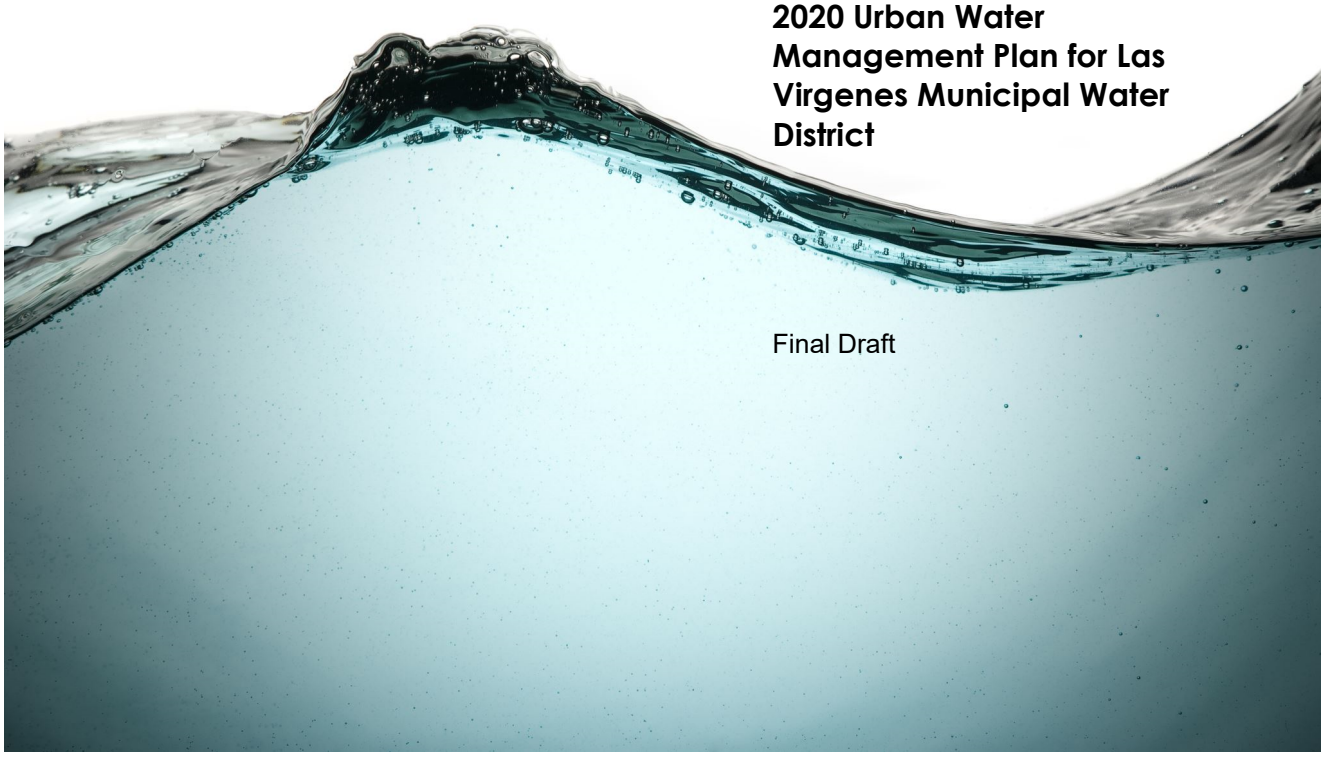

2020 Urban Water Management Plan for Las Virgenes Municipal Water District

Final Draft

Prepared for:
Las Virgenes Municipal Water District

Prepared by:
Stantec Consulting Services Inc.

June 1, 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
AMI/AMR	Advanced metering infrastructure / Automated Meter Reading
ARDWP	Annual Reports to the Drinking Water Program
AWWA	American Water Works Association
Bay-Delta	Sacramento-San Joaquin Bay-Delta
BMP	Best Management Practices
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
CIS	Customer Interface System
CMWD	Calleguas Municipal Water District
CRA	Colorado River Aqueduct
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CWC or Water Code	California Water Code
CY	Calendar Year
DDW	Division of Drinking Water
Delta	San Joaquin River Delta
DMM	Demand Management Measure
DRA	Drought Risk Assessment
DU	Dwelling Unit
DWR	Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPM	Emergency Procedures Manual
ERP	Emergency Response Plan
ESA	Endangered Species Act
ET	Evapotranspiration
Eto	Evapotranspiration from a Standardized Grass Surface
FY	Fiscal Year
GIS	Geographic Information System
gpcd	Gallons Per Capita Per Day
gpm	Gallons Per Minute
GSA	Groundwater Sustainability Agency
HCD	Housing and Community Development

ICS	Intentionally Created Surplus
IRP	Integrated Resources Plan
IWSMP	Integrated Water System Master Plan
LV	Las Virgenes
LVMWD or District	Las Virgenes Municipal Water District
MAF	Million Acre Feet
MGD	Million Gallons per Day
mg/L	Milligrams per Liter
MWELO	Model Water Efficient Landscape Ordinance
MWD	Metropolitan Water District of Southern California
PWS	Public Water System
RHNA	Regional Housing Needs Allocation
RUWMP	Regional Urban Water Management Plan
RW	Recycled Water
SB	California Senate Bill
SCAG	Southern California Association of Governments
SGMA	Sustainable Groundwater Management Act
SMP	Salinity Management Pipeline
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
TMDL	Total Maximum Daily Load
TWRF	Tapia Water Reclamation Facility
TWSD	Triunfo Water and Sanitation District
USBR	U.S. Bureau of Reclamation
UWMP	Urban Water Management Plan
VCWWD	Ventura County Waterworks District
WFP	Westlake Filtration Plant
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

Chapter 1: UWMP Introduction and Lay Description

1.1 Background and Purpose

This document presents the 2020 Urban Water Management Plan (UWMP) for the Las Virgenes Municipal Water District (LVMWD or District) to fulfill the requirements of the California Urban Water Management Planning Act (Act) and the Water Conservation Bill of 2009.

An UWMP is a planning tool that guides the actions of water management agencies. It provides managers and the public with a broad perspective on several water supply issues. It is not a substitute for project-specific planning documents, nor was it intended to be when mandated by the State Legislature. For example, the Legislature mandated that a plan include a Section which "describes the opportunities for exchanges or water transfers on a short-term or long-term basis." (California Urban Water Management Planning Act, Article 2, Section 10630(d).) The identification of such opportunities, and the inclusion of those opportunities in a general water service reliability analysis, neither commits a water management agency to pursue a particular water exchange/transfer opportunity, nor precludes a water management agency from exploring exchange/transfer opportunities not identified in the UWMP. When specific projects are chosen to be implemented, detailed project plans are developed, environmental analysis, if required, is prepared, and financial and operational plans are detailed.

The purpose of this 2020 UWMP is to provide LVMWD, its partner agencies, and the public with an updated status and long-term water resources 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 Water Conservation Act of 2009, also known as Senate Bill X7-7 (SB X7-7), and under the authorization of LVMWD.

Notification letters sent to agencies are provided in Appendix A.

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

The agenda for the public hearing and Adoption Resolution (passed by LVMWD Board of Directors on June 1, 2021) are provided in Appendix C.

A checklist to ensure compliance of this Plan with the Act requirements is provided in Appendix D.

1.2 UWMP Update and the California Water Code

This UWMP 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).

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

- 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 will also:

- Report progress toward meeting the targeted 20 percent reduction in per-capita (per-person) urban water consumption by the year 2020 set by the 2010 UWMP (which 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), 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 since the 2015 UWMP:

- Drought Risk Assessment and the Five Consecutive Dry-Year Water Reliability Assessment: to examine water supply reliability for five consecutive dry years (modified from a "multiyear" time period used in dry-year water reliability planning), suppliers are now required to project water supply reliability over a period from 2021 to 2025
- Seismic Risk Analysis: suppliers are now required to address the seismic risk to their water system facilities with an analysis of the risk as well as a mitigation plan should an event occur
- 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

- Water Use Efficiency and Conservation: LVMWD must demonstrate actual water use, as compared to the previously established 2020 target

1.2.2 Senate Bill 7 of the Seventh Extraordinary Session of 2009, Water Conservation in the Delta Legislative Package

On November 10, 2009, the California State Legislature passed Senate Bill 7 as part of the Seventh Extraordinary Session, referred to as SB X7-7, which became effective February 3, 2010. This law was the water conservation component to the historic Bay-Delta legislative package and seeks to achieve a 20% statewide reduction in urban, per capita water use in California by December 31, 2020. The law requires each urban retail water supplier to develop urban water use targets to help meet the 20% goal by 2020, and an interim urban water reduction target by 2015. The law is intended to promote urban water conservation standards consistent with the California Urban Water Conservation Council's adopted best management practices. Chapter 5 of this UWMP presents progress made toward the goals set in the previous plan.

1.3 Lay Description

LVMWD'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 LVMWD'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 LVMWD's Water System, Supply, and Demand

LVMWD's water comes from four sources: imported water, recycled water, groundwater, and surface water runoff (into the Las Virgenes Reservoir). The imported potable water comes from Metropolitan Water District and Ventura County Waterworks District's (VCWWD No. 17), (VCWWD No. 8), as well as from the City of Los Angeles. The Tapia Water Reclamation Facility produces the recycled water, and groundwater is pulled from the Thousand Oaks Area Basin (which is then used to supplement the recycled water systems).

The District has two (2) separate water systems: one for potable water to serve potable retail customers, and one for recycled water to serve irrigation customers. Figure 6-1 in Chapter 6 shows a schematic of water supplies to each system. LVMWD's potable water distribution system includes 25 storage tanks, 24 pump stations, and nearly 400 miles of pipelines. LVMWD's recycled water distribution system consists of 62 miles of pipelines, 3 storage tanks, 3 open reservoirs, and 4 pump stations.

To help meet future demands, the District has recently completed several projects and has multiple projects in design, most notably its Pure Water Project, which will treat excess tertiary recycled water until it reaches drinking water standards.

Over the next twenty-five years, the District is predicted to meet all water user demands. The LVMWD water users are single and multi-family residential, commercial, and landscape users, as well as a mix of temporary users and supplemental water to the recycled water systems. For more details on LVMWD's water system, supply, and demand, see Chapters 3-6.

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 249 gpcd of water usage) with an actual 2020 usage of 227 gpcd. See Chapter 5 for more details.

It is the stated goal of LVMWD to deliver a reliable and high-quality water supply to its customers, even during dry periods. Based on conservative water supply and demand assumptions over the next twenty-five years, in combination with conservation of non-essential demand during certain dry years, LVMWD is projected to achieve its 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 LVMWD'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.

1.4 Demonstration of Consistency with the Delta Plan for Participants in Covered Actions

An urban water supplier that anticipates participating in or receiving water from a proposed covered action such as a multi-year water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Delta should provide information in their 2015 and 2020 Urban Water Management Plans (UWMPs) that can then be used in the covered action process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (WR P1). A detailed discussion can be found in Appendix J.

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 measurement, calculations used, coordination with other agencies, and outreach efforts.

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. LVMWD has prepared this UWMP as it directly provides water for municipal purposes to over 3,000 customers and supplies more than 3,000 AF of water annually.

LVMWD prepared and adopted UWMPs for the years 2005, 2010, and 2015. This UWMP serves as an update to the 2015 UWMP and was prepared as an individual UWMP, covering only the LVMWD service area shown in Figure *3-1* (more details on the LVMWD service area are provided in Chapter 3).

To assist LVMWD 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.

2.2.1 Public Water Systems

Public water systems (PWS) are systems that provide drinking water for human consumption and these systems are regulated by the State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW). The SWRCB, Division of Drinking Water, requires reporting on the PWS. Reporters file electronic Annual Reports to the Drinking Water Program (ARDWP) to the SWRCB, which include annual reports of water usage and other information. The information provided in the UWMP is consistent with the data reported in the ARDWP.

LVMWD is a public water supplier that meets the definition of an urban water supplier with 19,944 municipal water service connections (as of the end of fiscal year 2020) and a total 18,242 acre-feet (AF) of water supplied to customers in their water service area in calendar year 2020. See Table 2-1 for a summary of the Public Water System Data for LVMWD.

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 *
Add additional rows as needed			
1910225	LVMWD	20,004*	18,242
	TOTAL	20,004	18,242
**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES: *Number of potable municipal connections is taken from Fiscal Year 2020, whereas volume of water supplied is from Calendar Year 2020 per the current UWMP's standards			

2.3 Regional Planning

The 2020 UWMP for LVMWD has been prepared as an individual reporting plan that only covers the service area of LVMWD.

2.4 Individual or Regional Planning and Compliance

This document was prepared as an individual UWMP and addresses all the requirements of the CWC. Coordination of this UWMP with other agencies and constituents is described in Section 2.6. LVMWD 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** *if applicable* (select from drop down list)
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**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. LVMWD is a water retailer (as opposed to a water wholesaler).

2.5.1 Fiscal or Calendar Year

The 2020 UWMP for the LVMWD is prepared on a calendar year basis.

2.5.2 Reporting Complete 2020 Data

This 2020 UWMP includes complete water use and planning data for calendar year 2020.

2.5.3 Units of Measure

Volumes reported in this 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.

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☐	Supplier is a wholesaler
☑	Supplier is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP * (select from drop down)	
Unit	AF
**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*	

2.6 Coordination and Outreach

The UWMP Act requires that the water agency identify its coordination with appropriate nearby agencies. While preparing the 2020 UWMP, LVMWD coordinated its efforts with relevant agencies to ensure that the data and issues discussed in the UWMP are presented accurately. All agencies listed in Section 2.6 were sent a notice of preparation, copies of which are included in Appendix A.

LVMWD has actively encouraged community participation in its Urban Water Management Planning efforts. A notice of public hearing was published in the local newspaper on May 13, 2021 and May 20, 2021, notifying interested parties that the draft 2020 UWMP was under preparation. City and County agencies were notified on February 24, 2021, more than 60 days prior to the public hearing. Copies of the public hearing notifications are included in Appendix A.

The Draft 2020 UWMP was presented to the LVMWD Board of Directors on June 1, 2021 in a public hearing. The hearing provided an opportunity for LVMWD's customers, residents, and employees to learn and ask questions about the current and future water supply. The Final Draft 2020 UWMP was presented to the LVMWD Board of Directors and subsequently adopted by resolution of the Board on June 1, 2021. A copy of the adoption resolution is included in Appendix C, along with the agenda for the public hearing.

The adopted 2020 UWMP will be submitted to:

- The California Department of Water Resources
- The California State Library

In addition, the UWMP will be posted to the LVMWD website and will be made available during normal business hours at LVMWD, located at: 4232 Las Virgenes Road, Calabasas, CA 91302.

2.6.1 Wholesale and Retail Coordination

Among other coordination activities, LVMWD also informed the Metropolitan Water District of Southern California (MWD) of projected water use. See Table 2-4 for Water Supplier Information Exchange.

Submittal Table 2-4 Retail: Water Supplier Information Exchange
The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name
Metropolitan Water District of Southern California (MWD)

2.6.2 Coordination with Other Agencies and the Community

A written notice of this update to the LVMWD UWMP was provided to the following agencies:

- Calleguas Municipal Water District
- Triunfo Water and Sanitation District
- The Metropolitan Water District of Southern California

Table 2-A summarizes the coordination and public involvement actions of each agency listed above.

2.6.3 Notice to Cities and Counties

A written notice of this update to the LVMWD UWMP was provided to the following cities and counties:

- The City of Agoura Hills
- The City of Calabasas
- The City of Hidden Hills
- The City of Malibu
- The City of Simi Valley Waterworks District No. 8
- The City of Westlake Village
- The County of Los Angeles
- The County of Los Angeles Regional Planning Department
- The County of Ventura Public Works Department (Ventura County Waterworks District No. 1)

Table 2-A summarizes the coordination and public involvement actions of each city and county listed above.

Table 2-A: LVMWD Coordination and Notification for Plan Preparation

Entities	Coordination and Public Involvement Actions					
	Received Copy of Draft UWMP	Commented on Draft UWMP	Attended Public Meetings	Contacted for Assistance	Was Sent Notice of Intent to Adopt	Not Involved
Metropolitan Water District of Southern California	Yes			Yes		
Calleguas Municipal Water District	Yes			Yes		
City of Calabasas	Yes			Yes		
City of Hidden Hills	Yes			Yes		
City of Agoura Hills	Yes			Yes		
City of Westlake Village	Yes			Yes		
City of Malibu	Yes			Yes		
The City of Simi Valley Waterworks District No. 8	Yes			Yes		
Triunfo Sanitation District	Yes			Yes		
Los Angeles County	Yes			Yes		
Ventura County Waterworks District No. 1	Yes			Yes		

Chapter 3: System Description

3.1 General Description

The LVMWD service area comprises a 122-square mile area (74,640 acres) in western Los Angeles County, including the Los Angeles/Ventura County boundary to the northwest and the City of Los Angeles to the east. As shown in Figure 3-1, the service area includes the incorporated cities of Agoura Hills, Calabasas, Hidden Hills, and Westlake Village as well as unincorporated portions of Los Angeles County.

3.1.1 Water System Description

Located in the Santa Monica Mountains, Conejo Valley, and San Fernando Valley, LVMWD has very limited natural water resources and currently relies on four sources: imported potable water from MWD and Ventura County Waterworks District (VCWWD); recycled water from the Tapia Water Reclamation Facility (TWRF); and, to a lesser extent, groundwater from the Thousand Oaks Area Basin (which is only used to supplement the TWRF effluent), and surface runoff into the Las Virgenes Reservoir. LVMWD's potable water distribution system includes 25 storage tanks, 24 pump stations, and nearly 400 miles of pipelines. LVMWD maintains 22 main pressure zones due to the mountainous topography of its service area. For billing purposes, the pressure zones are categorized into five pumping zone levels based on hydraulic grade line (HGL). LVMWD's recycled water distribution system consists of 62 miles of pipelines, 3 storage tanks, 3 open reservoirs, and 4 pump stations.

3.1.2 Recently Completed Projects

Las Virgenes Municipal Water District is consistently working on new projects that will enhance their systems for their customers. There are several projects the District has recently completed, most notably:

- The Pure Water Demonstration Project
- The Mega Watt Solar Field
- Construction of aeration basin and blower equipment improvements at Tapia Water Reclamation Facility, reducing electricity use at the facility by an estimated 25 percent[1]
- 2,000 Weather Based Irrigation Controllers resulting in 141 acre-feet per year in reduced water use[1]
- The Las Virgenes (LV) Tap campaign to promote drinking of tap water in lieu of plastic bottled water[1]
- The AMR/AMI Smart Meter system[1]
- The Customer Interface System (CIS) software to version 4 and enhanced practices for billing and collections[1]
- The Torchwood Tank (2015), which added 5 million gallons of storage capacity

[1] LVMWD Adopted 2-Year Budget for Fiscal Years 2020-2022

- The Westlake Water Filtration Expansion and Westlake Pump Station Upgrade Project, which was completed in 2017 and increased the filtration capacity from 15 MGD to 18 MGD
- Rancho Las Virgenes Digester Cleaning and Repair
- Water Information Management Solution Software Implementation
- Rancho Amendment Bin and Conveyance Modification Project
- Potable Water Rehabilitation from FY 17-18
- Rehabilitation of 18" Recycled Water Pipe (Tapia/Mulholland Highway)
- Tapia Sluice Gate and Drive Replacement
- Saddletree Tank Improvements
- Centrate Equalization Tank
- Agoura Road Recycled Water Main Extension

3.1.3 Facilities in Construction

In addition to projects recently completed, below are a list of all facilities in construction at the time of the plan:

- Interconnection with CMWD
- Saddle Peak Tank Rehabilitation Project (potable water)
- Cordillera Tank Rehabilitation Project (recycled water)
- Mulholland Hwy Water Main over Triunfo Creek replacement project

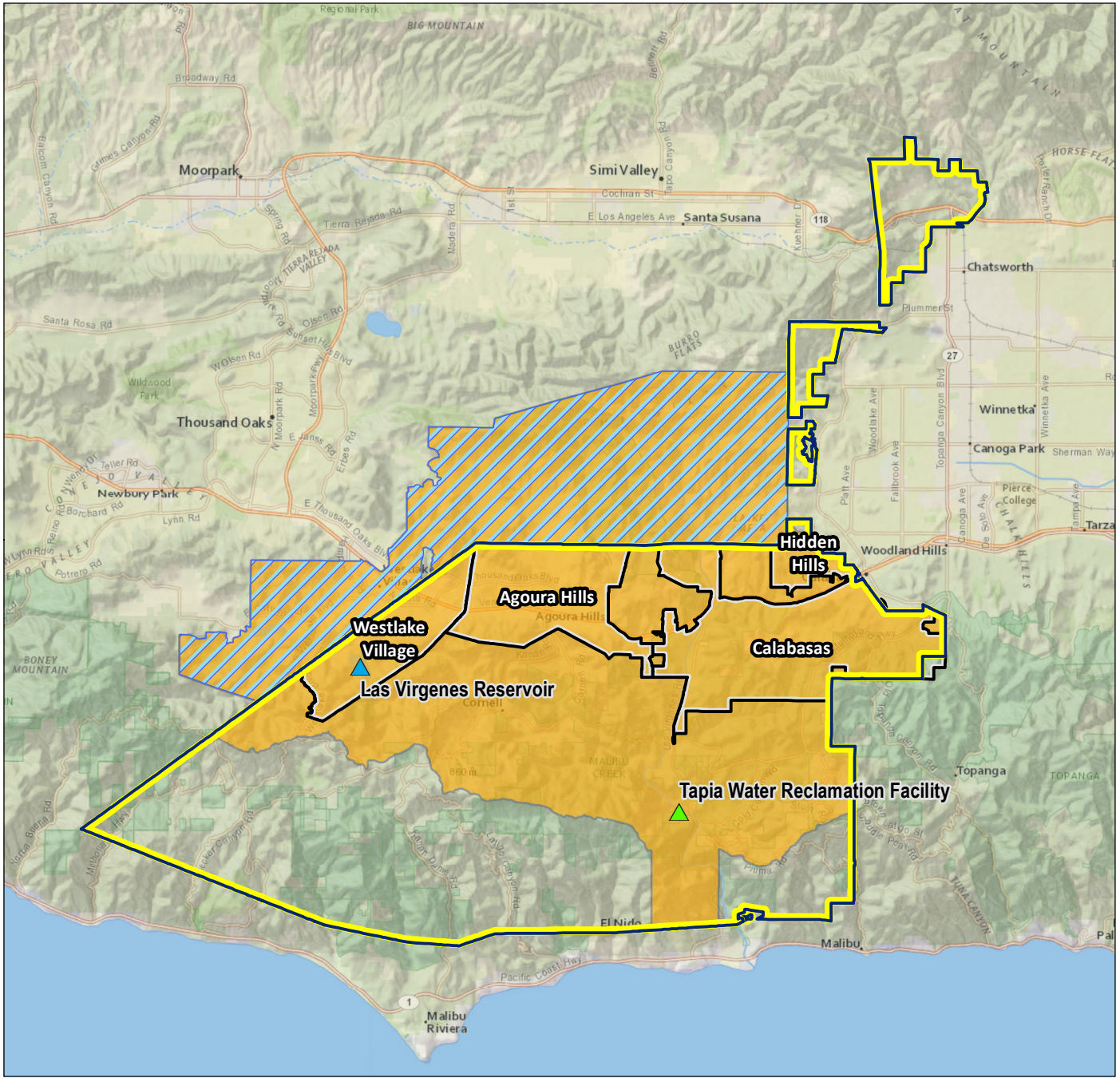
3.1.4 Projects in Design

In order to ensure the District continues to provide reliable, quality water to its customers, LVMWD has several projects planned for future developments, including the projects in design listed below:

- Pure Water Project to treat excess tertiary recycled water (water normally disposed of during months of low recycled water demand) through further advance water treatment methods to reach drinking water standards
- Interconnection with Wastewater District No. 29
- Twin Lakes Pumping Upgrades
- Cornell Pump Station Upgrades to improve operational flexibility for planned shutdowns and help maximize interconnection use
- Tapia Total Maximum Daily Load (TMDL) Compliance Project

3.2 Service Area Boundary Maps

LVMWD's District boundary is shown in Figure 3-1.



