and the Las Posas ASR) that primarily function as sources of outage supply for the District. In every water service reliability scenario described in the UWMP, Calleguas maintains a supply reserve in the event of a supply interruption from Metropolitan.

The supply vs. demand difference of 27,500 AF represents reasonably available Calleguas Outage Storage: Lake Bard (7,500 AF) and the Las Posas ASR (20,000 AF) that is within direct control of Calleguas. More information on Calleguas historical groundwater storage can be found in Section 6.2.3.

Water use efficiency and the implementation of demand management measures (DMMs) are effective management tools for Calleguas. Water use efficiency contributes to the District's Reduced Reliance on the Delta as the supply Calleguas receives from Metropolitan is virtually all from the SWP. More information on the District's Reduced Reliance on the Delta can be found in Appendix L.

7.2 DROUGHT RISK ASSESSMENT

7.2.1 Data, Methods, and Basis for Water Shortage Condition

CWC Section 10635(b) requires every urban water supplier to include, as part of its urban water management plan, a drought risk assessment (DRA) for its water service as part of information considered in developing its demand management measures and water supply projects and programs. The DRA analysis allows suppliers to consider how to manage their water supplies during stressed hydrologic conditions in relation to variations in demand. The DRA helps a supplier to evaluate the functionality of its WSCP shortage response actions and understand the type and degree of response that is appropriate for managing water supplies. This evaluation can help the supplier to identify risks and take proactive steps before the next actual drought lasting at least five consecutive years.

CWC Section 10612 requires the DRA to be based on the driest five-year historic sequence for the agency's water supply. However, CWC Section 10635 also requires that the analysis consider plausible changes on projected supplies and demands due to climate change, anticipated regulatory

**2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS
DISTRICT NO. 1**

Appendix H – Water Shortage Contingency Plan

June 14, 2021

Appendix H – Water Shortage Contingency Plan

Water Shortage Contingency Plan

Final Draft

June 14, 2021

Prepared for:

Ventura County Waterworks
District No. 1 - Moorpark



Prepared by:

Stantec Consulting Services Inc.



WATER SHORTAGE CONTINGENCY PLAN FOR COUNTY OF VENTURA WATERWORKS DISTRICT NO. 1 – MOORPARK

June 14, 2021

Water Shortage Contingency Plan

As part of its UWMP, Water Code Section 10632 requires Suppliers to prepare and adopt a Water Shortage Contingency Plan (WSCP). 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.

The WSCP aligns with both Calleguas' WSCP as well as MWD to ensure continuity, collaboration, and efficiency. The WSCP also draws upon lessons learned from the 2012-2016 drought. The following discussion presents the various stages and the basis for implementation.

Water Supply Reliability Analysis

The primary source of water supply for the District has been water imported from MWD through Calleguas. The imported water is primarily treated water from the Sacramento-San Joaquin River Delta in Northern California, which is conveyed via State Water Project (SWP) facilities. In 2020, the District supplied a total of 7,112 AF from imported water purchased from Calleguas, which was 71% of the total water supply including recycled water.

The second largest source of water is groundwater extracted from the East Las Posas Groundwater Basin via five groundwater wells owned and operated by the District. Most of the groundwater meets all State and Federal water quality standards for drinking water with the exception that treatment is required at one of the well sites (Well No. 20) to lower iron and manganese levels below the State Secondary Maximum Contaminant Level (MCL) requirements. Each well site has a chlorine injection before being pumped into the potable water distribution system. In 2020, the District supplied a total of 1,966 AF from groundwater production, which was 20% of the total water supply including recycled water.

The District's Moorpark Water Reclamation Facility (MWRF) produces recycled water via tertiary treatment facilities owned and operated by the District. In 2020, the reclamation plant produced 941 AF of recycled water which accounted for 9% of supply. The District forecasts that recycled water demand will increase to 1,400 AFY by 2025, necessitating an expansion of the plant's tertiary treatment capacity; and to 2,200 AFY by 2040.

The District is in the planning stages of the Moorpark Desalter Project, which is a groundwater production and treatment system that is projected to provide up to 5,000 AFY of potable water for customers within the District's water service area. This project is currently in the planning phase.

Annual Water Supply and Demand Assessment Procedures

As an urban water supplier, VCWWD No. 1 must prepare and submit an Annual Water Supply and Demand Assessment. The Annual Water Supply and Demand Assessment is a written decision-making process for determining supply reliability each year, along with the data and methods used to evaluate

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reliability. The following information provides the procedures the District will undertake to complete and approve the Annual Assessment.

Decision-Making Process

To formally approve the Annual Assessment, the District staff will draft a board letter, resolution, and exhibits. They will also work with County Counsel on the public hearing requirements. The Water and Sanitation Department Director will then present these items to the County Board of Supervisors to adopt a resolution for the Annual Water Supply and Demand Assessment.

Data and Methodologies

The following provides a description of the key data inputs and methodologies that will be used in the Annual Assessment.

Evaluation Criteria

The District Staff Services Specialist Conservation/Legislative Coordinator coordinates with staff from Calleguas and MWD to ensure messaging and legislation is consistent and compliant among the agency guidelines. MWD's Annual Assessment is primarily based on MWD's ongoing Water Supply Drought Management process described in their 2020 UWMP Update.