Stantec

LAS VIRGENES MUNICIPAL WATER DISTRICT

Tapia Water Reclamation Facility

- LVMWD Potable Water Service Area
- LVWMD Sewer Service Area
- Triunfo Water and Sanitation District
- City Limits

N

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
Los Angeles, 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: Las Virgenes Municipal Water District
Project: Las Virgenes Municipal Water District 2020 UWMP
Report: 2020 Urban Water Management Plan

Figure No.
3-1

Title
Las Virgenes Municipal Water District Service Areas

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3.3 Service Area Climate

3.3.1 Service Area Climate

The majority of LVMWD's service area climate is a semi-arid environment with mild winters, warm summers and moderate rainfall, consistent with coastal Southern California. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or dry hot Santa Ana winds. The standard monthly average evapotranspiration (ETo) rates, rainfall, and temperature are summarized in Table 3-A.

From April 2020 to March 2021, LVMWD's average monthly temperature ranges from about 43.5 to 85.4 degrees Fahrenheit (°F), with an annual average temperature of 64°F. ETo averages a total of 54.8 inches per year, while the average annual rainfall is 0.59 inches. Records for the twelve-month timeframe show that the monthly total precipitation has been as high as 2.4 inches and as low as 0.0 inches. Most of the rainfall typically occurs November through April.

Table 3-A: LVMWD - Climate Characteristics

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Avg. or Total
Avg. Max Temp. (°F)	68.7	69.0	67.1	70.8	76.2	77.0	80.9	85.1	85.4	81.8	72.7	70.4	75.4 (avg)
Avg. Min. Temp. (°F)	46.5	45.6	43.5	51.6	54.0	57.6	57.8	61.5	58.5	56.7	46.9	45.7	52.2 (avg)
Total Monthly Precipitation (in)	1.62	0.30	1.22	1.44	0.17	0.08	0.23	0	0	0	0.22	1.83	0.59 (avg)
Standard Monthly ETo (in)	2.98	3.51	4.36	4.47	6.41	5.86	6.88	6.27	4.79	3.83	2.73	2.70	54.8 (total)

Sources:
Santa Monica – Los Angeles Basin (Station 99), Camarillo – Central Coast Valley (Station 152), West hills – Los Angeles Basin (Station 219), Period of record 04/2020 – 03/2021
https://cimis.water.ca.gov/Default.aspx

3.4 Service Area Population and Demographics

3.4.1 Service Area Population

3.4.1.1 Development Projections

The 2014 Potable Water Master Plan contains development projections, considering land use and planning data, local agency Housing Element reports, and vacant housing information. That analysis was updated with most recent Housing Element reports in 2015, and no further data is publicly available at the time of this 2020 UWMP. Therefore, the table below shows a prorated estimate of projected additional population from 2020 until the 2040 buildout (for purposes of this 2020 UWMP and in contrast to the 2014 Master Plan, build-out is projected to occur by 2040).

In 2015, a total of 5,254 new dwelling units were anticipated by build-out, which estimated an additional population at 16,378. In 2020, the population is anticipated to grow by 12,542 by 2040. All agencies listed below were contacted and requested to provide all updated housing elements projections. At the time of

this 2020 UWMP, a response was received from the City of Calabasas with updated values. All other agency values are therefore prorated from the 2015 UMWP housing projections. These projections are summarized in Table 3-B.

Table 3-B: Housing and Population Projections from 2020 to 2040

Agency/Growth Description	Projected New Dwelling Units	Applicable Persons per Household (PPH)	Projected Additional Population
Agoura Hills [a][b]			
Agoura Village	293	3.345	980
N. Agoura Rd	73	3.345	244
Calabasas[c]			
West Village	180	2.71	488
Pet Kennel Site	60	2.71	163
Raznick Project	42	2.71	114
Cruzan Site	68	2.71	184
Mixed Use Site #1 (T.B.D.)	100	2.71	271
Mixed Use Site #2 (T.B.D.)	100	2.71	271
Repurposed Office Building (T.B.D.)	50	2.71	136
Infill Site (T. B. D.)	75	2.71	203
Other Vacant Residential Sites	70	2.71	190
Other Underutilized or Repurposed Site	110	2.71	298
Accessory Dwelling Units	122	2.0	244
Hidden Hills[a][d]			
Vacant Land	32	3.23	103
Affordable Housing	17	3.23	55
Second Units	2	3.23	6
Westlake Village[a] [e]			
Westlake Village Business	401	3.01	1,207
Additional Potential Residential	8	3.01	24
Additional Units[a] [f]			
Additional Population from Land Use Calculations (Unincorporated LA County)[b]	2,746	3.15	8,650

Additional Population from Vacant units[b]	936	3.03	2,836
Total Additional Population from New Development (Projected in 2020)	**5,485**	**n/a**	**16,667**
Total Population at Buildout [g]			**89,269**

Notes:

Source: Adapted from Potable Water Master Plan Update 2014 and 2015 Urban Water Management Plan

(a) PPH from 2014 Master Plan

(b) Based on assessment from Potable Water Master Plan Update 2014 (Kennedy/Jenks Consultants 2014b), Table 2-2 and Appendix O.

(c) City of Calabasas staff 2021

(d) City of Hidden Hills 2013-2021 Housing Element, 2014, confirmed by staff 2021

(e) City of Westlake Village 2013-2021 Housing Element, 2014; Table 4

(f) Based on assessment from Potable Water Master Plan Update 2014 (Kennedy/Jenks Consultants 2014b), Table 2-2

(g) Total population from development (2040) taking into account 2020 and additional population from new development.

3.4.1.2 Service Area Population

The population for LVMWD in 2020 is required to be calculated using the DWR online population tool, which uses a Geographic Information System (GIS) interface. By adding shape files for the LVMWD service area boundaries, population is derived using U.S. Census Bureau census tract data from historical census years and combined with persons per connection data.

Based on 2020 population data and additional population from new development, which is assumed to occur in 2040, future population was calculated for all intervening years through the end of the planning period. See Table 3-1 for the current and projected population. As can be seen, it is anticipated that LVMWD's service area population will increase to approximately 94,392 by 2045.

Submittal Table 3-1 Retail: Population - Current and Projected

Population Served	2020	2025	2030	2035	2040	2045*(opt)*
	72,602	76,769	81,175	85,833	89,269	94,392

NOTES: Population per DWR's population tool and local agencies housing elements.

3.4.2 Other Social, Economic, and Demographic Factors

Most of LVMWD's service population includes the incorporated cities of Agoura Hills, Calabasas, Hidden Hills, and Westlake Village as well as unincorporated portions of Los Angeles County. Current and future demographics, housing development, and land use in the cities will have significant impact on water use and system planning for LVMWD.

Though LWMWD has no disadvantaged census group, it is a common destination for disadvantaged community members who come to enjoy the visitor facilities. Safe, clean water is necessary to support these recreational experiences. LVMWD is committed to support programs that ensure resources are available to serve the region's disadvantaged communities.

3.5 Land Uses within Service Area

A large portion of the service area is undeveloped land characterized by the Santa Monica Mountains that range in elevation from a few feet above mean sea level (msl) to elevations exceeding 2,500 ft-msl. These open space areas comprise about 35 to 40 percent of the total service area and are mostly held in public ownership, such as state and national parks that will not require water service. Because of this, there is a limited amount of development planned for the future despite the significant amount of open land available.

There are also many undeveloped private parcels, particularly in the southern half of the service area. While these parcels are difficult to develop due to the topography of the land, they are accounted for in long-range water planning as these parcels could potentially receive water from LVMWD in the future[2]. The remaining portion is primarily made up of mixed residential and commercial land uses, while only a small portion of the service area is designated as agricultural land use types. The development pattern in recent years within the service area has been predominately commercial/office along the freeway corridor with some modest residential development and growth. LVMWD's water demands are primarily residential, as opposed to commercial, industrial, institutional, or agricultural, so LVMWD's customer base consists of many small users (i.e., single family residential homes) with associated landscape irrigation.

3.5.1 Service Area Geography

There are several unique aspects of LVMWD's geography which must be considered when discussing regional water infrastructure. Secondly, because of LVMWD's rural location within the Santa Monica Mountains, the distribution systems are large and must accommodate geographical challenges such as rapidly changing elevations. And while LVMWD benefits from a highly integrated recycled water system, effective potable distribution has been an ongoing challenge.

[2] Potable Water Master Plan Update 2014, Kennedy Jenks

Chapter 4: Water Use Characterization

This chapter describes and quantifies LVMWD's past, current, and future potable and non-potable water use projections through at least the year 2045 and are summarized in Table 4-3. Available records are used to project future water use based upon LVMWD's historical records and considering anticipated growth, new regulations, changing climate conditions, and trends in customer water use behaviors. Examining each water use sector, and then aggregating the information into a comprehensive projection of customer water use, becomes the foundation for integration with LVMWD's water supplies (Chapter 6) to assess long-term water system reliability (Chapter 7).

4.1 Non-Potable Versus Potable Water Use

LVMWD relies primarily on four sources for potable and non-potable water supplies including:

- Potable water imported from MWD and VCWWD
- Surface runoff into the Las Virgenes Reservoir
- Non-potable groundwater from the Thousand Oaks Area Basin
- Title 22 recycled water from the Tapia Water Reclamation Facility (TWRF)

Potable water is primarily supplied by wholesale purchases from MWD, currently only receiving SWP imported water. Prior to delivery to LVMWD, SWP water is treated at the Jensen Filtration Plant in Granada Hills, California. LVMWD has three MWD connections with a total capacity of 33,000 gpm (73 cfs). LVMWD also has access to two LADWP interconnections during MWD outages, enabled through an agreement between MWD and LADWP, with a total capacity of 10,350 gpm (Kittridge has a 9,000gpm capacity, and Germain has a 1,350-gpm capacity). LVMWD also imports potable water from two additional interconnections supplied by the City of Simi Valley/Ventura County Waterworks District 8 and Ventura County Waterworks District 17. In 2020, LVMWD supplied a total of 20,817 AF from imported potable water, about 78 percent of the total water supply including recycled water.

Another supply source for LVMWD is groundwater from two wells, Westlake Wells 1 and 2, extracted from the Thousand Oaks Area Groundwater Basin. Groundwater supplies are reported as non-potable water in this UWMP as these supplies are solely used to supplement the recycled water systems as the groundwater quality is poor. In 2020, LVMWD supplied about 299 AF of groundwater for non-potable use, about 1 percent of the total water supply.

In addition, treated wastewater from TWRF is used for non-potable purposes. TWRF provides primary, secondary, and tertiary treatment for LVMWD wastewater, Triunfo Water and Sanitation District (TWSD) wastewater, and any supplemental water including groundwater. TWRF, owned by the Joint Powers Authority (JPA) of LVMWD and TWSD, treats up to 10 mgd of wastewater for the recycled water distribution system. As of 2020, the treatment capacity of TWRF is about 16 mgd. TWRF average daily flows are relatively constant but do have some seasonal variation. In 2020, about 5,892 AF of wastewater was recycled in the LVMWD service area (despite a larger volume treated by TWRF) for non-potable use, about 22 percent of the total water supply. The remaining volume was disposed of.

4.2 Past, Current, and Projected Water Use by Sector

This section discusses past, current, and projected water use in five-year increments through 2045. The water uses shall be identified by sector and based upon information provided by LVMWD.

4.2.1 Water Use Sectors Listed in Water Code

To characterize LVMWD'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.

4.2.1.1 Single-Family Residential

A single-family dwelling unit. A lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling.

4.2.1.2 Multi-Family Residential

Multiple dwelling units contained within one building or several buildings within one complex.

4.2.1.3 Commercial

A water user that provides or distributes a product or service. Water Code 10608.12(d).

4.2.1.4 Landscape

Water connections supplying water solely for landscape irrigation. Such landscapes may be associated with multi-family, commercial, industrial, or institutional/governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation.

4.2.1.5 Distribution System Losses

Reporting of distribution system losses is required by the Water Code. 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.

Projected water losses, reported in five-year increments for 25 years, are included to effectively evaluate water service reliability. 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.

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

4.2.2.1 Other

Potable Supplement to Recycled Water systems

Potable supplement water includes any potable water used to supplement the recycled water systems.

Construction and Fire Services

Construction services include water uses such as dust suppression, washing equipment, and other uses associated with construction activities. Water used for fire services include line flushing, firefighting, hydrant testing, and others.

4.2.3 Past Water Use

While not part of the DWR submittal tables, Table 4-A below quantifies past water use for the LVMWD service area. Past water use accounting helps show LVMWD's water use trends; the effects of temporary use restrictions, and recovery from such temporary restrictions; effects of long-term demand management measures; and other pertinent water use patterns.

Table 4-A Retail: Use for Potable and Non-Potable Water - Historical

Use Type *(Add additional rows as needed)*	Additional Description *(as needed)*	Historical Water Use *Report To the Extent that Records are Available*			
		2016	2017	2018	2019
Single Family		13,124	14,241	14,929	13,124
Multi-Family		1,141	1,209	1,203	1,164
Commercial		1,633	1,591	1,869	1,689
Landscape		523	615	642	620
Other[(a)]	Potable Supplement to Recycled Water systems	1,040	1,068	458	510
Other	Construction and Fire Services	78	174	145	77
	TOTAL	**17,426**	**18,897**	**19,809**	**17,185**

NOTES: Does not include losses.

(a) Numbers derived from "Groundwater_ColumnG" spreadsheet provided by LVMWD staff

4.2.4 Distribution System Water Losses

Distribution system water losses are the physical potable water lost 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.).

Per CWC §10631(d)(3), distribution system water losses for each of the five years preceding the UWMP update must be reported in accordance with the rules adopted pursuant to CWC §10608.34. System water losses are reported in the Worksheets and Reporting Tables section, Table 4-4.

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 through 2045 are shown in Table 4-2.

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 82 percent of total water service demands in 2020.

Submittal Table 4-1 Retail: Demands for Potable - 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[(a)]		Drinking Water	14,718
Multi-Family[(a)]		Drinking Water	1,270
Commercial[(a)]		Drinking Water	1,483
Landscape[(a)]		Drinking Water	716
Losses[(b)]		Drinking Water	437
Other Potable[(c)(d)]	Potable Supplement to Recycled Water systems	Drinking Water	332
Other[(a)]	Temporary Uses, such as fire protection and construction	Drinking Water	55
		TOTAL	19,011

**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

(a) Numbers derived from "Potable Production" spreadsheet provided by LVMWD staff
(b) Losses based on 2019 losses. 2020 loss numbers were not available at the time of report preparation.
(c) Numbers derived from "Groundwater_ColumnG" spreadsheet provided by LVMWD staff
(d) Recycled water demands are discussed in Chapter 6.

4.2.6 Projected Water Use

In accordance with Water Code Section 10635(a), below (and in Chapter 7) includes an assessment of the reliability of LVMWD's water service to its customers during normal, dry, and multiple dry water years.

This water supply and demand assessment compares the total water supply sources available to LVMWD 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. See Chapter 7 for further details.

4.2.6.1 20-Year Planning Horizon

LVMWD's projected water use, in five-year increments, is shown below through 2045 (including projections for each of the water use sectors identified in Section 4.2.1). The 2020 Potable Water, Recycled Water, and Sanitation Rate Study Report (2020 Rate Study) projected potable water and recycled water demands for the study period of Fiscal Year (FY) 2020 to FY2025. The Rate Study, while acknowledging the District is not fully built out, does not assume additional new customers or account growth over the next five years. For the purposes of a rate study, this is a conservative assumption and allows the District to plan for a worst-case scenario regarding revenue and growth. For the purposes of the UWMP, incremental growth due to new connections has been incorporated into the future projections in order to conservatively plan for any additional water demand in the service area. Though these assumptions differ, the assumed growth for each study is specific to the intent of that study and providing a conservative projection for the future. In addition, the overall anticipated growth for this UWMP update is relatively small in comparison to the existing demands for the District and the differing growth assumptions between the two studies is not seen as significantly in conflict. The Rate Study also assumes cutbacks in demands starting in FY2023. Cutback percentages are shown below in Table 4-B.

Table 4-B: 2020 Rate Study Demand Project Cutbacks

	2020	2021	2022	2023	2024	2025
Potable Water Demand Assumptions	0.0%	0.2%	0.0%	-2.6%	-2.2%	-2.3%
Recycled Water Demand Assumptions	0.0%	0.0%	0.0%	-2.8%	-2.5%	-2.2%

For the purposes of the 2020 UWMP and data available at the time of preparation, the projected potable water and recycled water demands are shown in Tables 4-2 and 4-3. The projections for the year 2025 differ from those projected in the 2020 Rate Study due to the different reporting periods (fiscal year vs. calendar year) and assumption of a small percentage of growth until buildout in 2040 as shown in Section 3. The 2020 Rate Study evaluated billed water only and does not include other sources of potable or non-potable water. The estimated cutback percentages shown in Table 4-B were applied to the potable water demands for the period of 2020 to 2025. Cutbacks were anticipated to level off after 2025 for the purpose of evaluating the estimated demands and supply in Section 6 and 7.

Submittal Table 4-2 Retail: Use for Potable and Non-Potable Water - Projected

Use Type	Additional Description (as needed)	Projected Water Use* *Report To the Extent that Records are Available*				
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		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Single Family	(a)	14,542	15,377	16,259	17,192	18,179
Multi-Family	(a)	1,255	1,327	1,403	1,484	1,569
Commercial	(a)	1,465	1,549	1,638	1,732	1,832
Landscape	(a)	708	748	791	837	885
Losses	(a)	432	457	483	510	540
Other Potable	Potable Supplement to Recycled Water systems (b)	682	682	682	682	682
Other	Temporary Uses, such as fire protection and construction (c)	106	106	106	106	106
	TOTAL	19,190	20,246	21,363	22,544	23,792

**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:
(a) Assumes demand cutbacks per Table 4-B. No cutbacks are projected 2030 and beyond in the estimated demands.
(b) The Recycled Water Supplement values are derived from five-year averages of potable and non-potable water supplement, which are expected to continue at a steady amount through 2045 as no growth is expected of the recycled water system. See Section 6 for more details.
(c) Average from 2016-2020.

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 *From Tables 4-1R and 4-2 R*	19,011	19,190	20,246	21,363	22,544	23,792
Recycled Water Demand[1] *From Table 6-4*	5,560	3,995	3,995	3,995	3,995	3,995
Optional Deduction of Recycled Water Put Into Long-Term Storage[2]						
TOTAL WATER USE	24,571	23,185	24,241	25,358	26,539	27,787

[1]Recycled water demand fields will be blank until Table 6-4 is complete
*[2] Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier **may** deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3.*

NOTES:
Assumed 682 AF of recycled water is supplied by potable water for peak months when wastewater flows are lower than recycled water demands. This demand is included in the potable water demand projections for 2025.

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 Chapter 7.

4.2.6.3 Codes and Other Considerations Used in Projections

The water use projections described above take into consideration LVMWD land use plans (see Chapter 3). LVMWD has a land-use build out set for 2040, so water use is expected to remain constant from 2040 and beyond.

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

The DWR Planning Tool Use Worksheet are used to record current and projected water use as described in Section 4.2. 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. The tables relevant to customer water use are used throughout this report.

To date, LVMWD has not adopted a Water Loss Standard. See Table 4-4 for the last five years of water loss audit reporting of the LVMWD systems.

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]
01/2016 - 12/2016	1,233
01/2017 - 12/2017	48
01/2018 - 12/2018	545
01/2019 - 12/2019	437
01/2020 - 12/2020	-

[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: The reporting year type changed from Fiscal Year to Calendar Year at the end of 2016. Loss numbers are calculated by subtracting Authorized Consumption from Water Supplied to the delivery system and are shown in the AWWA worksheets. Final numbers for 2020 water loss will not be available until after the UWMP is finalized.

4.4 Water Use for Lower Income Households

The projected water use for lower income households is shown below. 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.

The LVMWD service area includes the incorporated cities of Agoura Hills, Calabasas, Hidden Hills, and Westlake Village as well as approximately 5 percent of unincorporated areas within the County of Los Angeles. As such, RHNA data assigned by SCAG to these cities and unincorporated areas shall be used for this UWMP. RHNA units of the respective cities and areas for the 2020 to 2045 forecast, based on income distribution, are summarized in Table 4-C.

Table 4-C: 2020-2045 RHNA Assigned Units of Cities within LVMWD[1]

Income Group	Number of Units						Percentage
	Agoura Hills	Calabasas	Hidden Hills	Westlake Village	Unincorporated LA County[2]	Total	
Extremely/ Very Low	127	132	17	58	1,279	1,612	30%
Low	72	71	8	29	683	863	16%
Moderate	55	70	9	32	708	874	16%
Above Moderate	64	81	6	23	1,822	1,996	37%
Total	318	354	40	142	4,492	5,346	100%

[1] From document "SCAG 6th Cycle Final RHNA Allocation Plan (pending HCD approval) 3/4/21"

[2.] Approximately 5 percent of unincorporated areas within Los Angeles County (LA County)

Extremely low-, very low-, and low-income households are often combined and referred to as lower-income households. The lower-income households total 2,475 units for the LVMWD service area. With an estimated 3.1 people per dwelling unit and a per capita water usage of 227 gpcd, if all 2,475 lower-income housing units are built by 2045 the water demand increase is estimated to be 1,950 AFY. This is accounted for in the prorated population estimates of Table 3-B. 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) *Drop down list (y/n)*	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc… utilized in demand projections are found.	Chapter 9
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES: See Section 4.2.6.1 for details on what is included in the Water Use Projections and why this table states no future water savings are included in projections.	

4.5 Climate Change Considerations

Climate change presents a challenge in water planning for water suppliers around the globe. For LVMWD, long-term supply is projected to meet demands even with climate change considerations incorporated. Water use is predicted to see a higher average value from temporary emergency uses to fight fires (currently projected at 106 AF through 2024, an average from 2016-2020 values when the District experienced extreme fires). Climate change considerations are shown in supply projections by means of available imported water predicted through MWD. Climate changes are expected to impact groundwater and other supply sources, but they are difficult to quantify and are accounted for in the conservative reporting of this UWMP.

MWD's water supply planning has almost one-hundred years of hydrological data regarding weather and water supply. This history has provided a foundation for forecasting frequency and severity of future droughts, as well as the frequency and abundance of above-normal rainfall. However, 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
- Rising sea levels resulting in the following:
    - Impacts to coastal groundwater basins due to seawater intrusion
    - Increased risk of damage from storms, high-tide events, and the erosion of levees
    - Potential pumping cutbacks on the SWP and Central Valley Project (CVP)

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

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.

In addition, two important legislative actions were passed in 2018 that require water agencies to implement additional conservation efforts. AB 1668 and SB 606 build on previous state efforts to make water conservation a way of life in California and create a new foundation for long-term improvements in water conservation and drought planning. These legislative actions will provide the long-term direction of state conservation efforts and will have important implications for the District as it implements conservation programs to achieve the state requirements[3].SB 606 and AB 1668 establish guidelines for efficient water use and a framework for the implementation and oversight of the new standards, which must be in place by 2022. In addition to these legislative actions, system water loss legislation under SB-555 also requires urban retail water providers to achieve water loss standards for minimizing system water loss (i.e. pipeline leaks). Collectively these bills are anticipated to strengthen the state's water resiliency in the face of future water shortages[4].

The previous 2015 UWMP measured the progress towards this goal by reporting 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: 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

For this LVMWD UWMP, Method 1 is used.

5.1 Guidance for Wholesale Suppliers

This section is not applicable for LVMWD's UWMP.

5.2 SBX7-7 Forms and Summary Table

Table 5-1 shows the average baselines and confirmed 2020 targets for LVMWD that were established in the 2010 UWMP.

[3] Comprehensive Water Conservation Plan for LVMWD for FY 2020-2022, LVMWD, 2021.

Submittal Table 5-1 Baselines and Targets Summary From SB X7-7 Verification Form
Retail Supplier or Regional Alliance Only

Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	*1999*	*2008*	*311*	*249*
5 Year	*2004*	*2008*	*322*	

**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 UWMP

5.3.1 Supplier Submitted 2015 UWMP, No Change to Service Area

The District's service area did not change, and the baseline target calculation (which used service area as a means to obtain the calculation) was included 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. Average baseline water use for the 10-15 year base period is 311 gpcd, and average for the 5 year period is 322 gpcd.

5.4 Methods for Calculating Population and Gross Water Use

5.4.1 Calculating Population

The DWR Population tool was used to determine the 2020 population for the LVMWD service area, which extracts U.S. Census data at the block level for boundaries submitted by the user. LVMWD submitted its service area boundary for the tool to use in 2015. For non-census years (or for years in which the U.S. census data is not yet available), the population tool uses Persons-per-Connection methodology.

After the 2020 population was established, the projected population was linearly increased until the buildout value in 2040.

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 in Appendix F.

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

In 2020, the District's per capita water use was 227 gpcd, which falls under the 2020 target of 249 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
Retail Supplier or Regional Alliance Only

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)*		
227	*SB X7-7 Table 9*	227	249	*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

A regional alliance is a group of water suppliers agreeing among themselves to plan, comply, and report urban water use target requirements of SBX7-7 as a region. The District is not participating in a regional alliance in the context of this UWMP.

Chapter 6: Water Supply Characterization

6.1 Water Supply Analysis Overview

LVMWD is located in the Santa Monica mountains and has very limited natural water resources based on the geographic location and topography. Currently, the District relies on four sources for water supply: imported potable water from MWD and Ventura County Waterworks District's (VCWWD No. 17), (VCWWD No. 8), and the City of Los Angeles, and recycled water from the Tapia Water Reclamation Facility (TWRF), groundwater from the Thousand Oaks Area Basin (which is only used to supplement the recycled water supplies), and surface runoff into the Las Virgenes Reservoir. The District is also investing in their advanced water treatment (AWT) system at TWRF through their Pure Water Project. This project involves using tertiary treated recycled wastewater and treating it through advance filtration methods to meet State drinking water standards for storage in the Las Virgenes Reservoir. LVMWD has developed these water resources to provide increased water reliability and efficient water use to help meet the water demand of the LVMWD service area into the future.

6.1.1 Specific Analysis Applicable to All Water Supply Sources

The District has two (2) separate water systems: one for potable water to serve potable retail customers and one for recycled water to serve irrigation customers. The two water systems are described in detail in Chapter 3. See Figure 6-1 for a schematic of water supplies to each system.

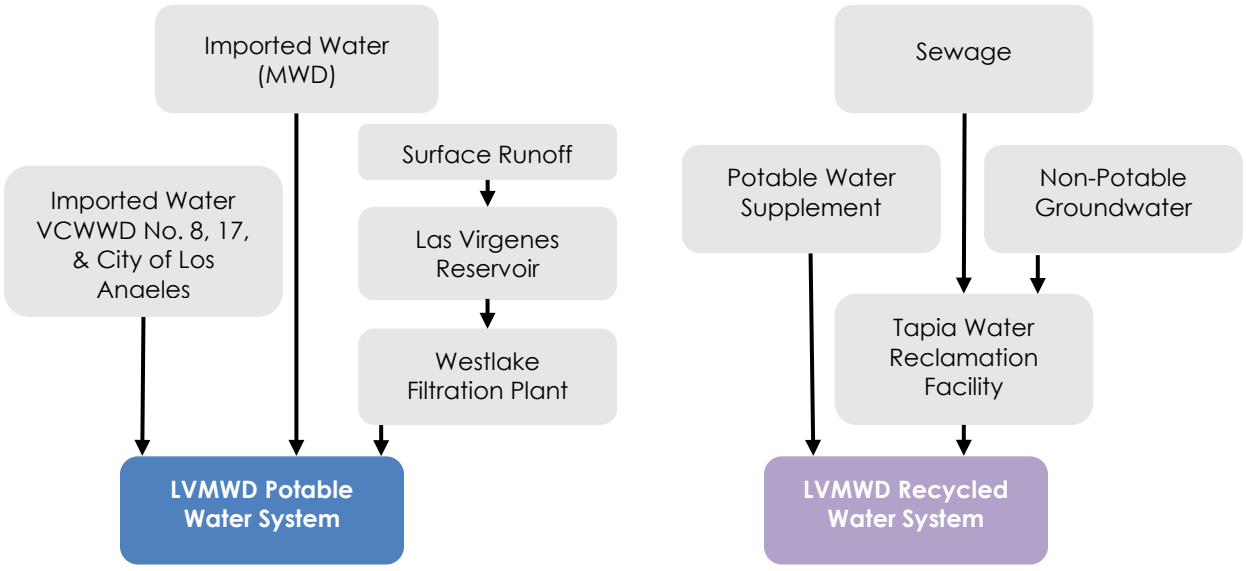


Figure 6-1 Schematic of LVMWD Water Supplies to Each System

Potable Water System: The largest source of supply for LVMWD's potable water system is imported water. In 2020, the District purchased potable water from MWD the City of Los Angeles, VCWWD No. 17, and VCWWD No. 8. Aside from surface water runoff into the Las Virgenes Reservoir, imported water accounted for all the supply to the potable water system. Supply from these sources for normal, single-dry, and fiver-year drought reflect the reliability of these sources as discussed in 7.2.

Imported potable water is stored in the Las Virgenes Reservoir. The water stored in the reservoir is treated to meet Title 22 California Code of Regulations; Division 4; Chapter 17 requirements at the Westlake Filtration Plant (WFP). In low demand seasons, LVMWD puts imported water into the reservoir, while in high demand seasons LVMWD draws upon the reservoir to meet the increased demands.

The District is also investing in their Pure Water Project in which tertiary treated wastewater will go through advance water treatment methods to reach drinking water standards. This advanced treated water will be blended and stored with the water in the Las Virgenes Reservoir and treated further at the WFP prior to distribution in the potable water system.

Recycled Water System: The Tapia Water Reclamation Facility (TWRF) treats, on average, 8 mgd of sewage and brings virtually all of the secondary effluent to tertiary treated levels meeting Title 22 Requirements. In 2020, 5,892 AF of recycled water was delivered to LVMWDs recycled water system for beneficial reuse. Wastewater flows to the TWRF are historically consistent through normal and dry years so supply during normal, single-dry, and five-year drought are expected to remain constant.

Groundwater from LVMWD's two (2) groundwater production wells provide supplemental water to the TWRF to aid in recycled water supplies as needed. Groundwater supply is not directly shown in Table 6-8 but is accounted for in the total recycled water volume.

Projected supply for the potable water and recycled water systems for 2025 to 2045 is shown in Table 6-9.

6.1.2 Other Characterization Considerations

See Figure *3-1* for a map of water facilities and LVMWD service area.

6.1.3 Optional Planning Tool

The Optional Planning Tool was not used in this UWMP.

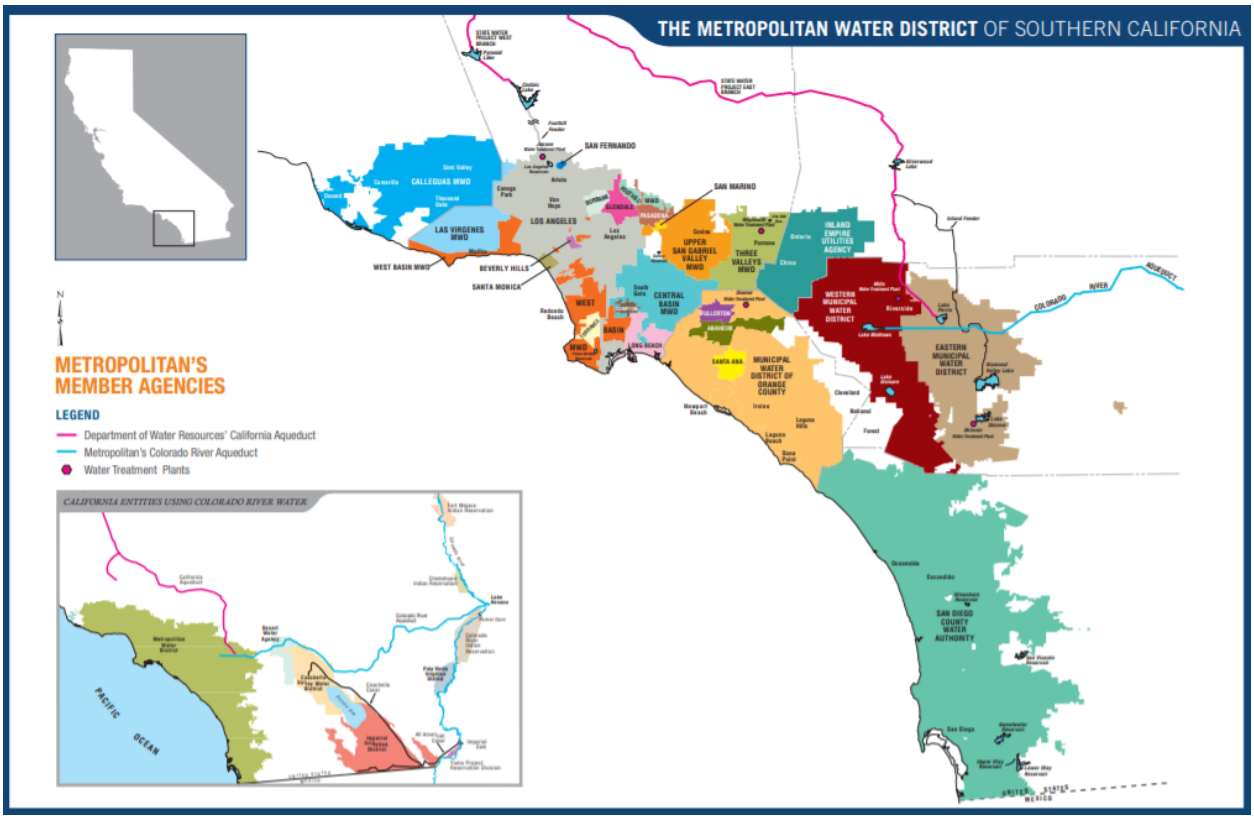
6.2 Narrative Sections for Water Supply Characterizations

6.2.1 Purchased or Imported Water

LVMWD's potable water is provided through multiple agencies, with the largest imported supply through wholesale purchases from MWD. MWD imports water from northern California through the SWP and the Colorado River to meet the needs of 26 member agencies across six Southern California counties. LVMWD is one of MWD's member agencies. Currently, the configuration of MWD's distribution system allows LVMWD to receive SWP water originating from northern California through the Sacramento-San Joaquin Bay-Delta. The SWP water is treated at Jensen Filtration Plant in Granada Hills prior to delivery to LVMWD. LVMWD's historical and current SWP deliveries from MWD are shown in Table 6-C.

6.2.1.1 Metropolitan Water District of Southern California (MWD)

MWD is a wholesale water agency formed in 1928 and is comprised of 26 member cities and water agencies as shown in Table 6-A. As a wholesaler, MWD has no retail customers but serves customers through member cities and agencies which account for approximately 19 million people in six Southern California counties. MWD's service area is shown in Figure 6-2.



Source: http://www.mwdh2o.com/PDF_NewsRoom/6.4.2_Maps_MemberAgencies.pdf

Figure 6-2: MWD Service Area

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	**LVMWD**
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	

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 located on the Colorado River along the California-Arizona boarder is approximately 242 miles from Lake Mathews. Most of this water is conveyed to member agencies south and east of LVMWD.

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 acre-feet of water annually. The SWP provides imported water to MWD's service area making up 25 to 50 percentage of MWD's supply. In accordance with its contract, MWD has a Table A allocation of 1,911,500 acre-feet per year. 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 LVMWD via three connections to the MWD's system. Based on the LVMWD's *Potable Water Master Plan Update*

2014, LVMWD's total instantaneous imported water supply capacity is 33,000 gallons per minute (gpm), or 73 cubic feet per second (cfs), as shown in Table 6-B: Capacities of MWD Connection.

Table 6-B: Capacities of MWD Connection

Connection	MWD Pipeline Designation	Current Capacity (gpm/AFY)	Planned Capacity (gpm/AFY)
LV1	West Valley Feeder No. 1	11,000 (gpm) / 17,750 (AFY)	11,000 (gpm) / 17,750 (AFY)
LV2	Calabasas Feeder	20,000 (gpm) / 34,000 (AFY)	34,000 (gpm) / 54,880 (AFY)
LV3	West Valley Feeder No. 2	2,000 (gpm) / 3,228 (AFY)	3,100 (gpm) / 5,004 (AFY)
Total		**33,000 (gpm) / 53,258 (AFY)**	**48,000 (gpm) / 77,634 (AFY)**

*Source: 2007 Integrated Systems Master Plan (Boyle 2007a), as presented in LVMWD's 2010 UWMP Table 3.4. *The capacity of the turnouts is limited by agreement.*

Reliability of MWD Supplies

MWD has invested significantly in the development of a diverse resource mix to ensure continued reliability of its supplies. In addition, MWD has undertaken numerous planning initiatives, including an update to the Integrated Water Resources Plan (IRP 2015), the Water Surplus and Drought Management Plan, the Water Supply Allocation Plan, and the Long-Term Conservation Plan. Additional details on these reports are found in Chapter 7:. These efforts enable MWD to meet the water supply needs of its member agencies under various water year types.

Based on the 2020 Final Draft MWD UWMP and as discussed in section 7.2, it is anticipated that supplies will reliably meet water demands through 2040 during average, single dry-, and five-year drought. MWD estimates a surplus of supplies over demands for all water year types for their customer base. Based on this reliability, MWD can supply the full water demands for LVMWD for all year types. Hence, for purposes of projecting available imported MWD supplies for this 2020 UWMP, these water supplies have been set equal to total LVMWD demands less other imported water supplies and are shown in Table 6-9.

6.2.1.2 Imported Supplies from Other Agencies

In addition to the imported water connections with MWD, the District also purchases a small amount of treated imported water from the City of Simi Valley/Ventura County Waterworks District No. 8, Ventura County Waterworks District No. 17 and a connection to the City of Los Angeles Department of Water and Power. During times of MWD system outages, LVMWD periodically purchases water supplied by the City of Los Angeles Department Water and Power through two different turnouts. One is located at Kittridge Street and the other at Germain Street with maximum capacities of 9,000 gpm and 1,350 gpm, respectively. Historically, these supplies from other agencies account for less than one percent of LVMWD's potable water supply. Interconnections with these agencies provide potable water generally to

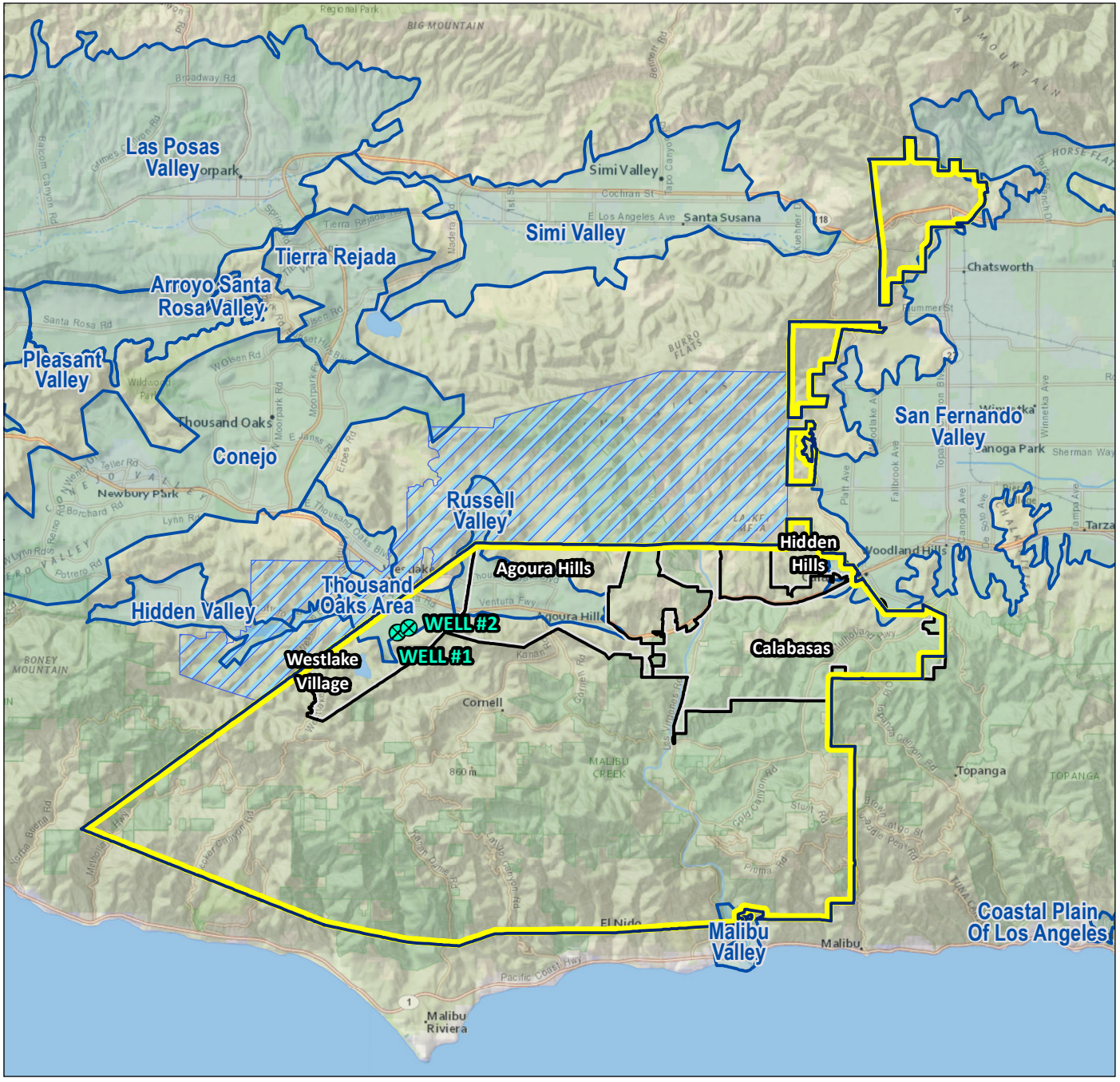
two small areas in the hills west of the San Fernando Valley, Woolsey Canyon and Box Canyon which include the cities of West Hills and Chatsworth. These areas are geographically isolated, and currently not connected to the rest of the LVMWD distribution system. A summary of historical purchases from 2016 to 2020 for imported sources are shown in Table 6-C.