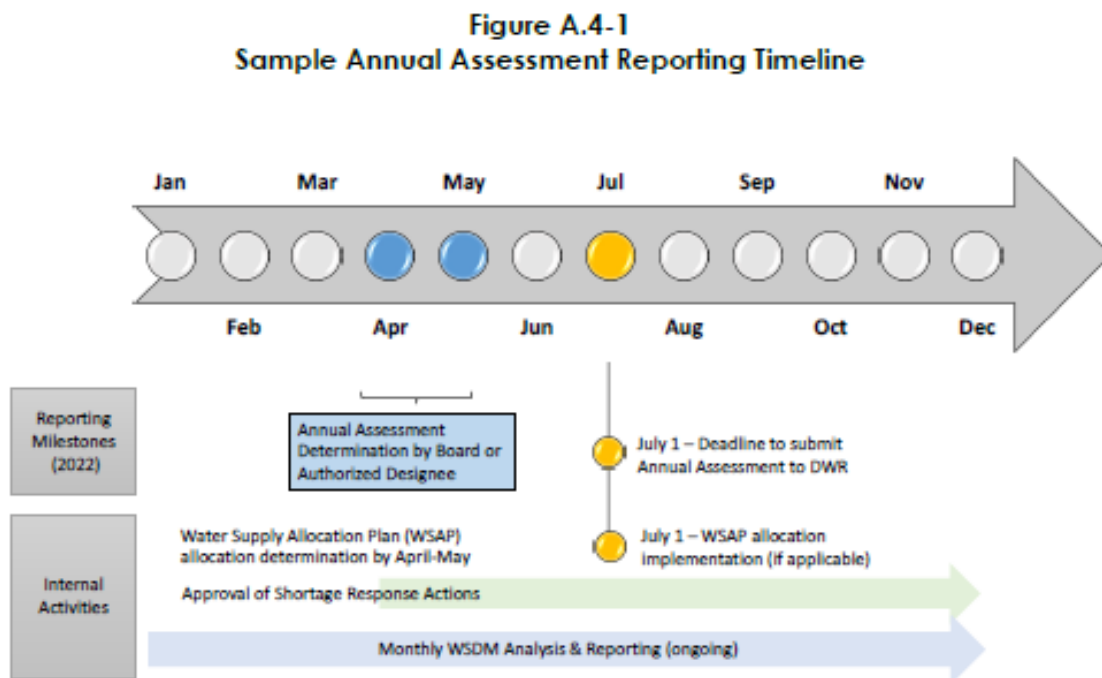


Figure 1 MWD Sample Annual Assessment Reporting Timeline (2020 UWMP)

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Water Supply

Water supply data is collected daily and reported on a weekly and monthly interval. The underlying data, as well as the reports, will be used in the Annual Assessment.

Current Year Unconstrained Customer Demand

The District is expected to use unconstrained customer demands when assessing water supply reliability or in other words the District's customer water needs for the year prior to any special shortage response actions. Customer demand projections provided in Chapter 4 of the UWMP consider historical demand trends, changes in local supply production, climate change, water-use efficiency trends, etc. These forecasted demands may need to be adjusted to account for any use of demand management measures such as conservation campaigns or other measures that come from Calleguas or MWD.

Current Year Available Supply

To plan for a future dry year the District will have to rely on meeting demands with extra imported water. The District imports approximately 70 to 80 percent of their annual supplies from Calleguas who receives water from MWD. In 2020, imported water accounted from 71 percent of the supply. Over the last few years, MWD has been able to rebuild its storage in reservoirs due to favorable supply conditions. MWD storage allows for a single dry year and at times multiple dry years. MWD has developed a Water Shortage Contingency Plan which is consistent with their current policies for managing regional water supplies during shortage periods. Current year supplies are discussed further in Chapter 6 of the 2020 UWMP.

Infrastructure Consideration

The District is preparing an update to their Water Master Plan and hydraulic system water model to evaluate distribution system needs currently and for future planning. The District has determined the existing Stockton Reservoir requires replacement and is currently in the design phase. In addition, the District determined a need for additional water supply sources to reduce their reliance on imported water. The Moorpark Desalter is a groundwater production and treatment system that would supplement imported water and removal of salts from the groundwater basin. It is estimated the Desalter will be online in 2030.

Other Factors

FCGMA may impose groundwater allocation cutbacks in the future.

Six Standard Water Shortage Stages

As required by CWC §10632(a)(3)(A), the WSCP is framed around six standard shortage levels that correspond to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortages. Each of the six shortage levels represents an increasing gap between the District's estimated core supplies and unconstrained demand as determined in the Annual Assessment. Shortage

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levels also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other emergency events. Table 1 shows the percent shortage range and its associated water shortage condition.

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DRAFT Submittal Table 1: Water Shortage Contingency Plan Levels		
Shortage Level	Percent Shortage Range	Water Shortage Condition
Permanent	--	The District has adopted permanent conservation methods such as water saving devices and prohibited water waste.
1	Up to 10%	The District will initiate a public information campaign to increase awareness of water conservation measures specified in the District's Rules and Regulations. Customers are expected to perform voluntary water use reductions and adhere to on-going water conservation measures.
2	Up to 20%	The District will expand the public information campaign and step-up enforcement of water conservation measures specified in the District's Rules and Regulations. It is mandatory for Customers to implement water use reductions and adhere to on-going water conservation measures.
3	Up to 30%	This stage requires additional mandatory water conservation actions, such as irrigation restrictions.
4	Up to 40%	This stage requires additional mandatory water conservation actions, such as water rationing for specific uses.
5	Up to 50%	This stage requires additional mandatory water conservation actions, such as water rationing for all customers.
6	>50%	This stage requires additional mandatory water conservation actions, such as increased water rationing for all water customers, no outdoor water use, etc.
NOTES:		

Shortage Response Actions

The following section specifies the types of shortage response actions that may be undertaken before and during a shortage declaration. Note that a shortage response actions will align with, and are in part dictated by, both Calleguas and MWD. Calleguas' policy is based on MWD's adopted Water Surplus and Drought Management Plan (WSDM Plan) as well as MWD's Water Supply Allocation Plan (WSAP) as revised in December 2014. The WSDM Plan recognizes the link between surplus and shortages and integrates planned operational actions with respect to both conditions. The WASP is designed to provide

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a framework for administering an allocation should a water shortage be declared. Table 2 provides a summary of the shortage stage and the suite of response actions the District may take.