Table 6-C: LVMWD Historical Supply for 2016 to 2020

	Historical Imported Water Supply (AFY)					
Import Water Supplier	**2016**	**2017**	**2018**	**2019**	**2020**	**Average**
MWD	18,151	18,313	20,368	17,437	20,392	18,932
VCWWD No. 8	17	19	41	23	39	139
VCWWD No. 17	91	94	97	93	102	95
City of Los Angeles	1,653	839	0	446	284	644
Total	**19,912**	**19,265**	**20,506**	**17,999**	**20,817**	**19,700**

6.2.2 Groundwater

LVMWD service area overlies portions of multiple groundwater basins including the Thousand Oaks Area, Russel Valley, Malibu Valley, and San Fernando Valley Basins as shown in Figure 6-3. Currently, LVMWD only operates two (2) groundwater production wells in the Thousand Oaks Area Basin: the Westlake Well 1 and Westlake Well 2. These groundwater wells are located along Lindero Canyon Road, South of Highway 101. The combined capacity of these two wells is approximately 1.15 mgd, or 800 gpm. Groundwater from these wells provide a local source of water supplies solely used to augment recycled water supplies due to high levels of iron and manganese found in the groundwater. These supplies are accounted for under recycled water and are not explicitly listed in total LVMWD supply tables. Before the groundwater is used to supplement recycled water, it is treated via discharge into the sewer collection system when additional recycled water is needed. After mixing within the wastewater collection system, this water is treated at the Tapia Water Reclamation Facility (TWRF), at which point it is used to supplement the recycled water system.



Stantec

LAS VIRGENES MUNICIPAL WATER DISTRICT

- Westlake Groundwater Well
- Groundwater Basin
- LVMWD Potable Water Service Area
- Triunfo Water and Sanitation District
- City Limits

N

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
Los Angeles, 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: Las Virgenes Municipal Water District
Project: Las Virgenes Municipal Water District 2020 UWMP
Report: 2020 Urban Water Management Plan

Figure No.
6-3

Title
Las Virgenes Municipal Water District Service Areas with Groundwater Basins

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6.2.2.1 Basin Description

The Thousand Oaks Area Groundwater Basin (Basin), DWR Basin No. 4-019, shown on Figure 6-3 , is a relatively small alluvial basin straddling Ventura and Los Angeles Counties in the Russel Valley area. The basin is bounded by semi-permeable rocks of the Santa Monica Mountains. Triunfo Creek and Potrero Valley Creek drain the areas of Russel valley and Triunfo Canyon into Malibu Creek. The Basin underlies a surface area of about 3,100 acres or five square miles. Groundwater in the Basin is primarily found in Quaternary age alluvium, with some water found in sandstone beds and fractures. Recharge to the Basin occurs by percolation of rainfall and stream flow from Conejo Creek. The Basin is estimated to have a total storage capacity of 130,000 AF[4]. According to California's Groundwater Bulletin 118, groundwater quality is impacted by magnesium-calcium- and sodium-sulfate. TDS content averages about 1,400 mg/L but can be as high as 2,300 mg/L in some areas. In addition to high TDS levels in the Basin, water quality is also impaired by high alkalinity and hardness[4]. Due to poor water quality, groundwater from the Thousand Oaks Area Basin is only used to supplement the recycled water supply by pumping and blending with the wastewater collection system which is conveyed to TWRF for treatment.

6.2.2.2 Multiple Groundwater Basins

LVMWD does not utilize multiple basins within its service area.

6.2.2.3 Other Considerations

Groundwater Management

The Thousand Oaks Area Basin is not adjudicated and DWR has not identified it to be in an overdraft condition based on Bulletin 118. There are no defined legal pumping rights for LVMWD within the basin. LVMWD has not adopted a groundwater management plan, and a regional groundwater management plan does not currently exist for the Basin. The Thousand Oaks Area Groundwater Basin has been rated a "very low" priority basin by DWR and as such is not subject to the Sustainable Groundwater Management Act of 2014.

6.2.2.4 Past Five Years

As groundwater supplies are only used to supplement LVMWD's recycled water system during the peak demand season, annual groundwater pumping can vary significantly. Figure 6-4 shows annual groundwater pumping over 2020.

[4] California Department of Water Resources (DWR). 2004. California's Groundwater Bulletin 118 – Thousand Oaks Area Groundwater Basin. Updated February 2004.: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/4_019_ThousandOaksArea.pdf

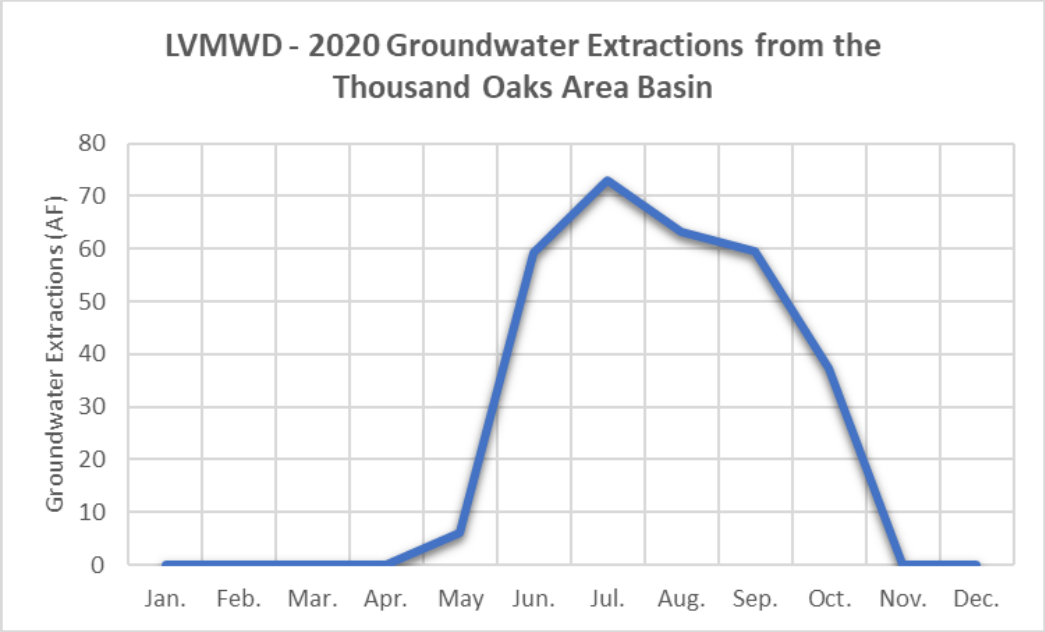


Figure 6-4: LVMWD Groundwater Extractions 2020

The amount of groundwater pumped each year from the Basin via the Westlake Wells over the last five years is presented in Table 6-1. The average volume extracted over this period was 310 AFY.

Submittal Table 6-1 Retail: Groundwater Volume Pumped						
☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
☐	All or part of the groundwater described below is desalinated.					
Groundwater Type	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
Alluvial Basin	Thousand Oaks Area Basin	291	378	358	228	299
	TOTAL	291	378	358	228	299
**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES:						

Based on the current conditions of the Thousand Oaks Area Basin, the low-priority rating by DWR, and historically low levels of pumping by LVMWD, groundwater supplies are anticipated to be reliably

available throughout the planning period of this UWMP. Projections of groundwater to be pumped from the Basin are presented in Table 6-D. These projections assume that groundwater will be required to supplement wastewater flows for production of recycled water for two months out of each year based on average historical pumping.

Table 6-D: Projected Groundwater Supply

Location or Basin Name	2025	2030	2035	2040	2045
Thousand Oaks Area Basin	310	310	310	310	310
TOTAL	310	310	310	310	310

NOTES: Groundwater pumping projections assumes the average over the last five years will remain constant to supplement recycled water supplies.

6.2.3 Surface Water

LVMWD owns and operates the Las Virgenes Reservoir, located in the hills south of Westlake Village. The total capacity is approximately 9,500 acre-feet. The reservoir was created to assure reliable drinking water delivery to LVMWD customers during peak seasonal demand.

This reservoir is filled with imported water and is withdrawn and replenished as needed. In low demand seasons LVMWD puts water into the reservoir, while in high demand seasons LVMWD draws upon the reservoir to meet the increased demands.

The reservoir is also a “backup” during scheduled shutdowns for maintenance, in times of drought, or in the event of earthquakes and other emergencies. Las Virgenes Reservoir played an important role after the 1994 Northridge Earthquake, when service from MWD was interrupted. During interruption, water from the reservoir was distributed to customers in LVMWD’s service area.

In addition to serving as a seasonal storage facility, the reservoir also provides emergency storage capacity that can be used during imported water outages. Although LVMWD also has an intertie to the LADWP system used during scheduled MWD outages, it cannot supply the total demand of LVMWD. If LADWP and MWD were unable to deliver water to the District, the Las Virgenes Reservoir would be the only source of supply that LVMWD could count on.

Before water is pumped into the distributions system, the reservoir water is treated at the Westlake Filtration Plant (WFP) to meet State Title 22; Division 4; Chapter 17 and Division of Drinking Water requirements. The WFP can deliver approximately 18 million gallons per day (mgd) of treated drinking water and typically operates during periods of peak demand in the summer. Water is filtered using diatomaceous earth (or DE). The water then goes through primary disinfection, using sodium hypochlorite. Prior to distribution, ammonia is added to produce chloramines as a secondary disinfectant to maintain water quality as it moves through pipes to consumers. During the Woolsey Fire in November 2018, the WFP and surrounding property were damaged. Since then, with the effort of LVMWD staff,

insurance, and FEMA agents, the facilities and surrounding areas have been restored to include Water Wise and Eco-friendly landscaping.

The total volume of Las Virgenes reservoir typically fluctuates by several hundred to more than 1,000 AF each year. Since its creation, the reservoir has remained at a volume of approximately 7,300 AF, but occasionally drops below 4,000 AF during dry months, and reaches over 9,000 AF when recharge water is purchased from MWD. While the reservoir's watershed area does not supply a significant source of water in most years, it is estimated that sufficient runoff is typically produced to offset evaporative losses. Based on an assumed watershed area of 550 acres, the watershed is estimated to receive about 770 AF of water annually, whereby average evaporation losses are estimated to be approximately 700 AFY. Due to the uncertainties of runoff volumes and minimal contribution to overall water supplies, this runoff cannot be reliably accounted for in LVMWD supplies and is not included in Table 6-9.

6.2.4 Stormwater

Stormwater is not used for supply to LVMWD's system.

6.2.5 Wastewater and Recycled Water

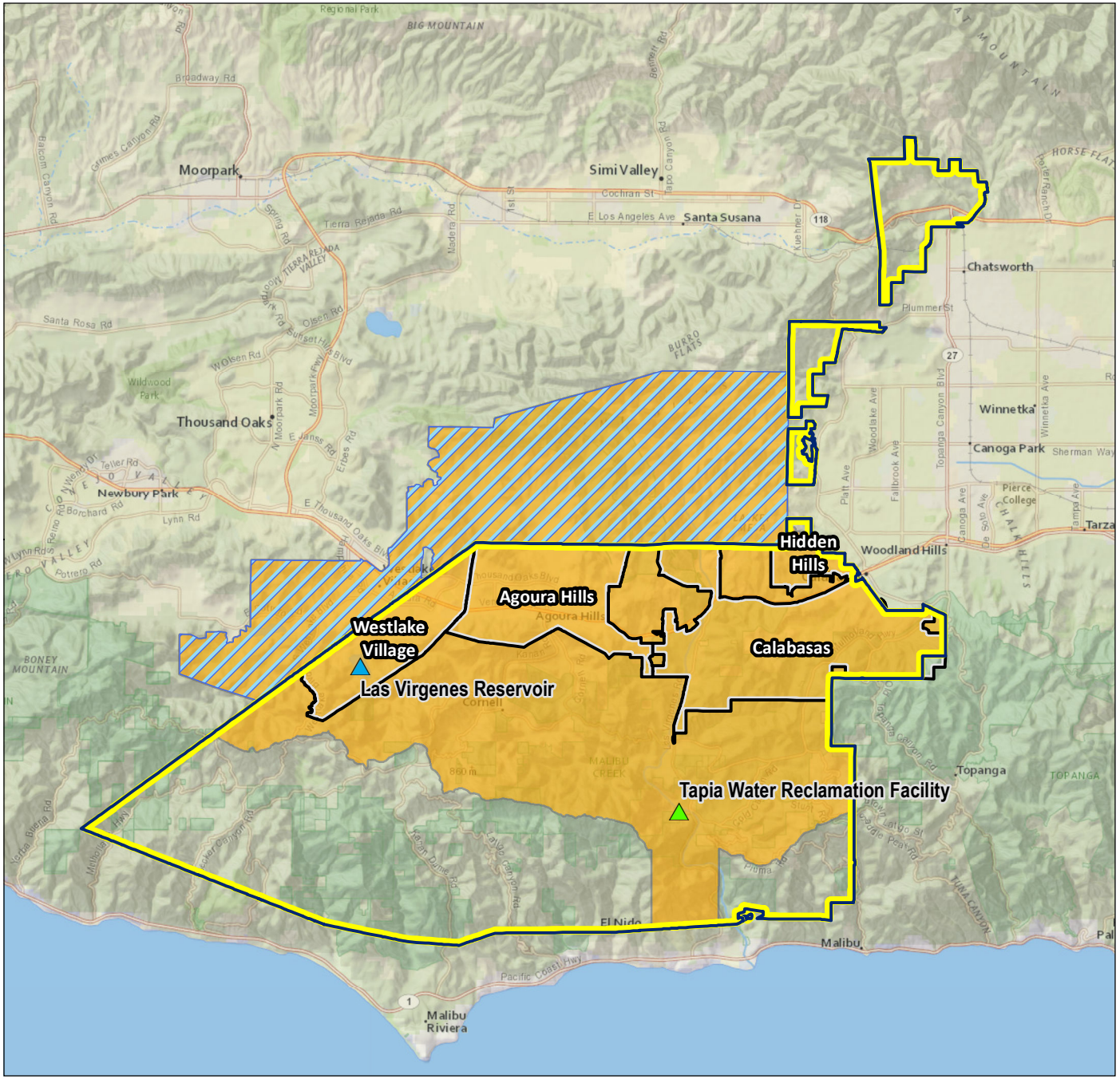
6.2.5.1 Recycled Water Coordination

Wastewater flows in the area are treated to secondary and tertiary levels at the TWRF. LVMWD has aggressively pursued the development of a recycled water system and optimizations for reuse in its service area. The District requires all non-residential landscaping located along the District's recycled water distribution main lines to be designed or converted to utilize recycled water for landscape irrigation. Currently, LVMWD serves recycled water to 661[5, pg. 6.19] dedicated recycled water accounts within their service area. Recycled water master planning efforts began in the 1980s with concepts for a system to serve the region. Master Plans for the existing recycled water system were prepared in 1985, 1988, 1999, 2007, and most recently updated in 2014. The existing recycled water system is jointly owned and operated by LVMWD, Trunfio Water and Sanitation District (TWSD), and Calleguas Municipal Water District (CMWD). This system currently serves customers ranging from Calabasas in the east to Thousand Oaks in the west.

6.2.5.2 Wastewater Collection, Treatment, and Disposal

Wastewater Collection and Treatment

TWRF was initially constructed in 1965 with an initial capacity of 0.5 mgd. The plant is located on Malibu Canyon Road at the southern edge of LVMWD's wastewater service area, as shown in Figure 6-5 and provides primary, secondary, and tertiary treatment for wastewater contributed by both LVMWD and TWSD from their respective service areas and groundwater from the Westlake Wells as needed.



Stantec

LAS VIRGENES MUNICIPAL WATER DISTRICT

Tapia Water Reclamation Facility

- LVMWD Potable Water Service Area
- LVWMD Sewer Service Area
- Triunfo Water and Sanitation District
- City Limits

N

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
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IR Review by ABC on 2012-12-01

Client/Project 184031382 REVA
Client: Las Virgenes Municipal Water District
Project: Las Virgenes Municipal Water District 2020 UWMP
Report: 2020 Urban Water Management Plan

Figure No.
6-5

Title
Las Virgenes Municipal Water District Service Areas

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The current design treatment capacity of TWRF is 16 mgd (17,922 AFY). However, due to permit limitations on nutrients, the current treatment capacity is approximately 12 mgd (13,442 AFY). Historically, annual wastewater flows to the TWRF has averaged 8 mgd[2, pg. 3.8] (8,960) AFY. In 2020, the average daily flows to TWRF were consistent throughout the year but did show slight seasonal variation as shown in Figure 6-6. During storm events the daily flows into the TWRF can double due to inflow and infiltration into the sewer mains. In 2020, wastewater flows to the plant totaled approximately 7.8 mgd (8,742 AFY) with 1.1 mgd (1,176 AFY) of re-treated effluent, 4.3 mgd (4,779 AFY) from customers in LVMWD service area, and 2.2 mgd (2,488 AFY) from TWDS's service area. Approximately 0.27mgd (299 AFY) of groundwater was introduced into the wastewater system from LVMWD's two groundwater wells in 2020 to supplement recycled water during the summer months. In 2020, the ratio of LVMWD wastewater to TWSD wastewater was approximately 66 to 34 percent with historical average around 60 to 40 percent. Total wastewater collected is shown in Table 6-3.

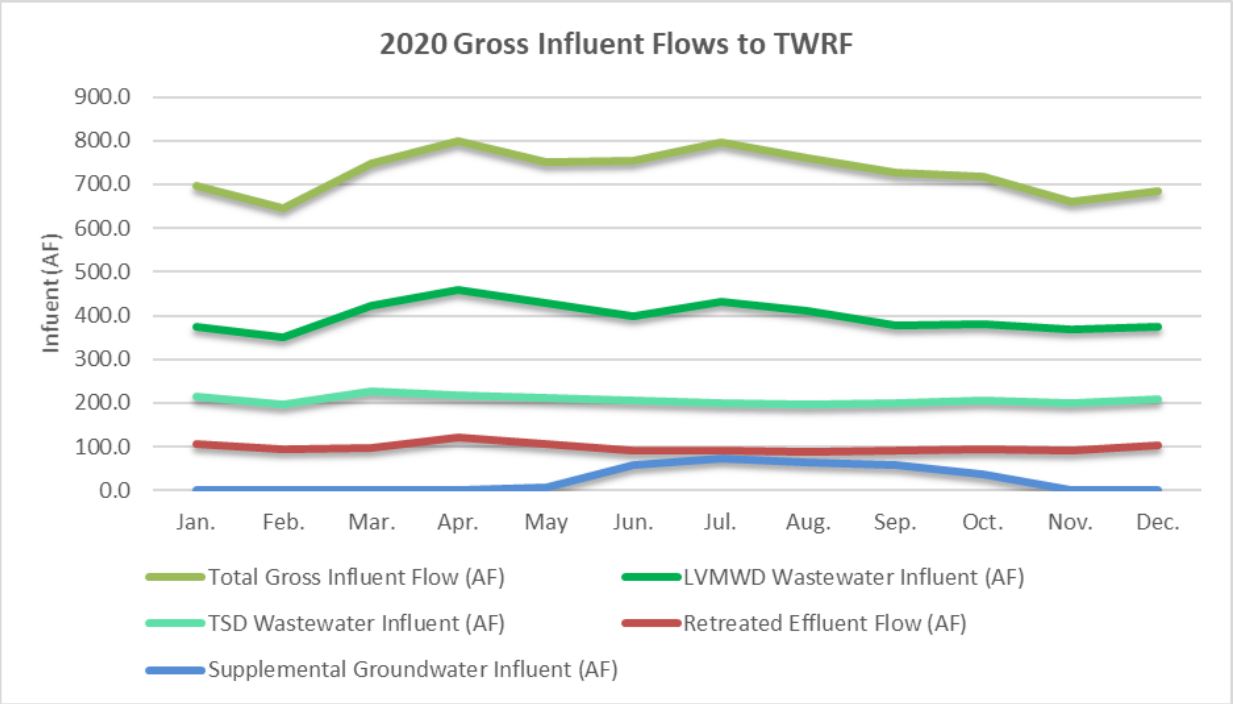

Figure 6-6: 2020 Gross Wastewater Influent Flows to TWRF

Disposal

The supply of recycled water is relatively constant because wastewater flows are steady throughout the year. On the other hand, demands on the recycled water system vary on a seasonal basis. Demands during summer peaks can be several times higher than typical spring and fall demands. See Figure 6-7 for the seasonal variation of recycled water demands. Currently, recycled water demand exceeds supply during summer months and is much lower than available supply during winter months. Because of this, a portion of the supply is required to be disposed of in the winter months.

Discharges from the TWRF are regulated under an NPDES permit (Order No. R4-2005-0074) issued by the Los Angeles Regional Water Quality Control Board.

Excess treated wastewater effluent from TWRF is discharged to two local waterways. Primarily, during the months of November to April, excess treated effluent is discharged to Malibu Creek. The NPDES permit generally prohibits discharging to Malibu Creek from April 15 to November 15, but when the creek flow drops below 2.5 cfs during this period, LVMWD is required to release recycled water from TWRF to provide water pools (habitat) for the endangered steelhead trout. Beyond what can be discharged to Malibu Creek, the excess is discharged to the Los Angeles River, via the Arroyo Calabasas, which requires pumping over the Calabasas grade.

Additional disposal through Rancho Farm Irrigation via "spray fields" is an option when disposal to either creek is not an option based on regulations.

Recycled water

During periods of peak recycled water demands, supply of treated effluent is not sufficient to meet recycled water demands. Beyond recycled water storage, LVMWD supplements its recycled water with two sources: supplemental water from two (2) groundwater production wells and potable water. As mentioned in Section 6.2.2 groundwater is conveyed to the TWRF via the sewer system to be treated and distributed as recycled water. On average, groundwater from the wells account for 310 AFY. See Table 6-1 for groundwater production over the past five years. In 2020, the District extracted approximately 299 AF of groundwater to supplement recycled water.

In 2020, supplies to the recycled water system totaled 5,892 AFY with 4,623 AFY purchased by customers within LVMWD's service area. This difference in supply versus purchased recycled water is due to internal use, losses, and other non-billed uses. Historical demands have significantly exceeded recycled water availability in the summer months even with the utilization of supplemental groundwater water. As a result, potable water is also needed to supplement the recycled water supply to meet irrigation demands. Since 2016, the amount of supplemental imported water has averaged approximately 682 AFY. In 2020, 332 AF of potable water was added to the recycled water system to meet high recycled water demands during the summer months. See Figure 6-7 for seasonal demand variation and potable water supplement for 2020. Supplementing with potable water is possible from three potable storage reservoirs, listed as follows:

Table 6-E: Supplemental Potable Water Capacities to the Recycled Water System

Reservoir	Capacity (gpm / AFY)
Cordillera Tank	1,200 gpm / 1,937 AFY
Reservoir No. 2	2,100 gpm / 3,390 AFY
Morrison tank	1,300 gpm / 2,098 AFY
Total	**4,600 gpm / 7,425 AFY**

Supplemental water sources to the recycled water system and respective volumes in 2020 are shown in Table 6-F.

Table 6-F: 2020 Supplemental Water Volumes	
Source	**Volume (AF)**
Groundwater	299
Potable Water	332
Total	**631**

Wastewater collected within LVMWD's service area in 2020 is shown in Table 6-2.

Water Supply Characterization

June 1, 2021

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020						
☐	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 *(optional)*					
100	Percentage of 2020 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	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?	Is WWTP Operation Contracted to a Third Party? *(optional)*
Add additional rows as needed						
JPA (LVMWD, TWSD)	Metered	4,779*	JPA (LVMWD, TWSD)	Tapia Water Reclamation Facility	Yes	No
Total Wastewater Collected from Service Area in 2020:		4,779				
NOTES: *Volume of wastewater collected is for LVMWD Service Area only and does include inflows from TWSD						

Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020

	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	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2020 volumes [1]				
						Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area [3]	Recycled Outside of Service Area	Instream Flow Permit Requirement
Tapia Water Reclamation Facility	Malibu Creek (001)	Monte Nido Area	River or creek outfall	Yes	Tertiary	8,742	2,065	5,892	298	0
Tapia Water Reclamation Facility	Arroyo Calabasas Creek (005)	Los Angeles River	River or creek outfall	Yes	Tertiary	0*	149	0*	0*	0
					Total	8,742	2,214	5,892	298	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: Values shown as 0* are counted in the row above.

6.2.5.3 Recycled Water System Description

The system begins at the TWRF, which is owned by the Joint Powers Authority (JPA) of LVMWD and TWSD. On average 9.5 million gallons per day (29.2 AFY) of wastewater is treated to a tertiary level allowing it to be distributed for non-potable recycled water uses. Recycled water uses are mainly landscape irrigation and golf course irrigation. The JPA also owns and operates a complex distribution system, consisting of pipelines, pump stations, tanks and reservoirs, and associated appurtenances to deliver the recycled water to areas of Los Angeles and Ventura Counties (Kennedy/Jenks Consultants/HDR 2014).

6.2.5.4 Potential, Current, and Projected Recycled Water Uses

As of 2020, recycled water supplies accounted for approximately 22 percent of the total supply of the potable and recycled water systems. In summer and fall, all wastewater produced at TWRF is effectively recycled to meet the seasonal high demands. See Figure 6-7 for seasonal variations in recycled water demands versus inflow to TWRF.

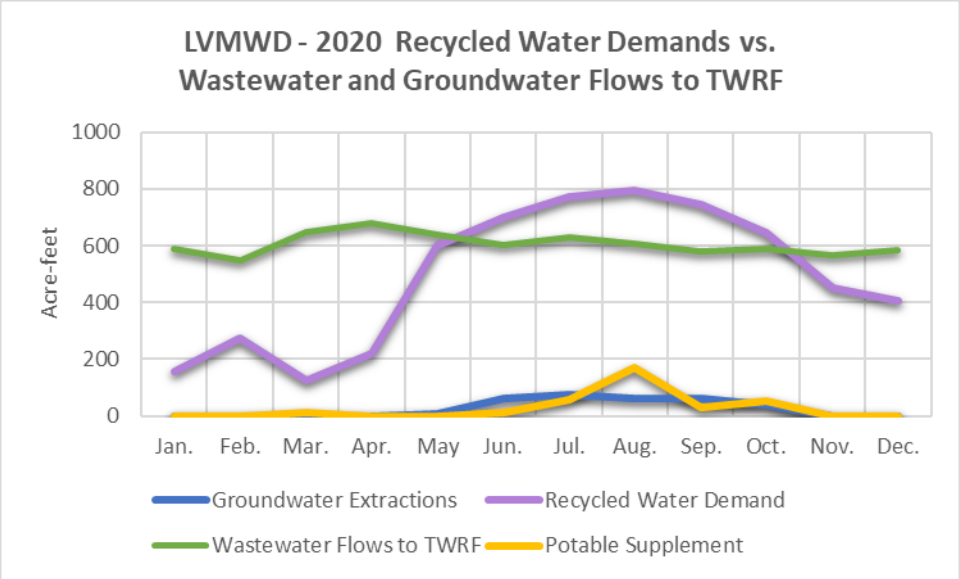

Figure 6-7: 2020 Recycled Water Demand Seasonal Variation

While the Regional Water Quality Control Board (RWQCB) has permitted TWRF tertiary treated water for spray landscape irrigation, agriculture, and industrial uses, recycled water uses by LVMWD's customers are almost exclusively for landscape and golf course irrigation within LVMWD's service area. Historical recycled water deliveries to LVMWD customers since 2016 are shown in Figure 6-8. Recycled water demands peaked in 2020 due to unusually dry and warm conditions during winter months resulting in increased recycled water use during normal periods of low demand. The average demand over the past five years was 4,677 AFY.

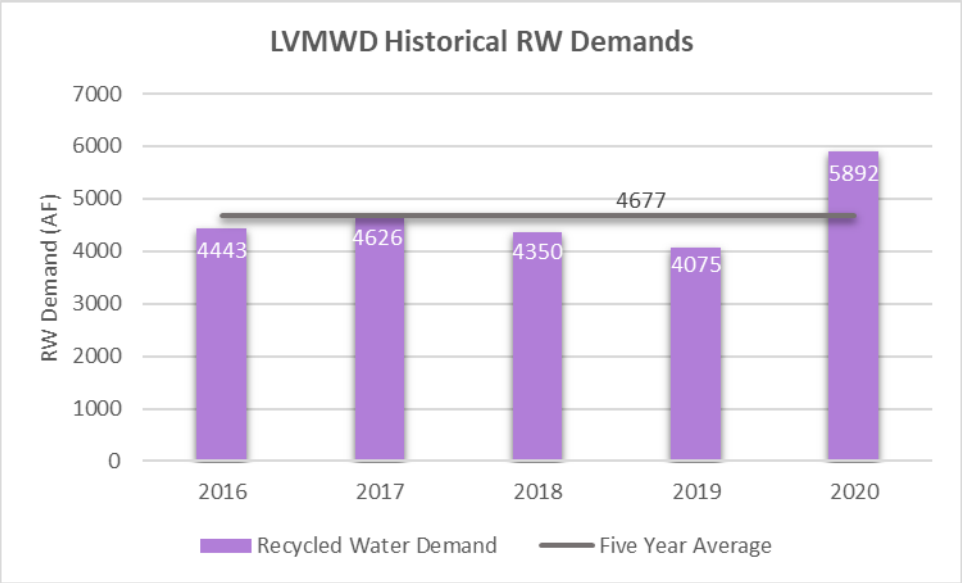

Figure 6-8: LVMWD Historical Recycled Water Demands

Past recycled water planning efforts have been successful in connecting virtually all schools, parks, and golf courses within the service area to the existing recycled water system. LVMWD's opportunities for expanding the supply of the recycled water system is limited by the wastewater flow from its service area. Opportunities for developing additional recycled water use are also limited as the LVMWD service area is nearly built out. There are small developments that are expected to be built in the upcoming decades, but these developments aren't anticipated to include larger recycled water users.

Currently, LVMWD expects recycled water uses to decline in the future based on conservation starting FY2023[5]. The district has expanded efforts to encourage conservation of recycled water uses. Efforts include modified rates, imposing penalties for exceedance of water budget, installing advanced meters, and enhancing outreach regarding conservation with existing recycled water customers. LVMWD does not currently have plans to expand the recycle water system. It is anticipated that during months of low recycled water demand, excess water that would normally be disposed of will go to supply the Pure Water Project. For a conservative approach for projecting future recycled water demands in this UWMP, the estimated values in Table 6-4 reflect the average over the last five years and will remain constant through 2040. LVMWD expects that any new demands that may arise in the future will be for landscape irrigation use.

Table 6-5 provides a comparison of the projections from the 2015 UWMP to the actual use in 2020.

[5] Rate Study 2020. Las Virgenes Municipal Water District 2020 Water, Recycled Water, and Sanitation Rate Study, Final Report, December 15, 2020.

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area										
☐	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:	JPA: LVMWD and TWSD									
Name of Supplier Operating the Recycled Water Distribution System:	JPA: LVMWD, TWSD, CMWD									
Supplemental Water Added in 2020 (volume) *Include units*										
Source of 2020 Supplemental Water	Groundwater; imported potable water									
Beneficial Use Type	Potential Beneficial Uses of Recycled Water (Describe)	Amount of Potential Uses of Recycled Water (Quantity)	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045 (opt)
Landscape irrigation (excludes golf courses)		AFY	Irrigation	Tertiary	5,133	4,075	4,075	4,075	4,075	4,075
Golf course irrigation		AFY	Irrigation	Tertiary	757	601	601	601	601	601
Other *(Provide General description)*	Commercial	AFY	Dual Plumbed	Tertiary	1	1	1	1	1	1
				Total:	5,892	4,677	4,677	4,677	4,677	4,677
NOTES: Average demand from 2016-2020 is expected to remain constant for 2025 through 2045. Potable Water Supplement for the Recycled Water System in Table 4-1 & Table 4-2 are included.										

Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual			
	Recycled water was not used in 2015 nor projected for use in 2020. The Supplier will not complete the table below.		
Use Type		**2015 Projection for 2020**	**2020 Actual Use**
Agricultural irrigation			
Landscape irrigation (excludes golf courses)		3,771	5,133
Golf course irrigation		483	757
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	*Dual Plumbed*		1
Total		4,254	5,892
NOTES: 2020 Actual Use includes Potable Water Supplement for the Recycled Water System in Table 4-1.			

6.2.5.5 Action to Encourage and Optimize Future Recycled Water Use

The 2014 Recycled Water Master Plan evaluated infrastructure improvements needed to reach new customers and address capital facility replacement needs. These improvements would contribute to optimizing existing recycled water use. As noted above, opportunities for developing substantial new recycled water demands are limited and currently the District is encouraging conservation.

Optimizing recycled water use also depends on maximizing use during periods where recycled water supply exceeds demands. This is primarily important in months April through November when excess treated water cannot be discharged to Malibu Creek due to permit restrictions. During these months, one method has been to encourage recycled water customers to practice conservation. By 2030, LVMWD expects its Pure Water Project to be online which will enable excess treated water to be utilized to fill the Las Virgenes Reservoir.

The District and its JPA partner, TWSD have been undertaking an effort for seasonal storage of recycled water, which entails long-range plans to beneficially use all of the JPA's recycled water and to effectively discontinue discharges to Malibu Creek. In July of 2015, a Plan of Action to discontinue discharges to Malibu Creek was approved by the JPA Board of Directors. As a drought response measure, the JPA had been making recycled water available at no cost by allowing residential customers to fill up their own sealable containers from the Rancho Las Virgenes Composting Facility and obtain up 300 gallons of recycled water per visit after attending a brief training. Currently the District is encouraging recycled water conservation and is in the process of developing the Pure Water Project to further treat and store excess treated recycled water within the Las Virgenes Reservoir. See section 6.2.8.

LVMWD's potable water customer base is primarily residential as shown in Section 4.2.1 in which do not receive recycled water for use. Methods to expand future recycled water use is shown in Table 6-6.

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

☒	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
6.2.5.4	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Add additional rows as needed			
		Total	0

6.2.6 Desalinated Water

The California UWMP Act requires a discussion of potential opportunities for use of desalinated water (Water Code Section 10631[h]). LVMWD has evaluated opportunities for using desalinated sea water and desalinated brackish groundwater in future supply options.

Currently, none of the opportunities are practical or economically feasible and the District is not planning to pursue them. Desalination options considered by LVMWD are described below.

6.2.6.1 Seawater Desalination

It is not considered practical nor economically feasible to implement a seawater desalination program at this time. While located near the Pacific Ocean, in comparison to many other water purveyors, the topography of LVMWD's service area would not be conducive to pumping desalinated water from the ocean. LVMWD may consider an option to provide financial assistance to other retailers and/or team with MWD to provide financial assistance in the construction of other retail water purveyor's seawater desalination facilities in exchange for SWP supplies.

6.2.6.2 Desalinated Brackish Groundwater

Groundwater from the Thousand Oaks Area basin underlying the LVMWD service area is currently delivered to the TWRF for treatment and subsequent use in the recycled water system. These groundwater supplies are characterized by elevated TDS concentrations, reaching as high as 2,800 mg/l in some areas in addition to high iron and manganese concentrations. Currently, a conversion of this groundwater use for potable supplies is not considered a feasible option. No other opportunities for desalination of local brackish groundwater currently exist.

6.2.7 Water Exchanges and Transfers

6.2.7.1 Exchanges

As mentioned in Chapter 2, LVMWD and Calleguas Municipal Water District (CMWD) are in the process of constructing a joint interconnection between their potable water systems. The interconnection will enable delivery of potable water from one agency to the other if imported water supply are interrupted and would enable LVMWD to receive water from CMWD to support winter refill of the Las Virgenes Reservoir. Based on a Memorandum of Agreement it is anticipated to enable the exchange of approximately 870 AFY and will allow LVMWD to fill the Las Virgenes Reservoir by an additional 1,300 AFY. Currently, an agreement regarding operations is still pending. Furthermore, this additional water could serve as an alternative to purchasing water from MWD during summer months. Overall, this interconnection will increase reliability of the potable water systems for both agencies.

6.2.7.2 Transfers

No transfers are currently planned.

6.2.7.3 Emergency Interties

During planned and unplanned MWD outages, LVMWD also utilizes an interconnection to the Los Angeles Department of Water and Power (LADWP), which was enabled through an agreement with MWD and LADWP. LADWP provides supply at two distinct connections, one at Kittridge Street and one at Germain Street. Imported supplies from MWD presented in this UWMP include water supplied through three connections to the MWD system and the LADWP connections.

6.2.8 Future Water Projects

LVMWD updated its Integrated Water System Master Plan in 2014 (IWSMP)[6]. Analysis of the potable water system resulted in recommended improvements including piping, storage, and pumping improvements to enhance system operations and reliability.

With the implementation of the projects outlined in the IWSMP, LVMWD will improve its potable water infrastructure to provide more reliable potable water services, but these projects are not expected to increase supplies or result in new supplies. As a result, no planned supplies are shown in supply projection tables.

Most of the potential for growth in recycled water demand stems from extensions to the existing recycled water system and conversion of existing potable water demand to recycled use[7]. Currently, LVMWD does not expect any growth in recycled water demand into the future.

As mentioned previously, the Pure Water Project is being developed by the District in which excess tertiary treated recycled from TWRF, that normally would be disposed of during months of low recycled water demand, will go through further advance water treatment methods to reach drinking water standards. This advanced treated water will be blended and stored within the Las Virgenes Reservoir and treated further at the WFP prior to distribution in the potable water system.

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
☒	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.					
	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.					
6.2.8	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 *Drop Down List*	Expected Increase in Water Supply to Supplier *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
NOTES:						

[6] Kennedy/Jenks Consultants. 2014a. Integrated Master Plan Update 2014. Prepared for the Joint Powers Authority of LVMWD and TWSD with assistance from HDR. June 2014.

[7] HDR. 2014. Recycled Water Master Plan Update 2014. Prepared for Joint Powers Authority of LVMWD, TWSD, and CMWD. June 2014.

6.2.9 Summary of Existing and Planned Sources of Water

6.2.9.1 Description of Supplies

As mentioned previously, the District relies on four sources for water supply that have been developed to provide increased water reliability and efficient water use to help meet the water demand of the LVMWD service area into the future. The existing and planned sources of water within the LVMWD service area is as follows:

- During 2020, Imported potable water accounted for 78 percent of total supply for LVMWD. The largest imported supply is from MWD. The District also purchases water from Ventura County Waterworks District's (VCWWD No. 17) and (VCWWD No. 8) and has a connection to the City of Los Angeles Department of Water and Power.
- During 2020, Recycled water from the Tapia Water Reclamation Facility (TWRF) accounted for 22 percent of supply to the District
- Groundwater from the Thousand Oaks Area Basin is only used to supplement the recycled water supplies and is not accounted for directly in Table 6-9

LVMWD has developed these water resources to provide increased water reliability and efficient water use to help meet the water demand of the LVMWD service area into the future.

6.2.9.2 Quantification of Supplies

Table 6-8 shows the actual water supplied to the LVMWD system for each supply source in 2020.

Submittal Table 6-8 Retail: Water Supplies — Actual

Water Supply	Additional Detail on Water Supply	2020		
		Actual Volume	Water Quality	Total Right or Safe Yield *(optional)*
Add additional rows as needed				
Purchased or Imported Water	MWD	20,392	Drinking Water	
Purchased or Imported Water	Ventura County Waterworks 8	39	Drinking Water	
Purchased or Imported Water	Ventura County Waterworks 17	102	Drinking Water	
Purchased or Imported Water	City of Los Angeles	284	Drinking Water	
Recycled Water	TWRF	5,560	Recycled Water	
	Total	26,377		0

NOTES: Recycled Water Supply does not include 332 AFY of Potable Water Supplement to the Recycled Water System as shown in Table 4-1

Table 6-9 shows projected supplies for each supply source for 2025 to 2045. Projected supplies are based on the difference in reliable volumes of local supplies and projected demands in Section 4.2.6 yielding a required imported water volume. Imported water projections are based on the information derived from the reliability of MWD's supplies discussed in Section 7.2.

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
Purchased or Imported Water		19,190	17,146	18,263	19,444	20,692
Supply from Storage	Pure Water Project - Las Virgenes Reservoir	0	3,100	3,100	3,100	3,100
Recycled Water		3,995	3,995	3,995	3,995	3,995
Total		23,185	24,241	25,358	26,539	27,787
NOTES: Recycled Water Supply does not include Potable Water Supplement. Purchased or Imported Water is set equal to total potable water demand from Table 4-2. Source water is expected to be reliable during normal, single-dry year, and extended drought periods into the future.						

6.2.10 Special Conditions

6.2.10.1 Climate Change Impacts

It is difficult to quantify what affect climate change will have on supplies to the District, but it is expected that supply will be negatively impacted. For local production, increased evaporation, increased temperature, and a decrease in annual precipitation may increase losses at the Las Virgenes Reservoir and may reduce surface water from infiltrating into groundwater basins resulting in lower groundwater levels. These impacts may be felt statewide and may also have a negative impact on imported water supplies to the District. Considerations from climate change are discussed in Section 4.5.

6.2.10.2 Regulatory Conditions

Imported water: Regulatory conditions that could affect imported water supply to LVMWD service include any change in allocation either directly from MWD or other Ventura County suppliers. 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 LVMWD. Also, during periods of reduced water measures or drought, MWD could implement Water Shortage Action Plans that could affect supply. Future projects such as expanded storage capacity or conveyance facilities implemented by MWD can provide additional capacity to their water systems which may strengthen the reliability of the of the supply to LVMWD.

Groundwater: There are no defined legal pumping rights for LVMWD within the Thousand Oaks Area Basin. LVMWD has not adopted a groundwater management plan, and no regional groundwater management plan currently exists for the Basin. See section 6.2.2.3.

Recycled Water: Recycled water supply is regulated by the State Title 22 requirements. Any change in the State law applicable to the production, distribution and disposal of recycled water may influence the supply produced at the TWRF.

6.2.10.3 Other Local Applicable Criteria

6.3 Submittal Tables Completion Using the Optional Planning Tool

The Optional Planning Tool was not used in this UWMP.

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. The most recent energy data available used to estimate energy consumption and energy intensity for the LVMWD potable water system is from FY 2018, shown below in Table 6-G. Energy data for FY 2020 was not available at the time of this UWMP.

Table 6-G: LVMWD Potable System Estimated Energy Intensity FY2018	
Annual Energy Consumption	
Facility Description	**kWh**
Agoura Pump Station	24,888
Argos Sectionalizing Valve	192
Box Canyon Pump Station	90
Conduit Pump Station	137,662
Cornell Pump Station	537,933
Equestrian Tank	272
JBR Pump Station	7,896
Jed Smith Pump Station	428,618
Kimberly Pump Station	65,754
Latigo Canyon Tank	36
Lower Oaks Booster	193,412
Lower Oaks Tank	582
LV-2 Pump Station	329,095
Morrison Pump Station	3,549
Morrison Tank	312
Mulwood P/R Station	172
Oakridge Pump Station	17,916
Seminole Pump Station	690,814
Seminole Tank Irrigation	248
Three Springs Pump Station	54,950

Upper Twin Lakes Pump Station	49,619
Upper Twin Lakes Tank	190
Warner Pump Station	551,764
Westlak P/R Station	172
Westlake Filter Plant	404,256
Westlake Pump Station	472,213
Woolsey Tank	212
Total	**3,972,817**
Energy Intensity	
LVMWD Potable System Energy Consumption (kWh)	3,972,817
LVMWD Potable System Volume (AF)	20,506*
Estimated System Energy Intensity (kWh / AF)	**194 kWh/AF**
Notes: *LVMWD Potable System Volume (AF) is taken from Historical Imported Water Supply shown in Table 6-C for 2018.	

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 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 LVMWD service area.

It is the goal of LVMWD 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, the UWMP successfully achieves this goal.

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 LVMWD 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 below[8]:

- 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. See more details below

7.2.1.1 Water Quality

This section provides a general description of the water quality of the supplies delivered by the District. The District is committed to providing its purveyors with high quality water meeting all federal and state primary drinking water standards. The sources of drinking water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it

[8] MWD Final Draft 2020 UWMP

dissolves naturally occurring minerals and various contaminants. 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 LVMWD 2019 Water Quality & Consumer Confidence Report.

7.2.2 Year Type Characterization

The below scenarios are used to report the characteristics of water supplies during the year types required for the water service reliability assessment. Below are the three-year types included:

- **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 their 2020 UWMP dated June 2021, MWD estimated supply capability and projected demands for a normal year based on an average of hydrology analysis for the years 1922-2017; 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. These estimates are summarized in Tables 2-3, 2-5, and 2-6 of their 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 the region can provide reliable water supplies under both the single driest year and the multiple dry year hydrologies. MWD Table 2-6 reports the expected situation on the average over all historic hydrologies from 1922-2017.

A summary of the information provided in MWD Tables 2-3, 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 surpluses, based on the capability of current programs, range from 27 percent to 65 percent of projected supply. With the inclusion of supplies under development, potential surpluses also range from 27 percent to 65 percent of projected supply. 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.