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DRAFT Submittal Table 2: VCWWD Shortage Stages and Response Actions			
Shortage Stage	Shortage Percentage	Response Actions	
1	Up to 10%	<u>MWD & Calleguas:</u> Take from Storage Execute Flexible Supplies Implement Water Supply Allocation Plan (WSAP) ¹ <u>VCWWD:</u> Implement Demand Reduction	0 to 100% supply met by storage from Wholesaler 0 to 100% supply met by Flexible Supplies 0 to 50% of total base demand met by WSAP implementation 0 to 25% of total retail water use met by voluntary demand reduction
2	Up to 20%	<u>MWD & Calleguas:</u> Take from Storage Execute Flexible Supplies Implement Water Supply Allocation Plan <u>VCWWD:</u> Implement Demand Reduction	0 to 100% supply met by storage from Wholesaler 0 to 100% supply met by Flexible Supplies 0 to 50% of total base demand met by WSAP implementation 0 to 25% of total retail water use met by voluntary demand reduction
3	Up to 30%	<u>MWD & Calleguas:</u> Take from Storage Execute Flexible Supplies Implement Water Supply Allocation Plan <u>VCWWD:</u> Implement Demand Reduction	0 to 100% supply met by storage from Wholesaler 0 to 100% supply met by Flexible Supplies 0 to 50% of total base demand met by WSAP implementation 0 to 25% of total retail water use met by mandatory demand reduction
4	Up to 40%	<u>MWD & Calleguas:</u> Take from Storage Execute Flexible Supplies Implement Water Supply Allocation Plan <u>VCWWD:</u> Implement Demand Reduction	0 to 100% supply met by storage from Wholesaler 0 to 100% supply met by Flexible Supplies 0 to 50% of total base demand met by WSAP implementation 0 to 25% of total retail water use met by mandatory demand reduction
5	Up to 50%	<u>MWD & Calleguas:</u> Take from Storage Execute Flexible Supplies Implement Water Supply Allocation Plan <u>VCWWD:</u> Implement Demand Reduction	0 to 100% supply met by storage from Wholesaler 0 to 100% supply met by Flexible Supplies 0 to 50% of total base demand met by WSAP implementation 0 to 25% of total retail water use met by mandatory demand reduction
6	>50%	<u>MWD:</u> Take from Storage Execute Flexible Supplies Implement Water Supply Allocation Plan <u>VCWWD:</u> Implement Demand Reduction, No new service provided	0 to 100% supply met by storage from Wholesaler 0 to 100% supply met by Flexible Supplies 0 to 50% of total base demand met by WSAP implementation 0 to 25% of total retail water use met by mandatory demand reduction
Notes: Actions to increase water supply through storage extraction or execute flexible supplies is only available to MWD, but not the District. ¹ Implementing the Water Supply Allocation Plan would reduce VCWW supply and require additional conservation efforts to make up for lost supply.			

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Supply Augmentation

The District does not have additional contracts to acquire emergency dry year supply on a short-term basis. The District will rely upon shortage response actions to address the gap between supply and demand. However, MWD has the ability to augment supply by extracting water from its storage facilities and from transfer and exchange programs. For more information on MWD's plan, see their WSCP.

Demand Reduction

Demand reduction actions are temporary measures that can constrain demand in the current year, such as public information campaigns and mandatory allocations. The intensity of demand reduction measures will vary by the severity of shortage and availability of other cost-effective measures. Early demand reduction actions are voluntary measures. More severe conditions may necessitate mandatory restrictions on landscape use, special water features, and residential water features. Table 3 shows the supply augmentation methods and other actions available to the District.

DRAFT Submittal Table 3: Demand Reduction Actions			
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? <i>Include volume units used.</i>	Penalty, Charge, or Other Enforcement?
Permanent	<ul style="list-style-type: none">• Provide rebates for plumbing fixtures and devices• Prohibit water waste		No
1 and 2	<ul style="list-style-type: none">• Education and outreach campaign• Landscape water use voluntary restriction		No
3 and 4	In addition to the measures listed above, <ul style="list-style-type: none">• Landscape water use mandatory restriction• Special water feature restriction• Vehicle washing restrictions		Yes
5	In addition to the measures listed above, <ul style="list-style-type: none">• Landscape water use prohibited		Yes
6	In addition to the measures listed above, <ul style="list-style-type: none">• Moratorium on new services		Yes

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Permanent Conservation Level

As set forth by the Rules and Regulations, the District has a permanent water conservation. The District has implemented the following requirements:

- New customers install and use water efficient plumbing features
- Water waste is prohibited

For more detail, refer to the Rules and Regulations.

Shortage Levels 1 and 2

Under Shortage Levels 1 and 2, the following demand reduction measures would be applied:

- Expand Public Information Campaign.
- Landscape water use voluntary restriction.