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	2,772,000	2,761,000	2,760,000	2,760,000	2,757,000
Projected Demands	1,544,000	1,500,000	1,473,000	1,496,000	1,525,000
Projected Difference	1,228,000	1,261,000	1,287,000	1,264,000	1,232,000
Projected Surplus % [(a)]	44%	46%	47%	46%	45%
Supplies under Development	0	0	0	0	0
Potential Surplus	1,228,000	1,261,000	1,287,000	1,264,000	1,232,000
Potential Surplus %[(a)]	44%	46%	47%	46%	45%
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	2,178,800	2,219,000	2,241,000	2,263,000	2,239,000
Projected Demands	1,592,000	1,570,000	1,537,000	1,539,000	1,564,000
Projected Difference	586,800	649,000	704,000	724,000	675,000
Projected Surplus %[(a)]	27%	29%	31%	32%	30%
Supplies under Development	0	0	0	0	0
Potential Surplus	586,800	649,000	704,000	724,000	675,000
Potential Surplus %[(a)]	27%	29%	31%	32%	30%
Average Year MWD Supply Capability and Projected Demands (1922-2017 Hydrology)					
	2025	2030	2035	2040	2045 *(Opt)*
Capability of Current Programs	3,899,000	3,893,000	3,890,000	3,888,000	3,885,000
Projected Demands	1,427,000	1,388,000	1,362,000	1,378,000	1,403,000
Projected Difference	2,472,000	2,505,000	2,528,000	2,510,000	2,482,000
Projected Surplus %[(a)]	63%	64%	65%	65%	64%
Supplies under Development	13,000	13,000	13,000	13,000	13,000
Potential Surplus	2,485,000	2,518,000	2,541,000	2,523,000	2,495,000
Potential Surplus %[(a)]	64%	65%	65%	65%	64%

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.

7.2.3 Water Service Reliability

Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years.

Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020	Available Supplies if Year Type Repeats	
		☐	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		☑	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	**% of Average Supply**
Average Year	2020	23185	100%
Single-Dry Year	1977	25488	112%
Consecutive Dry Years 1st Year	1988 to 1992	25488	112%
Consecutive Dry Years 2nd Year	1988 to 1992	25488	112%
Consecutive Dry Years 3rd Year	1988 to 1992	25680	113%
Consecutive Dry Years 4th Year	1988 to 1992	25680	113%
Consecutive Dry Years 5th Year	1988 to 1992	25872	114%

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

***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES:

7.2.3.1 Water Service Reliability – Normal Year

Assumptions about supplies and demands are provided in Chapters 4 and 6. Table 7-2 demonstrates that LVMWD anticipates adequate supplies for years 2025 to 2045 under Normal conditions.

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 *(Opt)*
Supply totals *(autofill from Table 6-9)*	23,185	24,241	25,358	26,539	27,787
Demand totals *(autofill from Table 4-3)*	23,185	24,241	25,358	26,539	27,787
Difference	0	0	0	0	0
NOTES:					

7.2.3.2 Water Service Reliability – Single Dry Year

LVMWD's water supplies and demands over the 25-year planning period were analyzed in the event that a single-dry year occurs, similar to the drought that occurred in the recent 10 years. Table 7-3 summarizes the existing and planned supplies available to meet demands during a single-dry year. Demand during dry years was assumed to increase by 12 percent over the average water year, based the highest increase above the normal year between two years over the last 10-year period. This percentage was applied to the imported water supply values.

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals*	25,488	26,298	27,549	28,872	30,270
Demand totals*	25,488	26,298	27,549	28,872	30,270
Difference	0	0	0	0	0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*					
NOTES:					

7.2.3.3 Water Service Reliability – Five Consecutive Dry Years

The water supplies and demands for the LVMWD service area over the 25-year planning period were also analyzed in the event that a five consecutive dry year event occurs. Water systems are typically more vulnerable to these dry conditions of longer duration because they deplete water storage reserves in local and state reservoirs and in groundwater basins. Table 7-4 summarizes the existing and planned supplies available to meet demands during multiple-dry years. Demand during multiple-dry year conditions was assumed to increase by 14 percent over average water conditions, by the fifth year of dry conditions. This percent increase is based on the highest five-year period increase over the last five-year period.

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	25,488	26,298	27,549	28,872	30,270
	Demand totals	25,488	26,298	27,549	28,872	30,270
	Difference	0	0	0	0	0
Second year	Supply totals	25,488	26,298	27,549	28,872	30,270
	Demand totals	25,488	26,298	27,549	28,872	30,270
	Difference	0	0	0	0	0
Third year	Supply totals	25,680	26,470	27,732	29,066	30,477
	Demand totals	25,680	26,470	27,732	29,066	30,477
	Difference	0	0	0	0	0
Fourth year	Supply totals	25,680	26,470	27,732	29,066	30,477
	Demand totals	25,680	26,470	27,732	29,066	30,477
	Difference	0	0	0	0	0
Fifth year	Supply totals	25,872	26,642	27,915	29,261	30,684
	Demand totals	25,872	26,642	27,915	29,261	30,684
	Difference	0	0	0	0	0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES:						

7.3 Supply and Demand Assessment

Approximately 78 percent of LVMWD's planned water supply comes from MWD. Based on MWD's 2020 UWMP Update, it was determined MWD has sufficient supply through a drought period that lasts five consecutive water years and this is reflected in LVMWD's analysis.

7.3.1 Data Methods, and Basis for Water Shortage Condition

LVMWD attends regular meetings with MWD staff. MWD will continue their ongoing WSDM supply-demand tracking process which is compiled into a monthly Board of Directors reporting. LVMWD will continue to track MWD reporting tools. MWD anticipates presenting a completed Annual Assessment by June of each year. This assessment can also trigger any recommended shortage stage. LVMWD will need to use the information provided by MWD to prepare their Annual Assessment which will be submitted to DWR annually by July 1 beginning in 2022.

7.3.2 DRA Water Source Reliability

For retail suppliers, information on supply reliability can be obtained from each Wholesale Supplier for water source reliability assessment. LVMWD would rely upon MWD's DRA Water Source Reliability. Per the MWD's 2020 UWMP Update, MWD's core water supplies include estimated water supplies from the Colorado River and the State Water Project (SWP) for the current year. Imported core supplies vary from year to year and are influenced by annual weather and hydrology, as well as demand by other higher priority users and operational and regulatory factors.

Table A.4-3
Core Water Supplies

Source	Core Supply
Colorado River	Colorado River Basic Apportionment
	Higher Priority Water Use Adjustment to Colorado River Basic Apportionment
	IID/MWD Conservation Program
	PVID Fallowing Program (minimum)
	Lower Colorado Water Supply Project
	Exchange with SDCWA (SDCWA/IID Transfer and Coachella & All-American Canal Lining
	Exchange with the United States (Coachella Canal Lining)
State Water Project	MWD SWP Table A
	SWP Article 21 Interruptible Supplies
	SWP Port Hueneme Lease of Ventura Table A
In-Region	San Gabriel Valley Municipal Water District Program

Figure 7-1 MWD 2020 UWMP Core Water Supplies

7.3.3 Total Water Supply and Use Comparison

MWD's supply capability and projected demands are presented in Table 7-A. Based on the MWD's 2020 UWMP Update, it is anticipated LVMWD will have sufficient supplies to meet their demands.

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). The WSCP aligns with the MWD WSCP to ensure continuity, collaboration, and efficiency. The WSCP also draws upon lessons learned from the 2012-2016 drought, California's driest period on record. The following discussion presents the various stages and basis for implementation.

8.1 Water Supply Reliability Analysis

The primary source of water supply for LVMWD has been water imported from MWD. 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, LVMWD supplied a total of 20,533 AF from imported water purchased from MWD, which was 77 percent of the total water supply including recycled water. Groundwater and recycled water are discussed further in Chapter 4.

8.2 Annual Water Supply and Demand Assessment Procedures

As an urban water supplier, LVMWD must prepare and submit an Annual Water Supply and Demand Assessment. The following information provides the procedures LVMWD will undertake to complete and approve the Annual Assessment.

8.2.1 Decision-Making Process

MWD will prepare their Annual Assessment by the month of June and present to their Board of Director's. This presentation will also include appropriate triggers for recommendations regarding specific shortage response actions as a result of the assessment. LVMWD will utilize the information provided by MWD to prepare their Annual Assessment to be presented to their Board of Directors for approval and submission to DWR by July 1.

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

LVMWD will utilize the MWD Annual Assessment process and monthly WSDM supply-demand reporting to evaluate for their annual assessment for imported water supplies. MWD will monitor emerging supply and demand conditions throughout the year and take appropriate actions consistent with the flexibility and adaptability inherent to the Water Shortage Contingency Plan.

Water Supply

LVMWD receives approximately 78 percent of their water supply from MWD. LVMWD will rely upon MWD's evaluation of water supply sources as part of their annual water supply and demand assessment procedures for imported water supplies.

Unconstrained Customer Demand

LVMWD will need to evaluate expected water needs for the coming year or "unconstrained demand" per the Water Code Section 10632. It is anticipated customer water use will be evaluated based on billing records as used in Chapter 4 analysis.

Planned Water Use for Current Year Considering Dry Subsequent Year

LVMWD will evaluate anticipated supplies for the coming year, while anticipating that the following year will be dry. LVMWD will continue to review MWD's planned water supplies for making decisions involving water shortage responses.

Infrastructure Consideration

Throughout each year, LVMWD and MWD regularly carry out preventive and corrective maintenance of facilities. MWD plans and performs shutdowns to inspect and repair pipelines and facilities and support capital improvement projects. These shutdowns involve a high level of planning and coordination within MWD, as well as with member agencies, other affected organizations, contractors, and the community. For LVMWD planned outages, they will bring Westlake Filtration Plant online to supply the west end of the District's service area and connect to LADWP (Kittridge + Germain) to supply the east end during planned maintenance periods.

8.3 Six Standard Water Shortage Stages

As required by CWC §10632(a)(3)(A), the WSCP is framed around six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

In 2016, LVMWD created a WSCP that established four stages of escalating response to a water shortage caused by droughts and/or emergencies. Each stage may be triggered by a declaration from federal or state authorities, MWD, or LVMWD to address events that result in a water shortage. The stages and description are summarized in Table 1 and matched to the six standard UWMP shortage levels.

Table 8-1. Water Shortage Contingency Plan Comparison

Shortage Level	Percent Shortage Range
1	Up to 10%
2	Up to 20%
3	Up to 30%
4	Up to 40%
5	Up to 50%
6	>50%

Shortage Level	Percent Supply Reduction	Water Supply Condition
1 Water Shortage Alert	0 to 10%	Stage 1 is a condition resulting in a 0 to 10% water shortage necessitating a voluntary water use reduction. The District will initiate a public information campaign to increase awareness of water conservation measures specified in the Administrative Code Section 3-4.404. Customers are expected to perform voluntary water use reductions and adhere to on-going water conservation measures.
2 Water Shortage Warning	10-20%	Stage 2 is a condition resulting in a 10 to 20% water shortage necessitating a higher level of voluntary water use reduction. The District will expand the public information campaign and step up enforcement of water conservation measures. Customers are expected to re-double voluntary water use reductions and strictly adhere to water conservation measures
3 Water Shortage Emergency	20-50%	Stage 3 is a condition resulting in a 20 to 50% water shortage necessitating mandatory water use reductions. Depending on the severity of the shortage, the District will intensify the public information campaign and expand enforcement of water conservation measures. Additionally, the Board will determine the appropriate drought factor for water budgets if necessary.
4 Critical Water Shortage Emergency	>50%	Stage 4 is a condition resulting in a 50% or higher water shortage necessitating prohibition of outdoor water use for irrigation, pools and fountains. The District will implement crisis communications and activate its Emergency Operations Center. Customers shall be required to terminate all outdoor use except as necessary to protect public health and safety. Additionally, the Board will determine reduction in indoor water budgets if necessary.

8.4 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 shortage response actions will align with and are in part dictated by MWD. The table below provides a summary of the shortage stage and the suite of response actions MWD and LVMWD may take.

Table 8-A. Shortage Stages and Response Actions

Shortage Stage	Shortage Percentage	Response Actions		
		Trigger	Actions	Shortage Met
1	Up to 10%	• Federal, state or local disaster declaration that may impact water supplies • State or MWD declaration due to drought or system maintenance • LVMWD Board of Directors determination • Unplanned LVMWD water system maintenance	**MWD** • Take from storage • Execute Flexible Supplies • Implement Water Supply Allocation Plan (WSAP) **LVMWD** • Initiate public information campaign with large water users, cities, and County • Commence enforcement of conservation measures	**MWD** • 0 to 100% met by storage • 0 to 100% met by Flexible Supplies • 0 to 50% of total base demand met by WSAP implementation **LVMWD** • 0 to 20% met by demand reduction • 0 to 50% met by water shortage allocation
2	Up to 20%	See Stage 1 triggers. The difference is the severity and/or maintenance repair time.	**MWD** • Take from storage • Execute Flexible Supplies • Implement Water Supply Allocation Plan **LVMWD** • Initiate public information campaign with large water users, cities, and County • Commence enforcement of conservation measures	**MWD** • 0 to 100% met by storage • 0 to 100% met by Flexible Supplies • 0 to 50% of total base demand met by WSAP implementation **LVMWD** • 0 to 20% met by demand reduction • 0 to 50% met by water shortage allocation
3	Up to 50%	• Federal, state or local disaster declaration that may impact water supplies • State or MWD determination due to drought or significant system failure • State outdoor irrigation restriction; and/or • MWD Water Supply Allocation Plan (5-50% of baseline allocation) • LVMWD Board of Directors determination • Unplanned LVMWD water system failure or emergency (Westlake Filtration Plant, Dam and/or Backbone System)	**MWD** • Take from storage • Execute Flexible Supplies • Implement Water Supply Allocation Plan **LVMWD** • Take from storage • Intensify public information campaign • Expand enforcement of conservation measures • Implement State and MWD required reductions • Provide regular media, city councils, and County briefings • Activate emergency connections with mutual aid agencies	**MWD** • 0 to 100% met by storage • 0 to 100% met by Flexible Supplies • 0 to 50% of total base demand met by WSAP implementation **LVMWD** • 0 to 100% met by short-term storage (3 months max.) • 0 to 20% met by demand reduction • 0 to 50% met by water shortage allocation
4	>50%	• Federal, state or local disaster declaration that may impact water supplies • Sacramento to Delta/SWP failure • State or MWD determination due to drought or significant system failure • LVMWD Board of Directors determination • Natural or human-caused catastrophe disrupting delivery of water to, or within the service area • Severe LVMWD water system failure (Westlake Filtration Plant, Dam and Backbone System)	**MWD** • Take from storage • Execute Flexible Supplies • Implement Water Supply Allocation Plan **LVMWD** • Take from storage • Activate Emergency Operations Center and implement crisis plan • Implement State and MWD required reductions • Install flow restrictors on meters as necessary • Terminate potable water supplement to the recycled water system • Recall all temporary meters and activate water fill stations	**MWD** • 0 to 100% met by storage • 0 to 100% met by Flexible Supplies • 0 to 50% of total base demand met by WSAP implementation **LVMWD** • 0 to 100% met by short-term storage (3 months max.) • 0 to 20% met by demand reduction • 0 to 50% met by water shortage allocation

8.5 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 District Office on June 1, 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://www.lvmwd.com/your-water/urban-water-management-plan.

Chapter 9: Demand Management Measures

In 2018, two important legislative actions were passed that require water agencies to implement additional conservation efforts. AB 1668 and SB 606 build on previous state efforts to make water conservation a way of life in California and create a new foundation for long-term improvements in water conservation and drought planning. These legislative actions will provide the long-term direction of state conservation efforts and will have important implications for the District as we implement conservation programs to achieve the state requirements.

SB 606 and AB 1668 establish guidelines for efficient water use and a framework for the implementation and oversight of the new standards, which must be in place by 2022. In addition to these legislative actions, system water loss legislation under SB-555 also requires urban retail water providers to achieve water loss standards for minimizing system water loss (i.e. pipeline leaks).

In order to assist with the implementation of these directives, they have been collectively included into an implementation framework called *Making Conservation a California Way of Life*. The framework outlines the actions that state agencies will be taking to implement the legislation and their directives.

The purpose of the Demand Management Measures (DMM) section of this UWMP is to describe the DMMs that LVMWD (a) has implemented over the past five years (since 2015) to meet its urban water use reduction targets and (b) plans to implement to meet its urban water use reduction targets. The UWMP Act and Water Code require descriptions of the following DMMs:

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

Narrative descriptions of LVMWD's DMMs are provided below and include conservation measures already in place as well as those that are being considered to improve the efficiency of water use within LVMWD.

9.1 Demand Management Measures for Retail Suppliers

9.1.1 Water Waste Prevention Ordinances

Section 3-4.202 of Article 2 of the LVMWD Administrative Code, addresses penalties for wasteful water use. These penalties were adopted on August 11, 2015, became effective on January 1, 2016, and were amended on March 12, 2019. As described in that section, District customers are not allowed to use water wastefully or negligently and shall not knowingly permit leaks.

Water use budgets are established for each customer of LVMWD. Water use exceeding twice a customer's water budget is considered a waste of water and a violation subject to escalating administrative penalties, as described in Section 3-4.202 and summarized in the table below. Water budgets are described under Section 9.1.3.

Table 9-1: Waste Water Penalties

Violation Level	Penalties or Charges
First Violation	The customer shall receive a written warning from LVMWD, with amount of exceedance and notice that further exceedances will result in monetary penalties.
Second Violation	A penalty of $2.50 per billing unit or portion thereof will be imposed, for water use exceeding twice the customer's water budget.
Third and Subsequent Violations	A penalty of $5.00 per billing unit or portion thereof will be imposed, for water use exceeding twice the customer's water budget.

In addition, mandatory conservation measures and irrigation practices, as required under Section 3-4.404, are listed in Table 9-3.

In August 2015, LVMWD also adopted Resolution No. 2481, which updated the Water Shortage Contingency Plan and is described in more detail in Section 8 – Water Shortage Contingency Plan.

9.1.2 Metering

Currently, all connections within LVMWD's service area are metered and customers are billed according to the amount of water used. LVMWD will continue to install meters on all new connections, however additional water conservation savings are not foreseeable from this measure.

Installation of Automatic Meter Reading/Automated Metering Infrastructure (AMR/AMI) is planned for the future, which will bring an estimated savings of 1,000 AFY. The AMR/AMI system will assist customers in monitoring their water use, facilitate compliance with water budgets and enhance leak detection.

9.1.3 Conservation Pricing

In an effort to encourage water use reduction, LVMWD implemented a budget-based water billing structure with Resolution No. 2475, adopted on October 26, 2015 (amended by Resolution No. 2542 on November 11, 2018). Each customer is provided with a personalized water budget, which is designed to meet their specific indoor and outdoor water needs.

For residential customers, budgets are based on 1) indoor use 2) outdoor use and 3) special adjustments based on your household needs. The indoor need is based on providing each person in the household with a standard volume of water (California standard is 55 gallons per day per person). Outdoor need is based on irrigated area and local weather and is variable on a monthly basis as weather changes. For commercial customers, individual budgets are based on each customer's historical usage. Customers are then charged based on their efficiency relative to their budget (by tier). A summary of the tiers, tier descriptions and related 2020 rates for residential, irrigation and commercial customer classes is provided in the Table 9-2.

Table 9-2: Quantity Rates and Tier Level		
Tier Name/Description (Residential and Irrigation[b])		**Customer Rates ($/HCF)[a]**
Tier 1	Efficient Indoor (Indoor Water Budget)	$3.14
Tier 2	Efficient Outdoor (Outdoor Water Budget)	$3.91
Tier 3	Inefficient (101-150% of Budget)	$4.58
Tier 4	Excessive (Over 150% of Budget)	$5.74

In addition to the budget-based commodity charges, District water rates also include a "Readiness to Serve Charge", which is a fixed rate depending on the meter size, and per unit elevation charges to offset pumping costs. Elevations charges differ by zone, with customers at higher elevations paying higher costs per unit of water.

9.1.4 Public Education and Outreach

9.1.4.1 Public Information Program

LVMWD maintains an intensive outreach commitment to customers regarding water conservation benefits and practices. LVMWD engages in numerous public information programs, including ongoing public tours of district facilities preceded by a presentation on conservation, specialized tours provided to leadership from local cities, state and local elected officials and local environmental groups and their volunteers. LVMWD has a Speaker's Bureau that provides expert speakers to service clubs, homeowner associations, chambers of commerce and other organizations on a variety of topics, including water conservation, water efficient plant selections, environmental issues and more.

LVMWD utilizes multiple media outlets to encourage water conservation and educate its customers, including social media, its website, cable television, "auto dial" telephone messages, news releases, newsletters, paid ads in local newspapers, and portions of the Water Quality Report dedicated to conservation messages. LVMWD's General Manager is periodically featured on several television newscasts, a radio program and multiple cable television productions speaking on the topic of water conservation.

The LVMWD website provides a substantial amount of water conservation resources and information. The website includes detailed tips and guidance on conserving water, both indoors and outdoors, including videos on how to check for leaks, irrigate properly, and save water. In addition, the website is used to advertise initiatives to further reduce potable water use. For example, free recycled water is available to customers of LVMWD or Triunfo Water and Sanitation District for irrigation purposes and is advertised on the LVMWD website. Participants can fill up their approved containers every Saturday after attending one training session. However, this program was suspended in 2020 due to the COVID-19 pandemic; there are no concrete plans on when this program will resume. The LVMWD website also advertises that any resident of LVMWD or Triunfo Water and Sanitation District can obtain free compost from the Rancho Las Virgenes Community Composting Facility every Saturday. The soil amendment improves soil conditions and results in reduced watering needs. Additional content includes rebates,

water-wise plants, daily watering index, sign-ups for water-wise gardening classes and facility tours and conservation advisories.

LVMWD also publishes a bi-monthly newsletter, “The Current Flow”, which provides LVMWD customers with updates on conservation, rebates, environmental stewardship, easy to use water-saving ideas, landscaping tips and more. The newsletter is mailed to customers and is also available on the LVMWD website and in hard copy at LVMWD. Water conservation information is also included in the LVMWD annual water quality report. Social media outlets, including twitter and Facebook, are also used for public outreach.