Shortage Levels 3 and 4

Under Shortage Levels 3 and 4, the following demand reduction measures would be applied in addition to those implemented at Levels 1 and 2:

- Landscape water use mandatory restriction. When landscape water use restrictions are mandatory, the District implements an updated, more limited watering schedule with higher fines for noncompliance. The District will send out patrols to ensure compliance and will also make an online form available for customers to identify those out of compliance
- Special Water Features. Water for decorative water features is restricted. Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the declaration of a supply shortage level. For recreational water features, re-filling of more than one foot and initial filling of residential swimming pools or outdoor spas with potable water is prohibited.
- Vehicle Washing Restriction. The District prohibits vehicle washing, with the following exceptions: by hand-held bucket or container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, by high pressure/low volume wash systems, or at a commercial car washing facility that utilizes a recirculating water system to capture or reuse water

Shortage Level 5

Under Shortage Level 5, the District would continue to implement the demand reduction measures listed in Stages 3 and 4. However, landscape water use would move from mandatory restrictions to prohibited.

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- Landscape water use prohibited. Watering or irrigating of lawn, landscape, or other vegetated areas with potable water is prohibited. However, this restriction does not apply to the following categories of use, unless it is determined by the Director that recycled water is available and may be applied to the use:
 - Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container or handheld hose equipped with a positive self-closing water shutoff nozzle or device.
 - Maintenance of existing landscape necessary for fire protection.
 - Maintenance of existing landscape for soil erosion control.
 - Maintenance of plant materials identified to be rare or essential to the well-being of protected species.
 - Maintenance of landscape within active public parks and playing fields, day-care centers, golf course greens, and school grounds, provided that such irrigation does not exceed two (2) days per week according to the schedule established in rules and regulations.
 - Actively irrigated environmental mitigation projects.

Shortage Level 6

Under Shortage Levels 6, the District would continue to implement the demand reduction measures outlined in Storage Level 5. In addition, the District would:

- Stop new water service. No new potable water service will be provided, no new temporary meters or permanent meters will be provided, and no statements of immediate ability to serve or provide potable water service (such as will-serve letters, certificates, or letters of availability) will be issued, except under the following circumstances:
 - A valid, unexpired building permit has been issued for the project; or
 - The project is necessary to protect the public health, safety, & welfare; or
 - The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the District.

Operational Changes

The District has several operational changes they may implement during the various water shortage levels. The operational changes occur both at the staff, financial, and technical level.

Enforcement Responsibilities. The District staff will administer the water auditing program and designate sites for monitoring and enforcement of irrigation restrictions. The District staff will monitor and

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respond to the water violation reports. The District has a form, found at www.vcpublishworks.org “Report a Concern” titled “Report Water Runoff” where customers and staff can report water violations.

Communications Roll Out. The Director will approve the District staff to provide the public with appropriate updates and messaging. For more information about the Communication Plan, see “Communication Protocols”.

Repair Leaks, Breaks, and Malfunctions. All leaks, breaks, or other malfunctions in the water user’s plumbing or distribution system must be repaired within forty-eight (48) hours of notification as set forth in Rule 1-J-4b (ii) unless other arrangements are made with the District.

No New Potable Water Service. Upon declaration of a Level 6 Water Supply Shortage Emergency, no new potable water service will be provided, no new temporary meters or permanent meters will be provided, and no statements of immediate ability to serve or provide potable water service (such as will-serve letters, certificates, or letters of availability) will be issued, except under the following circumstances:

- A valid, unexpired building permit has been issued for the project; or
- The project is necessary to protect the public health, safety, & welfare; or
- The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the District.

No New Annexation. Upon the declaration of a Level 6 Water Supply Shortage condition, the District will suspend consideration of annexations to its service area. This subsection does not apply to boundary corrections and annexations that will not result in any increased use of water.

Additional Mandatory Restrictions

The County does not have any additional mandatory restrictions outside of the previous demand reduction actions.

Emergency Response Plan

A water shortage emergency could be the result of a catastrophic event such as result of drought, failures of transmission facilities, a regional power outage, earthquake, flooding, supply contamination from chemical spills, or other adverse conditions. These emergencies and the District’s method for handling them are described below. Note these emergency efforts would be in line with the Level 6 Water Shortage unless otherwise stated.

Earthquakes or Other Natural Disasters. The District and its wholesale suppliers are located in an earthquake zone. In the event of an earthquake or natural disaster, the District has the potential of losing its imported water supply. For information on how the District would handle an earthquake, see the section below.

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In their WSCP, Calleguas describes the actions they would take should an earthquake interrupt their only intake with MWD. Calleguas would conduct an initial assessment of the outage, make a call for conservation with no outdoor water use, and then determine imported water outage protocol (IWOP) allocation should be implemented. Calleguas would meet demands with supply from Lake Bard and local groundwater basins through an aquifer recovery program.

Similar to Calleguas, MWD can meet demand with other sources should an earthquake cause a major outage. MWD has invested heavily in emergency storage facilities located both in and out of the region because the LA Aqueduct, California Aqueduct, and CRA cross the San Andreas Fault. MWD's emergency storage mandate is to maintain 75 percent of their demand for six months from within the earthquake fault lines. For more information, refer to MWD's WSCP.

Contamination. Contamination of water supply can result from a number of different events including a water main break, cross-connection condition, water source pollution, or covert action. Water supplies for the District are generally of good quality and no foreseeable permanent contamination issues are anticipated. In the event of a toxic spill or major contamination, the District would isolate the problem and reduce the impact to the water supply. Once the problem has been isolated, the contamination would be cleaned up using chlorination or other necessary procedures and the water supply returned to service as soon as possible. In the meantime, alternative supply would be utilized to meet demand. Implementation of additional demand management measures could also be utilized if the outage is anticipated to be of longer duration.

Power Outage. In the event of a regional power outage, the District would follow the procedures outlined in their Emergency Procedures Manual (EPM) Section VII. The District's EPM identifies various levels of emergencies and provides examples of actions for a number of given emergencies, including power failure. Standby generators are available at each of the District's well and pump station sites to maintain operation should an interruption of power occur. Section IX of the EPM lists all of the stationary and mobile generators located at the various District facilities, with model numbers, kilowatt rating, and fuel tank capacity. In addition, the District would implement the procedures outlined in the Rules and Regulations regarding water shortages which include sanctions for any event which results in loss of supply.

Regardless of the catastrophic event category, the District would follow a standard set of procedures as outlined in their Ventura County Public Works Agency Emergency Operations Procedure National Incident Management System (NIMS) Implementation Plan, updated in October 2020. In the event of an incident that requires response of the Water and Sanitation resources, the Water & Sanitation Director would activate a Water & Sanitation Operations Center (WSOC). The WSOC can request mutual aid from other departments or agencies and provide updates to the Public Works Agency Operations Center. If the incident requires public outreach, the Emergency Operations center (EOC) would issue a warning and provide instructions to public and request assistance from State and Federal resources. Communication would be handled via our Ventura County Public Works Agency -Alert System (Everbridge Mass Notification System).

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Seismic Risk Assessment and Mitigation Plan

VCWWD No. 1 does conduct its own seismic risk on its facilities but was a participant in the 2015 Ventura County Multi-Hazard Mitigation Plan (Hazard Plan)¹ to assess risk caused by various hazards and establish mitigation measures to avoid these risks. As part of the plan, seismic risk in the Ventura County region, including the District's service area, was evaluated.

The District's has both potable water and recycled water facilities within its service area. The District's potable water distribution system consists of 10 booster pumping stations, 20 pressure-reducing stations, 6 production wells, 10 imported water turnouts, 18 reservoirs and approximately 138 miles of distribution and transmission pipelines. The recycled water distribution system consists of a network of distribution mains and booster pumps to serves 13 customers.

Seismic Risk

The largest water supply for the District is imported water from Calleguas Municipal Water District (CMWD) in which 100% of that supply is delivered from Metropolitan Water District of Southern California (MWD) through a single connection, the East Portal conveyance channel in Chatsworth. Once in Calleguas' service facilities, supply is distributed throughout Ventura County including VCWWD No. 1. A substantial earthquake could damage or destroy this single-point connection, Calleguas' infrastructure or any of the turnout connections between Calleguas and the District, leaving a water shortage. For more information on the seismic risk to the Calleguas service facilities, including assessment on the Santa Susana Tunnel, see the 2020 Urban Water Management Plan Final Draft for Calleguas Municipal Water District (June 2021).

Locally, VCWWD. No. 1's facilities are in close proximity to the Simi-Santa Rosa fault zone. This fault zone extends from the Santa Susana Mountains westward along the northern margin of the Simi and Tierra Rejada valleys and along the southern slope and crest of the Las Posas Hills to their westerly termination. The Simi-Santa Rosa fault zone crosses the southern portion of the District service area as shown in Figure . Per the Hazard Plan the likely maximum magnitude earthquake along the Simi-Santa Rosa fault system is referenced as 6.7 with a recurring interval of 933 years. Hazards outlined in the Hazard Plan include surface fault rupture, landslides, and liquefaction caused by seismic activity. Based on the referenced California Geological Survey geological hazard maps² for fault, landslides, and liquefaction in the Hazard Plan, portions of the District's facilities are prone to these hazards making the District's facilities susceptible to a disruption on their water distribution system in the event of an earthquake.

Based on the Hazard Plan for Ventura County, the Districts Service area is in the "Violent Ground Shaking" categorical area. The summary of impacts caused by violent ground shaking showed 65.63% impact to critical facilities.¹ This percentages includes public utilities, pump stations, electric substations, potable water facilities, wastewater facilities, wells, dams, reservoirs, debris basins hydro stations, meter stations, and stream and river gages for the entire county. Based on the Hazard Plan approximately 89%