At community events occurring throughout the District’s service area, LVMWD promotes awareness of water conservation issues through an informational outreach booth, often accompanied by its mascot “Little Drop.” Among the many of the events where LVMWD has encouraged water conservation are the following:

- Agoura Hills Conservation Summit and Expo
- Agoura Hills Concerts in the Park
- Agoura Hills Public Safety Day
- Bay Laurel Carnival
- Calabasas Pumpkin Festival
- Calabasas Earth Day Celebrations
- Agoura Hills Reyes Adobe Days
- Westlake Village Rotary Street Fair
- Sumac Elementary’ s Fall Festival

Many of these events were cancelled in 2020 but are currently being tentatively scheduled in 2021 by the lead agencies.

Further efforts include the donation of water-topic books and other resources to local libraries, and presentations scheduled at local city council meetings, all of which are carried on public access television. LVMWD also conducts point of purchase advertising in conjunction with its rebate programs.

9.1.4.2 School Education Programs

In addition to reaching out to the general public, LVMWD implements a school education program that includes providing educational materials and instructional assistance. LVMWD’s primary outreach is conducted with Las Virgenes Unified School District, which serves approximately 10,500 students. Additional outreach is made to private schools and home-schooled students. School programs include:

- $107,000 direct financial support for the LVUSD 4-5 Science Team
- Facility tours for all fourth-grade students and high school science classes (includes bus transportation)
- Educational water conservation performances by “The Story Pirates”

- Annual water conservation student art contest that generates several thousand submissions
- Support for two high school teams participating in the MWD Solar Cup Challenge
- Mentoring outreach to local high schools
- Website section devoted to water conservation targeted to students

9.1.5 Programs to Assess and Manage Distribution System Real Loss

A Water Activity Report, previously called Water Loss Report, was produced for the 2019 calendar year, based on the water system balance methodology established by the American Water Works Association (AWWA) Manual 36. The results showed that LVMWD's unaccounted water losses (real and apparent losses) are minimal, at approximately two percent for the audited period.

LVMWD regularly utilizes visual inspection of distribution routes and aerial surveys of 8 miles of pipeline traversing rugged terrain to detect leaks.

9.1.6 Water Conservation Program Coordination and Staffing Support

Water conservation is one of the primary methods LVMWD uses to reduce total customer demand. The 2018-20 Comprehensive Water Conservation Plan outlined a number of water conservation programs aimed at reducing wasteful water use, helping customers stay within their water budgets and achieving new and emerging state water conservation regulations. In order to achieve those goals, the District launched several conservation efforts targeting our most wasteful water users and inefficient outdoor water use.

Weather Based Irrigation Controller Giveaway Program

In February 2019, the District launched a program with Rachio Inc. to provide a full-service controller installation program. The program was intended to provide 2,000 smart controllers to customers including a free professional installation. The program was also specifically targeted to wasteful water use customers as defined by those customers that have exceeded 200% of their monthly water budget at least once since the inception of budget-based rates.

As of March 17, 2020, just prior to suspending installations as a result of COVID-19 concerns, 1,746 controllers had been installed for wasteful water use customers and 393 controllers had been installed for non-wasteful customers.

High Water Use Account Review and One-on-One Consultations

Field Customer Service staff provide one-on-one consultations with customers concerned with high water use. The consultation involves review of historic water usage, checks for leaks in the system, and review of irrigation settings.

Since the initiation of these efforts in June 2018, 953 one-on-one consultations have been conducted. The 2018 Conservation Plan set a goal of providing detailed review of at least 200 accounts per year and at least 60 comprehensive one-on-one consultations per year. Future reports will look at whether these consultations are making a difference, and to what degree, with regard to reductions in water use.

Rain Barrel Giveaway Program

In 2018 the District partnered with a local rain barrel provider, Smith Pipe and Supply, to implement a rain barrel voucher program. This program was an overwhelming success. Within hours of notifying customers

on our conservation email list, the program was suspended due to overwhelming demand that far exceed the number of rain barrels available. Due to the program being suspended as a result of expense and staff resource available to administer the program, fewer than expected rain barrels were distributed. However, 327 rain barrels were distributed to the initial wave of respondents.

Development of a Landscape Initiative

LVMWD staff performed a comprehensive review of landscape conservation programs throughout the region to find best practices and lessons learned. LVMWD found that programs can be more successful when they take advantage of partnerships and are regional in scale. LVMWD is seeking partners like Tree People to help develop and implement a landscape initiative. This work is ongoing and has not been implemented as of March 2021.

Improved Education and Outreach Efforts

The LVMWD External Affairs staff have increased their focus on education and outreach in the past several years. LVMWD has dramatically increased the number of tours given, with a focus on project-based tours. Additionally, LVWMD has done more outreach at community events across the service area. These efforts enhance awareness and understanding, in addition to building relationships and trust.

LVMWD has also brought water conservation into the classroom. In the fall of 2019, LVMWD, in partnership with Triunfo Water & Sanitation District, provided classroom presentation across six schools in the Oak Park School District. LVMWD held similar presentations with Las Virgenes Unified School Districts' outdoor education program prior to the COVID-19 pandemic. LVMWD believes this early education will help install water conservation practices and inspire the next generation of water professionals.

9.1.7 Other Demand Management Measures

9.1.7.1 Rebate Programs

LVMWD has been offering and promoting water conservation rebates in coordination with MWD as part of the SoCal WaterSmart rebates program, including the following:

- High Efficiency Toilet (HET)
- High Efficiency Clothes Washer (HECW)
- Weather-Based Irrigation Controller (WBIC)
- Rotating Sprinkler Heads
- Rain Barrel
- Cistern
- Soil Moisture Sensor System
- Premium High-Efficiency Toilets
- Ultra-Low and Zero Water Urinals
- Plumbing Flow Control Valves
- Larch Rotary nozzles
- In-stem Flow Regulators
- Soil Moisture Sensor Systems
- Connectionless Food Steamers
- Air-cooled Ice machines
- Cooling Tower Conductivity Controllers
- Cooling Tower pH Controllers
- Dry Vacuum Pumps

- Laminar Flow Restrictors
- Turf Removal

Table 9-3 provides a summary of conservation rebates provided between 2010 and 2015.

Table 9-3: Conservation Rebates Between 2015 and 2020

Rebate Type	Number of Rebates Provided
Residential Conservation Rebates	
High Efficiency Clothes Washer	583
Premium High Efficiency Toilet	54
High Efficiency Toilet	468
Cistern	3
Rain Barrel	221
Rotating Nozzle	1,225
Weather Based Irrigation Controller (WBIC)	381
WBIC Large Landscape (1+ acre)	34
WBIC Direct Install	2,073
WBIC Large Landscape (1+ acre) Direct Install	18
Turf Removal (sq. ft)	1,265,053
Commercial Conservation Rebates	
Cooling Tower pH Controller	3
Cooling Tower Conductivity Controller	1
Premium High Efficiency Toilet	10
High Efficiency Toilet	1
Flow Control Valves (Faucet/Shower)	1,105
Rotating Nozzle	1,071
Weather Based Irrigation Controller	147
Zero Water Urinal	12

9.2 Implementation over the Past Five Years

The District prepares the Comprehensive Water Conservation Plan every two years as a way to track and report on conservation efforts and water use patterns and proposed plans for the future. Implementation over the past five years is provided in the 2018-20 and 2020-22 reports.

9.3 Planned Implementation to Achieve Water Use Targets

Going forward, LVMWD will continue implementation of the DMMs described above. However, the extent and details of implementation may be modified. It is important to note that severe drought conditions, statewide reduction mandates and wholesale agency use restrictions have led LVMWD to considerably intensify their water conservation program efforts, including significantly increased public outreach and education. As a result, economic factors including feasibility and cost-effectiveness will be taken into account to evaluate future implementation and possible modifications to LVMWD's water conservation program. Overall, these programs will assist LVMWD in achieving its SBX7-7 2020 target as described in this UWMP. Based on the LVMWD 2020-22 Comprehensive Water Conservation Plan, the District will continue to focus on the following seven efforts:

- Weather Based Irrigation Controller Cost Share Program
- Improved Tracking of Water Use and Conservation Effectiveness (New)
- High Water Use Account Review and One-on-One Customer Consultations
- Rain Barrel Incentive Program
- Regional Landscape Conversion and Conservation Initiative
- Water Loss Prevention Program (New)
- Education and Outreach Efforts

9.4 Water Use Objectives

Water Code 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, and the first report will require information on what DMMs Suppliers will implement to meet their objectives. As such, each Supplier is encouraged to consider aligning conservation management actions and the changing urban use patterns in order to consider these future obligations.

Chapter 10: Plan Adoption, Submittal, and Implementation

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 was held prior to the adoption of the District's UWMP. The public meeting provided 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 applicable cities and counties and to the general public. Copies of all public notices are 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 Agoura Hills	Yes	Yes
City of Calabasas	Yes	Yes
City of Hidden Hills	Yes	Yes
City of Malibu	Yes	Yes
City of Simi Valley Waterworks District No. 8	Yes	Yes
City of Westlake Village	Yes	Yes
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Los Angeles County	Yes	Yes
Ventura County	Yes	Yes
NOTES:		

10.2.2 Notice to the Public

Prior to holding the public hearing and adoption meeting for this UWMP, a Notice of Public Hearing was published twice in a local newspaper, with a week between each notice. A copy of the public notice is included in Appendix B.

10.3 Public Hearing and Adoption

As part of the public hearing, the District provided information on its baseline values, water use targets, and implementation plan required in the Water Conservation Act of 2009. The public hearing on the UWMP took place before the adoption of the UWMP, but on the same day as the adoption. The public hearing and board adoption were held at the District office on June 1, 2021. The District has formally adopted the UWMP. A copy of the District's adoption resolution is included in Appendix C, along with the agenda for the public hearing.

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 D) and determine whether 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 urban water supplier and the department 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.

APPENDICIES

Appendix A Notification Letters

LAS VIRGENES MUNICIPAL WATER DISTRICT EST. 1958

Dedicated to Providing High-Quality Water Service in a Cost-Effective and Environmentally Sensitive Manner

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Director, Division 1

David W. Pedersen, P. E.
General Manager

W. Keith Lemieux
Counsel

HEADQUARTERS
4232 Las Virgenes Road
Calabasas, CA 91302
(818) 251-2100
Fax (818) 251-2109

WESTLAKE
FILTRATION PLANT
(818) 251-2370
Fax (818) 251-2379

TAPIA WATER
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www.LVMWD.com

MEMBER AGENCY OF THE
METROPOLITAN WATER
DISTRICT
OF SOUTHERN CALIFORNIA

Glen D. Peterson
MWD Representative

April 12, 2021

Attention:

Doug Hooper
Planning Director
City of Agoura Hills
30001 Ladyface Court
Agoura Hills, CA 91301

Dear Mr. Hooper,

Reference: Las Virgenes Municipal Water District (LVMWD) 2020 Urban Water Management Plan and Water Shortage Contingency Plan (WSCP) Availability and Public Comment Period

Las Virgenes Municipal Water District (LVMWD) is currently updating its Urban Water Management Plan (UWMP) and preparing its 2020 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.

LVMWD 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 May 10, 2016. The draft 2020 UWMP will be available for review on the LVMWD website at the following link:

https://www.lvmwd.com/your-water/urban-water-management-plan

A public hearing to receive public comments and consider adoption of the 2020 UWMP will be held in May or June of 2021 at a regularly scheduled LVMWD Board Meeting. The exact day and time of the meeting will be announced on the above website link when the agenda has been finalized. All interested parties are invited to attend.

If you would like more information or have any questions, please contact Oliver Slosser, PE, at 818-585-7123 or via email at oslosser@lvmwd.com.

Regards,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
Phone: 818.251.2143 C: 818.585.7123
OSlosser@lvmwd.com

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MEMBER AGENCY OF THE
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Glen D. Peterson
MWD Representative

April 12, 2021

Attention:

Maureen Tamuri
Community Development Director
City of Calabasas
100 Civic Center Way
Calabasas, CA 91302

Dear Ms. Tamuri,

Reference: Las Virgenes Municipal Water District (LVMWD) 2020 Urban Water Management Plan and Water Shortage Contingency Plan (WSCP) Availability and Public Comment Period

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Regards,

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MEMBER AGENCY OF THE
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Glen D. Peterson
MWD Representative

April 12, 2021

Attention:

Kristine McCaffrey
Manager of Engineering
Calleguas Municipal Water District
2100 E. Olsen Road
Thousand Oaks, CA 91360-6800

Dear Ms. McCaffrey,

Reference: Las Virgenes Municipal Water District (LVMWD) 2020 Urban Water Management Plan and Water Shortage Contingency Plan (WSCP) Availability and Public Comment Period

Las Virgenes Municipal Water District (LVMWD) is currently updating its Urban Water Management Plan (UWMP) and preparing its 2020 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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MEMBER AGENCY OF THE
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Glen D. Peterson
MWD Representative

April 12, 2021

Attention:

Dirk Lovett
City Engineer
City of Hidden Hills
6165 Spring Valley Road
Hidden Hills, CA 91302

Dear Mr. Lovett,

Reference: Las Virgenes Municipal Water District (LVMWD) 2020 Urban Water Management Plan and Water Shortage Contingency Plan (WSCP) Availability and Public Comment Period

Las Virgenes Municipal Water District (LVMWD) is currently updating its Urban Water Management Plan (UWMP) and preparing its 2020 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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Calabasas, CA 91302
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MEMBER AGENCY OF THE
METROPOLITAN WATER
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Glen D. Peterson
MWD Representative

April 12, 2021

Attention:

Los Angeles County
Department of Regional Planning
Community Studies West
320 West Temple Street
Los Angeles, CA 90012

Reference: Las Virgenes Municipal Water District (LVMWD) 2020 Urban Water Management Plan and Water Shortage Contingency Plan (WSCP) Availability and Public Comment Period

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MEMBER AGENCY OF THE
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Glen D. Peterson
MWD Representative

April 12, 2021

Attention:

Rob DuBoux
Public Works Director/City Engineer
City of Malibu
23825 Stuart Ranch Road
Malibu, California 90265-4861

Dear Mr. DuBoux,

Reference: Las Virgenes Municipal Water District (LVMWD) 2020 Urban Water Management Plan and Water Shortage Contingency Plan (WSCP) Availability and Public Comment Period

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Regards,

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Las Virgenes Municipal Water District
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MEMBER AGENCY OF THE
METROPOLITAN WATER
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Glen D. Peterson
MWD Representative

April 12, 2021

Attention:

Edgar Fandialan
Senior Engineer
The Metropolitan Water District of Southern California
P.O. Box 54153
Los Angeles, CA 90054-0153

Dear Mr. Fandialan,

Reference: Las Virgenes Municipal Water District (LVMWD) 2020 Urban Water Management Plan and Water Shortage Contingency Plan (WSCP) Availability and Public Comment Period

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Regards,

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Senior Engineer
Las Virgenes Municipal Water District
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MEMBER AGENCY OF THE
METROPOLITAN WATER
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Glen D. Peterson
MWD Representative

April 12, 2021

Attention:

Mark Norris
District Manager
Triunfo Sanitation District
1001 Partridge Drive, Suite 150
Ventura, CA 93003-0704

Dear Mr. Norris,

Reference: Las Virgenes Municipal Water District (LVMWD) 2020 Urban Water Management Plan and Water Shortage Contingency Plan (WSCP) Availability and Public Comment Period

Las Virgenes Municipal Water District (LVMWD) is currently updating its Urban Water Management Plan (UWMP) and preparing its 2020 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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Las Virgenes Municipal Water District
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(818) 251-2300
Fax (818) 251-2309

RANCHO LAS VIRGENES
COMPOSTING FACILITY
(818) 251-2340
Fax (818) 251-2349

www.LVMWD.com

MEMBER AGENCY OF THE
METROPOLITAN WATER
DISTRICT
OF SOUTHERN CALIFORNIA

Glen D. Peterson
MWD Representative

April 12, 2021

Attention:

Scott Meckstroth
Deputy Director, Water and Sanitation Department
Public Works Ventura County
6767 Spring Road
P.O. Box 250
Moorpark, California 93020

Dear Mr. Meckstroth,

Reference: Las Virgenes Municipal Water District (LVMWD) 2020 Urban Water Management Plan and Water Shortage Contingency Plan (WSCP) Availability and Public Comment Period

Las Virgenes Municipal Water District (LVMWD) is currently updating its Urban Water Management Plan (UWMP) and preparing its 2020 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.

LVMWD 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 May 10, 2016. The draft 2020 UWMP will be available for review on the LVMWD website at the following link:

https://www.lvmwd.com/your-water/urban-water-management-plan

A public hearing to receive public comments and consider adoption of the 2020 UWMP will be held in May or June of 2021 at a regularly scheduled LVMWD Board Meeting. The exact day and time of the meeting will be announced on the above website link when the agenda has been finalized. All interested parties are invited to attend.

If you would like more information or have any questions, please contact Oliver Slosser, PE, at 818-585-7123 or via email at oslosser@lvmwd.com.

Regards,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
Phone: 818.251.2143 C: 818.585.7123
OSlosser@lvmwd.com

LAS VIRGENES MUNICIPAL WATER DISTRICT EST. 1958

Dedicated to Providing High-Quality Water Service in a Cost-Effective and Environmentally Sensitive Manner

OFFICERS

President
Jay Lewitt
Director, Division 5

Vice President
Leonard E. Polan
Director, Division 4

Secretary
Lee Renger
Director, Division 3

Treasurer
Lynda Lo-Hill
Director, Division 2

Charles P. Caspary
Director, Division 1

David W. Pedersen, P. E.
General Manager

W. Keith Lemieux
Counsel

HEADQUARTERS
4232 Las Virgenes Road
Calabasas, CA 91302
(818) 251-2100
Fax (818) 251-2109

WESTLAKE
FILTRATION PLANT
(818) 251-2370
Fax (818) 251-2379

TAPIA WATER
RECLAMATION FACILITY
(818) 251-2300
Fax (818) 251-2309

RANCHO LAS VIRGENES
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www.LVMWD.com

MEMBER AGENCY OF THE
METROPOLITAN WATER
DISTRICT
OF SOUTHERN CALIFORNIA

Glen D. Peterson
MWD Representative

April 12, 2021

Attention:

Ron Fuchiwaki
Director of Public Works
City of Simi Valley Waterworks District No. 8
Public Services Center
500 West Los Angeles Avenue
Simi Valley, CA 93065

Dear Mr. Fuchiwaki,

Reference: Las Virgenes Municipal Water District (LVMWD) 2020 Urban Water Management Plan and Water Shortage Contingency Plan (WSCP) Availability and Public Comment Period

Las Virgenes Municipal Water District (LVMWD) is currently updating its Urban Water Management Plan (UWMP) and preparing its 2020 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,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
Phone: 818.251.2143 C: 818.585.7123
OSlosser@lvmwd.com

LAS VIRGENES MUNICIPAL WATER DISTRICT EST. 1958

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www.LVMWD.com

MEMBER AGENCY OF THE
METROPOLITAN WATER
DISTRICT
OF SOUTHERN CALIFORNIA

Glen D. Peterson
MWD Representative

April 12, 2021

Attention:

Scott Wolfe
Planning Director
City of Westlake Village
31200 Oak Crest Drive
Westlake Village, CA 91361

Dear Mr. Wolfe,

Reference: Las Virgenes Municipal Water District (LVMWD) 2020 Urban Water Management Plan and Water Shortage Contingency Plan (WSCP) Availability and Public Comment Period

Las Virgenes Municipal Water District (LVMWD) is currently updating its Urban Water Management Plan (UWMP) and preparing its 2020 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.

LVMWD 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 May 10, 2016. The draft 2020 UWMP will be available for review on the LVMWD website at the following link:

https://www.lvmwd.com/your-water/urban-water-management-plan

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If you would like more information or have any questions, please contact Oliver Slosser, PE, at 818-585-7123 or via email at oslosser@lvmwd.com.

Regards,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
Phone: 818.251.2143 C: 818.585.7123
OSlosser@lvmwd.com

From: Slosser, Oliver
To: Roxanne Hughes; Tucker Graczyk
Cc: Glaeser, Autumn; Soldo, Stephanie
Subject: UWMP Notification Letter
Date: Wednesday, February 24, 2021 3:28:10 PM
Attachments: Planning Director-City of Westlake Village_Notification Letter_02172021.pdf

---

Hello Roxanne and Tucker,

Please see attached notification letter for the development of LVMWD's 2020 Urban Water Master Plan. I was not seeing a contact for Director of Planning on the WLV website; please let me know if there is someone at the City I should forward this email to directly. Thank you and speak to you soon.

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

From: Slosser, Oliver
To: Glaeser, Autumn
Subject: FW: LVMWD 2020 UWMP - Notice of Preparation
Date: Thursday, February 25, 2021 12:36:50 PM
Attachments: Dirk Lovett_City of Hidden Hills_Notification Letter_02172021.pdf

---

CC

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

From: Slosser, Oliver
Sent: Thursday, February 25, 2021 12:10 PM
To: Dirk Lovett <dirklovett@caa.inc>
Subject: LVMWD 2020 UWMP - Notice of Preparation

Hello Mr. Lovett,

My name is Oliver Slosser and I am the senior engineer with LVMWD. Please find attached LVMWD's notice of preparation for our 2020 Urban Water Management Plan. Please contact me for any questions or concerns. Thank you and have a great day.

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

From: Slosser, Oliver
To: Fandialan,Edgar P
Cc: Glaeser, Autumn
Subject: LVMWD 2020 UWMP - Notice of Preparation
Date: Thursday, February 25, 2021 12:33:24 PM
Attachments: Edgar Fandialan_Metropolitian Water District_Notification Letter_02172021.pdf

---

Hello Mr. Fandialan,

My name is Oliver Slosser and I am the senior engineer with LVMWD. Please find attached LVMWD's notice of preparation for our 2020 Urban Water Management Plan. Please contact me for any questions or concerns. Thank you and have a great day.

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

From: Slosser, Oliver
To: dhooper@ci.agoura-hills.ca.us
Cc: Glaeser, Autumn
Subject: LVMWD 2020 UWMP - Notice of Preparation
Date: Friday, February 26, 2021 9:17:58 AM
Attachments: Doug Hooper_City of Agoura Hills_Notification Letter_02172021.pdf

---

Hello Mr. Hooper,

My name is Oliver Slosser and I am the senior engineer with LVMWD. Please find attached LVMWD's notice of preparation for our 2020 Urban Water Management Plan. Please contact me for any questions or concerns. Thank you and have a great day.