¹ Ventura County Multi-Hazard Mitigation Plan 2015

² <https://maps.conservation.ca.gov/geologichazards/#datalist>

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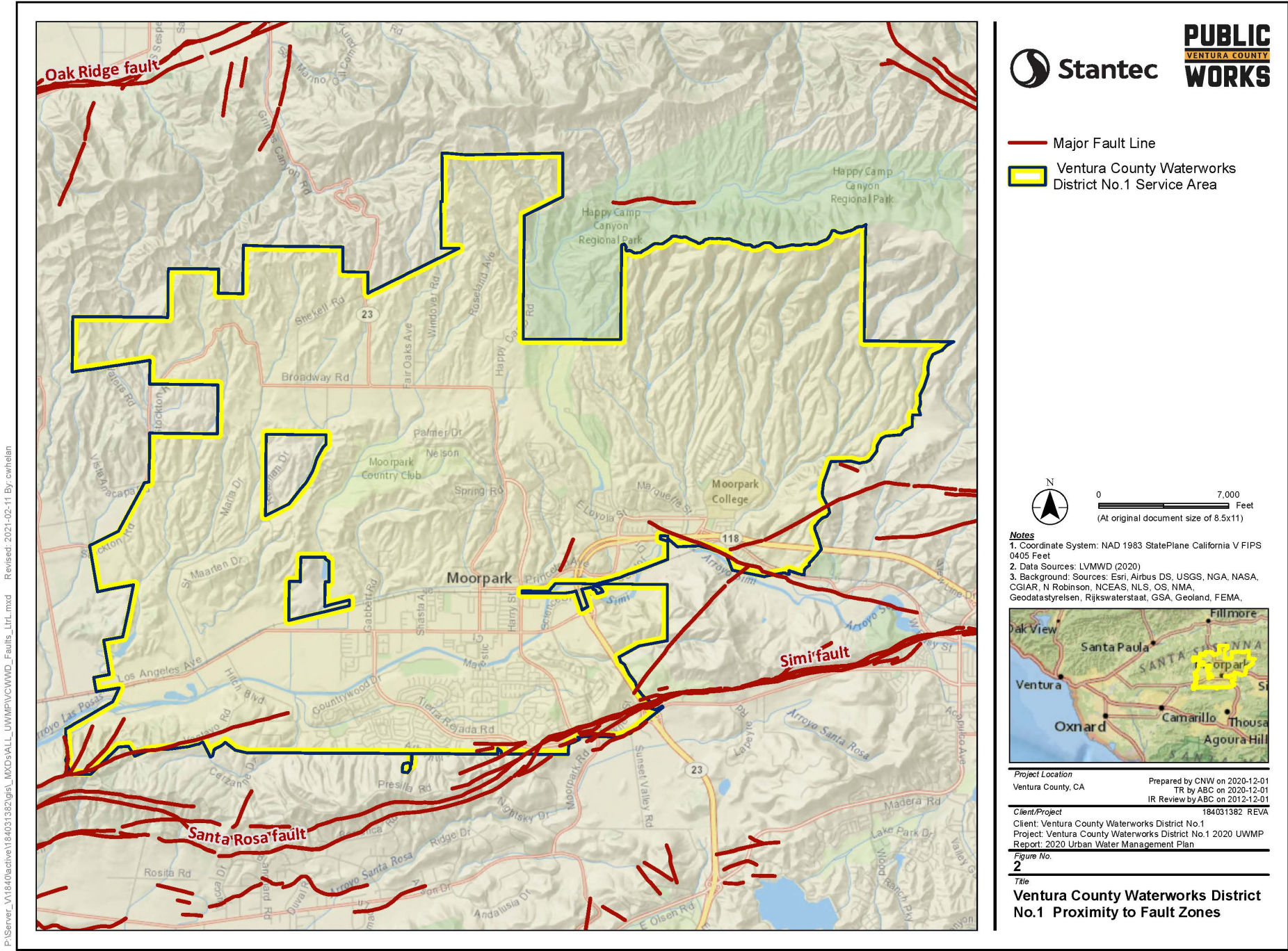
of Moorpark's population would be affected by shaking and 49% of the area susceptible to liquefaction. Also, the District's facilities to the north and south near the foothills are susceptible to landslides.

See Figure 2 for a map showing major fault lines applicable to VCWWD No. 1's service boundary.

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2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1



Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

Figure 2: Ventura County Waterworks District No. 1 Proximity to Fault Zones

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Mitigation Measures

In the event of seismic activity causing damage to a portion of the District's distribution facilities the District can rely on its multiple reservoirs and pressure zones that are undamaged to feed the affected portions of the service area by opening division gate valves along their distribution system, as necessary.

In 2020, the district only relied on 66% of its imported water allocation. If a seismic event caused damage or a local power outage to the groundwater production facilities, the District could exercise additional imported water up to the full import allocation of 10,723 AFY from CWMD to supplement as needed.

In the event the District's imported water supply has been impacted, the District could temporarily increase its groundwater production to meet water demand until the imported water supply facilities are repaired, and the supply is restored.

In the event of a prolonged loss of imported water, the District can implement their established Water Shortage Plan from the Rules and Regulations to substantially reduce demands until supply is restored.

Communication Protocols

The District has several communication tools and methods in place engage customers, the public, elected officials, and other agencies. These include Everbridge Mass Notification Alert system, the Citizen's Advisory Committee, outreach, and collaboration with other agencies. These methods are not limited to any single water shortage level but would be used in varying degrees at all levels. However, there is an exception with the Everbridge alert system.

Launched in 2020, the District uses the Everbridge alert system for mass communication during emergencies or pertinent information the Director deems essential. In the event of a crisis, the District has two employees readily available to send out alerts via text, email, and/or call. The District has 13,657 customers signed up for this alert system and is using social media and meetings to encourage more users.

In 1965, the District created a Citizen's Advisory Committee which has 5 members, all of whom live within the District, and holds a public meeting the second Tuesday of the month. The purpose of each Citizen's Advisory Committee is to review staff recommendations regarding annual budgets, water and sanitation rate adjustments, capital improvement projects, annexation issues, new policy items, other issues related to management of the Districts, and to make recommendations to the Board. Every meeting as a standing agenda item to discuss water supply conditions, which can be used as an opportunity to convey the water shortage levels and action plan.

The District also uses various outreach methods to communicate with customers such as e-flyers, social media (VCPWA Facebook, Twitter, and Nextdoor), website updates (vcpwaworks.org/wsd), a mobile app (VCPWA Connect), and billing inserts. The District uses these outreach methods to provide timely updates about infrastructure issues, road closures due to work, meetings, and so on. The Staff Services Specialist/PIO is responsible for creating the notifications, and the Department Director approves all notifications/posts to customers. The District recognizes that not all customers use or have access to the internet and use alternative methods such as bill inserts and messaging and newspaper ads to communicate with their customers. The District also readily provides information in Spanish and can translated their content into any language upon request. The District plans to use these methods at all water shortage levels.

In the event of an emergency, the Department Director would use the VCPWA- Alert system to send out mass communications, as necessary. The District staff would inspect facilities once it is deemed safe to do so and report back to the Agency Director.

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The tools and methods outlined above augment and compliment the efforts by Calleguas and MWD. Both entities have extensive communication and outreach campaigns as outlined in their WSCPs. To ensure the collaboration and continuity of these outreach efforts, the Staff Services Specialist and Conservation/Legislative Coordinator currently attends regular meetings with both Calleguas and MWD. In the event that a water shortage is declared, the District anticipates these meetings will increase in frequency.

Compliance and Enforcement

The District's WSCP is detailed in the District's Rules and Regulations (Part 1 – Section J). Penalties are imposed for violations of the WSCP as described in Part 1 - Section K of the District's Rules and Regulations. The penalties are based upon the number and frequency of violations and are discussed below:

- a. For the first violation a written notice will be given to the customer.
- b. For the second violation within the preceding twelve (12) calendar months, a penalty of one hundred dollars (\$100.00) shall be imposed by written notice to the customer.
- c. For the third violation within the preceding twelve (12) calendar months a penalty of two hundred and fifty dollars (\$250.00) shall be imposed by written notice to the customer.
- d. For the fourth violation within the preceding twelve (12) calendar months, a penalty of five hundred dollars (\$500.00) shall be imposed by written notice to the customer. The District may also give written notice to the customer indicating that it will install a flow restricting device of 1 gpm capacity for services up to one- and one-half inch meter size, and comparatively sized restrictors for larger services, on the service of the customer at the premises at which the violation occurred for a period of less than forty-eight (48) hours. The charge for installing such a flow restricting device will be based upon the size of the meter and the actual cost of installation. The charge for removal of the flow restricting device and restoration of normal service shall be based on the actual cost involved.
- e. If there are five violations within twelve (12) consecutive calendar months, the District may discontinue water service to the customer at the premises at which the violation occurred.

Legal Authorities

In the event of a water shortage, the Director of the County of Ventura Water and Sanitation Department of the Public Works Agency is authorized and directed by to declare a water shortage emergency and implement provisions of the WSCP, subject to ratification by the District Board at its first regularly scheduled meeting. The Director determines the extent of conservation or water use efficiency required through the implementation and/or termination of particular conservation stages or levels. However, in the case of local emergencies, the Director of the Water and Sanitation Department has the authority to order the implementation of the appropriate stage of water conservation. In addition to coordinating efforts with any city or county within which it provides water supply services for the possible proclamation of a local

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emergency. These entities include but are not limited to the City of Moorpark, Calleguas Municipal Water District, and Metropolitan Water District.

In addition, the District “shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency” (California Government Code, California Emergency Services Act, Article 2, Section 8558).

Financial Consequences of WSCP

[This section is subject to change following Director’s input on financial mitigation measures.] The District receives water revenue from a commodity charge and a tiered rate structure for water service. The rates have been designed to recover the bulk of the cost of water service in the commodity charge. An assessment of the revenue impacts as a result of the various stages of conservation previously showed that with the use of the Rate Stabilization Fund, the District would have sufficient funds to cover a water shortage without the need to increase water rates.

Monitoring and Reporting

Under normal conditions, potable water production figures are recorded daily. Weekly and monthly reports are prepared and monitored. This data is used to measure the effectiveness of any water shortage contingency stage that may be implemented. As stages of water shortage are declared by Metropolitan and Calleguas, the District will follow implementation of those stages and continue to monitor water demand levels.

WSCP Refinement Procedures

The District will consider revisions to the WSCP during the Annual Water Supply and Demand Assessment. If a revision is deemed necessary, District staff will make a revision and present the new content to the Citizen’s Advisory Committee for input. Following the meeting, District staff will make any final adjustments and present the final, revised version to the Board of Directors for approval.

Special Water Feature Distinction

CWC §10632 (b) requires retail suppliers to evaluate special water features that are artificially supplied with water but excludes swimming pools and spas. See Demand Reduction section on special water feature restrictions.

Plan Adoption, Submittal, and Availability

The District WSCP was developed and is included as an appendix in the 2020 Draft UWMP and shall be made available to its purveyors and any city or county within which it provides water supplies no later than 30 days after adoption. Below is a description of how the WSCP will be adopted, submitted, implemented, and amended. The WSCP may be periodically amended independently of the UWMP, as needed.

WATER SHORTAGE CONTINGENCY PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT NO. 1 – MOORPARK

June 14, 2021

The District provided notice of availability of the draft 2020 UWMP and 2020 WSCP in accordance with CWC. A public meeting will be held prior to the adoption of the District's WSCP. The public meeting will provide a platform for cities, counties, and members of the public to comment on the WSCP prior to its adoption. Notice of the public hearing was given to cities and counties within which water is supplied and to the general public.

A public hearing is scheduled to be held at Ventura County Government Center Hall of Administration Board of Supervisors Hearing Room 800 South Victoria Avenue, Ventura CA 93009 on June 22, 2021 to receive public comments.

Not later than 30 days after filing a copy of its plan with the Department of Water Resources (DWR), the urban water supplier and the DWR shall make the plan available for public review during normal business hours. The adopted 2020 UWMP and WSCP for the District will be made publicly available on the District's website <https://vcpbublicworks.org/wsd>.

**2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS
DISTRICT NO. 1**

Appendix I – 2015 Ventura County Multi-Hazard Mitigation Plan

June 14, 2021

Appendix I – 2015 Ventura County Multi-Hazard Mitigation Plan

PUBLIC DRAFT
2020 URBAN WATER MASTER PLAN FOR VENTURA COUNTY WATERWORKS DISTRICT
NO. 1

2015 Ventura County Multi-Hazard Mitigation Plan

June 14, 2021

2015 Ventura County Multi-Hazard Mitigation Plan

The 2015 Ventura County Multi-Hazard Mitigation Plan can be found online at: <http://vcfloodinfo.com/resources/ventura-county-hazards-mitigation-plan>

**2020 URBAN WATER MANAGEMENT PLAN FOR VENTURA COUNTY WATERWORKS
DISTRICT NO. 1**

Appendix J – DWR Checklist

June 14, 2021

Appendix J – DWR Checklist

Appendix K (DWR Appendix F). UWMP Checklist

This checklist is developed directly from the Urban Water Management Planning Act and SB X7-7. It is provided to support water suppliers (Suppliers) during preparation of their Urban Water Management Plans (UWMP). Two versions of the UWMP Checklist are provided below – the first one is organized according to the California Water Code and the second checklist according to subject matter. The two checklists contain duplicate information and the Supplier should use whichever checklist is more convenient*. In the event that information or recommendations in these tables are inconsistent with, conflict with, or omit the requirements of the Act or applicable laws, the Act or other laws shall prevail.

Each water supplier submitting an UWMP can also provide DWR with the UWMP location of the required element by completing the last column of either checklist. This will support DWR in its review of these UWMPs. The completed form can be included with the UWMP.

If an item does not pertain to a Supplier, then state the UWMP requirement and note that it does not apply to the Supplier. For example, if a Supplier does not use groundwater as a water supply source, then there can be a statement in the UWMP that groundwater is not a water supply source.

*For the purpose of Ventura County Waterworks District No. 1 Moorpark's 2020 UWMP, the checklist selected is organized by the CWC.

Checklist Arranged by Water Code Section

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5	Chapter 5
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	Section 5.7.2
10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5.7	Section 5.7
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	Sections 5.2 and 5.5.7	Sections 5.2 and 5.5.7

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Chapter 10	Chapter 10
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	Section 5.1
10608.4	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	Section 5.8 and App F
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	Section 2.1

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	Section 2.5.2
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	Section 7.4
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	Section 10.2.1
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	Sections 10.3.1 and 10.4	Sections 10.3.1 and 10.4

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
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.	Summary	Chapter 1	Chapter 1
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	Section 3.1
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	Section 3.3
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	Sections 3.4
10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 3.4	Section 3.4
10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	Section 3.4

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
10631(a)	Describe the land uses within the service area.	System Description	Section 3.5	Section 3.5
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 6.2.8	Section 6.2.8
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	Section 6.2
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	Section 6.2	Section 6.2

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
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	Section 6.1	Section 6.1
10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Section 6.1	Section 6.1
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 6.2.2	Section 6.2.2
10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 6.2.2	Section 6.2.2

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
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 6.2.2	Section 6.2.2
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 6.2.3	Section 6.2.3
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 6.2.4	Section 6.2.4
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 6.2	Section 6.2

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long- term basis.	System Supplies	Section 6.7	Section 6.7
10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	Section 4.2
10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Section 4.3	Section 4.3
10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 4.2	Section 4.2
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	Sections 9.2 and 9.3	Sections 9.2 and 9.3
10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	Sections 9.1 and 9.3

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
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 6.8	Section 6.8
10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	Section 6.6
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 2.5.1	Section 2.5.1
10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	Section 2.5.1
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	Section 4.5

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
10631.2(a)	The UWMP must include energy intensity information as stated in the code.		Section 6.4 and Appendix O	Section 6.4
10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Chapter 8	Chapter 8
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	Section 8.2	Section 8.2
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	Section 8.2	Section 8.2
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	Section 8.3	Section 8.3

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
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	Section 8.3	Section 8.3
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	Section 8.4	Section 8.4
10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Section 8.4	Section 8.4
10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Section 8.4	Section 8.4

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
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	Section 8.4	Section 8.4
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	Section 8.4	Section 8.4
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	Section 8.5	Section 8.5
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	Section 8.5, 8.6	Section 8.5, 8.6

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Section 8.7	Section 8.7
10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Section 8.7	Section 8.7
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	Section 8.7	Section 8.7
10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Section 8.8	Section 8.8

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
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	Section 8.8	Section 8.8
10632(a)(8)(C)	Describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought.	Water Shortage Contingency Planning	Section 8.8	Section 8.8
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	Section 8.9	Section 8.9
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	Section 8.10	Section 8.10

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
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	Section 8.11	Section 8.11
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.2	Section 6.2
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.2	Section 6.2
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.2	Section 6.2

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.2	Section 6.2
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.2	Section 6.2
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.2	Section 6.2
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	Chapter 7	Chapter 7

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	Section 7.3
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 7.3	Section 7.3
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 7.3	Section 7.3
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	Section 7.3	Section 7.3

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
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	Section 7.3	Section 7.3
10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change condition, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Section 7.3	Section 7.3
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 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Sections 8.12, 10.4	Sections 8.12, 10.4
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 2.6	Section 2.6

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
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.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	Sections 10.2.2, 10.3, and 10.5
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 10.2	Section 10.2
10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	Section 10.3.1
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.5	Section 10.5
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.5	Section 10.5

Water Code Section	Summary as Applies to UWMP	Subject	2020 Guidebook Location	2020 UWMP Location
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	Sections 10.4.1 and 10.4.2
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 10.5	Section 10.5
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 10.5	Section 10.5