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

From: Slosser, Oliver
To: mtamuri@cityofcalabasas.com
Cc: Glaeser, Autumn
Subject: LVMWD 2020 UWMP - Notice of Preparation
Date: Friday, February 26, 2021 9:29:03 AM
Attachments: Maureen Tamuri_City of Calabasas_Notification Letter_02172021.pdf

---

Hello Ms. Tamuri,

My name is Oliver Slosser and I am the senior engineer with LVMWD. Please find attached LVMWD's notice of preparation for our 2020 Urban Water Management Plan. Please contact me for any questions or concerns. Thank you and have a great day.

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

From: Slosser, Oliver
To: Kristine McCaffrey
Cc: Glaeser, Autumn
Subject: LVMWD 2020 UWMP - Notice of Preparation
Date: Friday, February 26, 2021 9:06:58 AM
Attachments: Kristine McCaffrey_Calleguas MWD_Notification Letter_02172021.pdf

---

Hello Ms. McCaffrey,

Please find attached LVMWD's notice of preparation for our 2020 Urban Water Management Plan. Please contact me for any questions or concerns. Thank you and have a great day.

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

From: Slosser, Oliver
To: zoningldcc@planning.lacounty.gov
Cc: Glaeser, Autumn
Subject: LVMWD 2020 UWMP - Notice of Preparation
Date: Friday, February 26, 2021 9:24:46 AM
Attachments: LA County Dept. of Regional Planning_Notification Letter_02172021.pdf

---

Hello,

My name is Oliver Slosser and I am the senior engineer with LVMWD. Please find attached LVMWD's notice of preparation for our 2020 Urban Water Management Plan. Please let me know if there is an individual's email to whom this should be forwarded to directly.

Please contact me for any questions or concerns. Thank you and have a great day.

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

From: Slosser, Oliver
To: publicworks@simivalley.org
Cc: Glaeser, Autumn
Subject: LVMWD 2020 UWMP - Notice of Preparation
Date: Friday, February 26, 2021 9:27:52 AM
Attachments: Ron Fuchiwaki_City of Simi Valley_Notification Letter_02172021.pdf

---

Hello,

Please find attached LVMWD's notice of preparation for our 2020 Urban Water Management Plan. Please contact me for any questions or concerns. Thank you and have a great day.

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

From: Slosser, Oliver
To: Marknorris@vrsd.com
Cc: Glaeser, Autumn
Subject: LVMWD 2020 UWMP - Notice of Preparation
Date: Friday, February 26, 2021 9:08:33 AM
Attachments: Mark Norris_Triunfo Sanitation District_Notification Letter_02172021.pdf

---

Hello Mr. Norris,

Please find attached LVMWD's notice of preparation for our 2020 Urban Water Management Plan. Please contact me for any questions or concerns. Thank you and have a great day.

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

From: Slosser, Oliver
To: Scott.Meckstroth@ventura.org
Cc: Glaeser, Autumn
Subject: LVMWD 2020 UWMP - Notice of Preparation
Date: Friday, February 26, 2021 9:09:56 AM
Attachments: Scott Meckstroth_Public Works Ventura County_Notification Letter_02172021.pdf

---

Hello Mr. Meckstroth,

My name is Oliver Slosser and I am the senior engineer with LVMWD. Please find attached LVMWD's notice of preparation for our 2020 Urban Water Management Plan. Please contact me for any questions or concerns. Thank you and have a great day.

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

From: Slosser, Oliver
To: RDuboux@malibucity.org
Cc: Glaeser, Autumn; RMollica@malibucity.org
Subject: LVMWD 2020 UWMP - Notice of Preparation
Date: Wednesday, March 10, 2021 9:50:57 AM
Attachments: Rob DuBoux-City of Malibu_Notification Letter_.pdf

---

Hello Mr. DuBoux,

My name is Oliver Slosser and I am the senior engineer with LVMWD. Please find attached LVMWD's notice of preparation for our 2020 Urban Water Management Plan. Please contact me for any questions or concerns. Thank you and have a great day.

Best,

Oliver Slosser, PE
Senior Engineer
Las Virgenes Municipal Water District
oslosser@lvmwd.com
(office) (818) 251-2143
(cell) (818) 585-7123
(fax) (818) 251-2159

Appendix B Public Notification

The Weekly Valley Vantage and Calabasas Enterprise

22025 Ventura Blvd. #303
Woodland Hills CA 91364
(818) 313-9545 / Fax (818) 302-1417

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA,
County of Los Angeles,

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party of or interested in the above-entitled matter. I am the principal clerk of the printer of the Valley Vantage, a newspaper of general circulation, printed and published weekly in the City of Los Angeles, County of Los Angeles, and which newspaper has been adjudged a newspaper of general circulation by the Superior court of the County of Los Angeles, State of California, under the date of March 25, 1953, Case Number SFC-858; that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit: 5-13, 20-21

I certify (or declare) under penalty of perjury that the foregoing is true and correct. Dated at Woodland Hills CA this 5-21-21

Kathleen Sterling, Publisher

NOTICE OF PUBLIC HEARING

Notice of Public Sale

Notice is hereby given that Golden State Storage intends to sell the personal Property described below to enforce a lien imposed on said property pursautn to Lien Sale per the California Self-Service Storage Facility Act (B&P Code Section 21700, et seq). Golden State Storage will sell items at www.storagetreasures.com by competitive bidding ending on May 27, 2021 at 10 am. The said property has been stored and is located at Golden State Storage, 21530 Golden Triangle Road, Santa Clarita CA 91350.

- Sonja Dunson-Kenmore refridge, Flatscreen TV, headboard/bedroom set, luggage, backpack, desk, floor lamp, broom, pottery, wood shelf, 3 bag of unknown, 1 box of unkown.

Purchases must be paid at the time of sale with Cash Only. All Sales are subject to Prior Cancellation. Sale rules and regulations are available at the time of sale. Company reserves the right to refuse any online bids.

Golden State Storage (480) 397-6503
Valley Vantage 5-13,20 - 2021

NOTICE OF PUBLIC HEARING
TO ADOPT 2020 URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN FOR LAS VIRGENES MUNICIPAL WATER DISTRICT

Pursuant to the California Water Code Section 10642 and Government Code Section 6066, the Board of Directors of the Las Virgenes Municipal Water District (LVMWD) will conduct a Public Hearing to take comments prior to adopting the updated 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP). The hearing will be conducted as part of the regularly scheduled LVMWD Board of Directors meeting on June 1, 2021, at 9:00 a.m., or as soon thereafter as the matter can be heard. The meeting will be accessible virtually; details for LVMWD Board Meetings access can be found here: https://www.lvmwd.com/LiveStream.

A copy of the draft 2020 UWMP and WSCP can be reviewed by visiting the LVMWD website at https://www.lvmwd.com/your-water/urban-water-management-plan/ and https://www.lvmwd.com/about-us/transparency/public-records/public-information-and-documents/. Any changes to the meeting date or time will also be posted to these locations. For questions or comments concerning the document, please contact Oliver Slosser, at 818.251.2143 or OSlosser@lvmwd.com. To submit written comments on the documents, please send to:

Oliver Slosser, PE, Senior Engineer
UWMP Project Manager
Las Virgenes Municipal Water District
4232 Las Virgenes Rd
Calabasas, CA 91302
Email: oslosser@lvmwd.com

BY ORDER OF THE BOARD OF DIRECTORS OF LAS VIRGENES MUNICIPAL WATER DISTRICT.

/s/ Lee Renger, Secretary of the Board

Dated: April 16, 2021
Calabasas Enterprise 5-13, 20 - 2021

Appendix C Adoption Resolution and Public Hearing Agenda

RESOLUTION NO. 2593

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE LAS VIRGENES MUNICIPAL WATER DISTRICT ADOPTING THE 2020 URBAN WATER MANAGEMENT PLAN

WHEREAS, Las Virgenes Municipal Water District has completed an update to its 2015 Urban Water Management Plan, including update of the Water Shortage Contingency Plan; and

WHEREAS, Las Virgenes Municipal Water District has conducted a public hearing to solicit community input regarding the plan,

NOW THEREFORE, BE IT RESOLVED by the Board of Directors of Las Virgenes Municipal Water District that the 2020 Urban Water Management Plan, Report #2805.00 is hereby adopted.

PASSED, APPROVED AND ADOPTED this 1st day of June 2021.

Jay Lewitt, President

ATTEST:

Lee Renger Secretary

(SEAL)

APPROVED AS TO FORM:

W. Keith Lemieux
District Counsel

LAS VIRGENES MUNICIPAL WATER DISTRICT

4232 Las Virgenes Road, Calabasas, CA 91302

AGENDA
REGULAR MEETING
June 1, 2021, 9:00 AM

Public Participation for Meetings of Las Virgenes Municipal Water District Board of Directors in Response to COVID-19

On March 4, 2020, Governor Newsom proclaimed a State of Emergency in California as a result of the threat of COVID-19. On March 17, 2020, Governor Newsom issued Executive Order N-29-20 (superseding the Brown Act-related provisions of Executive Order N-25-20 issued on March 12, 2020), which allows a local legislative body to hold public meetings via teleconferencing and to make public meetings accessible telephonically or otherwise electronically to all members of the public seeking to observe and to address the local legislative body. Pursuant to Executive Order N-29-20, please be advised that members of the Las Virgenes Municipal Water District Board of Directors will participate in meetings via teleconferencing.

PUBLIC PARTICIPATION: Pursuant to Executive Order N-29-20 and given the current health concerns, this meeting is being conducted via Zoom Webinar and all attendees are muted by default. To join via computer, please use the following Zoom Webinar ID:

Webinar ID: https://us06web.zoom.us/j/85653765538
To join by telephone, please dial (669) 900-6833 or (346) 248-7799 and enter Webinar ID: 856 5376 5538

For members of the public wishing to address the Board during Public Comment or during a specific agenda item, please press "Raise Hand" if you are joining via computer, or press *9 if you are joining via phone.

Members of the public can also access and request to speak at meetings live on-line, with audio and limited video, at www.LVMWD.com/LiveStream. In addition, members of the public can submit written comments electronically for consideration at www.LVMWD.com/LiveStream. To ensure distribution to the members of the Las Virgenes Municipal Water District Board of Directors prior to consideration of the agenda, please submit comments 24 hours prior to the day of the meeting. Those comments, as well as any comments received during the meeting, will be distributed to the members of the Board of Directors and will be made part of the official public record of the meeting. Contact Josie Guzman, Executive Assistant/Clerk of the Board, at (818) 251-2123 or jguzman@lvmwd.com with any questions.

ACCESSIBILITY: If requested, the agenda and backup materials will be made available in appropriate alternative formats to persons with a disability, as required by Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and the federal rules and regulations adopted in implementation thereof. Any person who requires a disability-related modification or accommodation, in order to observe and/or offer public comment may request such reasonable modification, accommodation, aid, or service by contacting the Executive Assistant/Clerk of the Board by telephone at (818) 251-2123 or via email to jguzman@lvmwd.com no later than 9:00 AM on the day before the scheduled meeting.

Members of the public wishing to address the Board of Directors are advised that a statement of Public Comment Protocols is available from the Clerk of the Board. Prior to speaking, each speaker is asked to review these protocols, complete a speakers' card, and hand it to the Clerk of the Board. Speakers will be recognized in the order the cards are received. A live webcast of the meeting will be available at LVMWD.com. Also, a web-based version of the speaker card is available for those who would like to submit written comments electronically or request to make public comment by telephone during the meeting.

The Public Comments agenda item is presented to allow the public to address the Board on matters not on the agenda. The public may also present comments on matters on the agenda; speakers for agendized items will be recognized at the time the item is called up for discussion.

Materials prepared by the District in connection with the subject matter on the agenda are available for public inspection at 4232 Las Virgenes Road, Calabasas, CA 91302. Materials prepared by the District and distributed to the Board during this meeting are available for public inspection at the meeting or as soon thereafter as possible. Materials presented to the Board by the public will be maintained as part of the records of these proceedings and are available upon request to the Clerk of the Board.

PLEDGE OF ALLEGIANCE

1 **CALL TO ORDER AND ROLL CALL**

2 **APPROVAL OF AGENDA**

3 **PUBLIC COMMENTS**

Members of the public may now address the Board of Directors **ON MATTERS NOT APPEARING ON THE AGENDA**, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2

4 **CONSENT CALENDAR**

Matters listed under the Consent Calendar are considered to be routine, non-controversial and normally approved with one motion. If discussion is requested by a member of the Board on any Consent Calendar item, or if a member of the public wishes to comment on an item, that item will be removed from the Consent Calendar for separate action.

A **List of Demands: June 1, 2021 (Pg. 6)**
Receive and File

B **Minutes: Regular Meeting of May 4, 2021 (Pg. 67)**
Approve

C **Directors' Per Diem: April 2021 (Pg. 76)**

Ratify

D **Water Supply Conditions Update (Pg. 83)**

Receive and File

E **Response to Coronavirus (COVID-19) Pandemic: Continuation of Emergency (Pg. 85)**

Approve the continuation of an emergency declaration for response to the coronavirus (COVID-19) pandemic.

F **Cloud Archive and Remote Disaster Recovery for JD Edwards (Pg. 87)**

Accept the proposal from Denovo Ventures, LLC, and authorize the General Manager to execute a three-year agreement, in the annual amount of $94,800, plus a one-time initial fee of $14,000, to provide cloud archive and remote disaster recovery services.

G **Stationary Emergency Generators for Critical Pump Stations Project: Approval of Scope Change No. 3 (Pg. 105)**

Authorize the General Manager to approve Scope Change No. 3, in the amount of $4,125, for Hamner and Jewell to provide additional property-related services for the Stationary Emergency Generators for Critical Pump Stations Project.

5 **ILLUSTRATIVE AND/OR VERBAL PRESENTATION AGENDA ITEMS**

A **MWD Representative Report (Pg. 114)**

B **Legislative and Regulatory Updates**

6 **TREASURER**

7 **ENGINEERING AND EXTERNAL AFFAIRS**

A **2020 Urban Water Management Plan and Water Shortage Contingency Plan: Public Hearing and Adoption (Pg. 119)**

Conduct a public hearing to accept comments on the 2020 Urban Water Management Plan and Water Shortage Continency Plan; and pass, approve and adopt proposed Resolution No. 2593, adopting the 2020 Urban Water Management Plan and Water Shortage Continency Plan.

RESOLUTION NO. 2593

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE LAS VIRGENES MUNICIPAL WATER DISTRICT ADOPTING THE 2020 URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN

(Reference is hereby made to Resolution No. 2593 on file in the District's Resolution Book and by this reference the same is incorporated herein.)

B **Relief to Specified Customers to Support Rebuilding of Homes**

Destroyed in Woolsey Fire: Extension of Time (Pg. 215)

Pass, approve and adopt proposed Resolution No. 2594, granting a one-year time extension for relief provided to specified customers to support rebuilding of homes destroyed by the Woolsey Fire.

RESOLUTION NO. 2594

A RESOLUTION OF THE BOARD OF DIRECTORS OF LAS VIRGENES MUNICIPAL WATER DISTRICT GRANTING AN EXTENSION OF TIME TO PROVIDE RELIEF TO SPECIFIED CUSTOMERS TO SUPPORT REBUILDING OF HOMES DESTROYED BY THE WOOSLEY FIRE

(Reference is hereby made to Resolution No. 2594 on file in the LVMWD's Resolution Book and by this reference the same is incorporated herein.)

C **Calleguas-Las Virgenes Interconnection Project: Approval of Scope Change No. 1 (Pg. 220)**

Authorize the General Manager to approve Scope Change No. 1, in the amount of $61,895, for Cannon Corp Engineering to provide additional construction management and inspection services for the Calleguas-Las Virgenes Interconnection Project.

8 **NON-ACTION ITEMS**

A **Organization Reports**

B **Director's Reports on Outside Meetings**

C **General Manager Reports**

(1) General Business

(2) Follow-Up Items

D **Director's Comments**

9 **FUTURE AGENDA ITEMS**

10 **PUBLIC COMMENTS**

Members of the public may now address the Board of Directors **ON MATTERS NOT APPEARING ON THE AGENDA**, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2

11 **CLOSED SESSION**

A **Conference with District Counsel – Existing Litigation (Government Code Section 54956.9(a)):**

San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.

12 OPEN SESSION AND ADJOURNMENT

Pursuant to Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and applicable federal rules and regulations, requests for a disability-related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting, should be made to the Executive Assistant/Clerk of the Board in advance of the meeting to ensure availability of the requested service or accommodation. Notices, agendas, and public documents related to the Board meetings can be made available in appropriate alternative format upon request.

Appendix D DWR Checklist

Appendix D UWMP Checklist *(DWR Appendix F)*

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 Las Virgenes Municipal Water District'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	Section8.5, 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

Appendix E Loss Calculator

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
\+ Click to add a comment

Water Audit Report for: Las Virgenes Municipal Water District (1910225)
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.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ----------> Pcnt: Value:

Volume from own sources:	n/a	0.000	acre-ft/yr						acre-ft/yr
Water imported:	6	19,318.450	acre-ft/yr	3					acre-ft/yr
Water exported:	n/a	0.000	acre-ft/yr						acre-ft/yr

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

WATER SUPPLIED: 19,318.450 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

Pcnt: Value:

Billed metered:	5	18,036.963	acre-ft/yr		
Billed unmetered:	n/a	0.000	acre-ft/yr		
Unbilled metered:	n/a	0.000	acre-ft/yr		
Unbilled unmetered:	5	48.296	acre-ft/yr		48.296 acre-ft/yr

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 18,085.259 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) 1,233.191 acre-ft/yr

Apparent Losses

Pcnt: Value:

Unauthorized consumption:	5	48.296	acre-ft/yr	0.25%	acre-ft/yr

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

Customer metering inaccuracies:	3	182.192	acre-ft/yr	1.00%	acre-ft/yr
Systematic data handling errors:	5	45.092	acre-ft/yr	0.25%	acre-ft/yr

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

Apparent Losses: 275.580 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 957.611 acre-ft/yr

WATER LOSSES: 1,233.191 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 1,281.487 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	7	405.4	miles
Number of active AND inactive service connections:	9	21,844	
Service connection density:		54	conn./mile main
Are customer meters typically located at the curbstop 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: 3 | 127.3 psi

COST DATA

Total annual cost of operating water system:	10	$32,109,782	$/Year
Customer retail unit cost (applied to Apparent Losses):	4	$4.29	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	6	$802.69	$/acre-ft

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 57 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

WAS v5.0

? Click to access definition
\+ Click to add a comment

Water Audit Report for: Las Virgenes Municipal Water District (1910225)
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.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

					Pcnt:	Value:	
Volume from own sources:	n/a	0.000	acre-ft/yr				acre-ft/yr
Water imported:	7	19,264.300	acre-ft/yr	3		-210.860	acre-ft/yr
Water exported:	n/a	0.000	acre-ft/yr				acre-ft/yr

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

WATER SUPPLIED: 19,475.160 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	5	19,378.790	acre-ft/yr		
Billed unmetered:	n/a	0.000	acre-ft/yr		
Unbilled metered:	n/a	0.000	acre-ft/yr		
Unbilled unmetered:	5	48.688	acre-ft/yr		48.688	acre-ft/yr

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 19,427.478 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) 47.682 acre-ft/yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	5	48.688	acre-ft/yr	0.25%		acre-ft/yr

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

Customer metering inaccuracies:	3	195.745	acre-ft/yr	1.00%	acre-ft/yr
Systematic data handling errors:	5	48.447	acre-ft/yr	0.25%	acre-ft/yr

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

Apparent Losses: 292.880 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: -245.198 acre-ft/yr

WATER LOSSES: 47.682 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 96.370 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	7	413.0	miles
Number of active AND inactive service connections:	9	21,897	
Service connection density:		53	conn./mile main

Are customer meters typically located at the curbstop 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: 3 | 119.0 psi

COST DATA

Total annual cost of operating water system:	10	$31,512,397	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$3.31	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	6	$1,142.01	$/acre-ft

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: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

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Water Audit Report for: Las Virgenes Municipal Water District (1910225)
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.

<----------- Enter grading in column 'E' and 'J' ----------> | Master Meter and Supply Error Adjustments

WATER SUPPLIED

				Pcnt:	Value:	
Volume from own sources:	n/a	0.000	acre-ft/yr			acre-ft/yr
Water imported:	7	20,677.400	acre-ft/yr	9		acre-ft/yr
Water exported:	n/a	0.000	acre-ft/yr			acre-ft/yr
WATER SUPPLIED:		**20,677.400**	acre-ft/yr			

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

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	5	20,039.280	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	n/a	0.000	acre-ft/yr			
Unbilled unmetered:	8	93.500	acre-ft/yr		93.500	acre-ft/yr
AUTHORIZED CONSUMPTION:		**20,132.780**	acre-ft/yr			

Use buttons to select percentage of water supplied **OR** value

WATER LOSSES (Water Supplied - Authorized Consumption) **544.620** acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:	5	51.694	acre-ft/yr	0.25%		acre-ft/yr

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

Customer metering inaccuracies:	3	202.417	acre-ft/yr	1.00%		acre-ft/yr
Systematic data handling errors:	5	50.098	acre-ft/yr	0.25%		acre-ft/yr

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

Apparent Losses: **304.209** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **240.411** acre-ft/yr

WATER LOSSES: **544.620** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **638.120** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	7	390.3	miles
Number of active AND inactive service connections:	9	20,214	
Service connection density:		52	conn./mile main

Are customer meters typically located at the curbstop 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 | 119.0 psi

COST DATA

Total annual cost of operating water system:	10	$35,166,942	$/Year
Customer retail unit cost (applied to Apparent Losses):	5	$4.29	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	5	$1,058.88	$/acre-ft

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 62 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

WAS v5.0

American Water Works Association.

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Water Audit Report for: Las Virgenes Municipal Water District (1910225)
Reporting Year: 2019 (1/2019 - 12/2019)

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

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	n/a	0.000	acre-ft/yr				acre-ft/yr
Water imported:	7	17,666.200	acre-ft/yr	9			acre-ft/yr
Water exported:	n/a	0.000	acre-ft/yr				acre-ft/yr

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

WATER SUPPLIED: 17,666.200 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons

				Pcnt:	Value:	
Billed metered:	5	17,184.870	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	n/a	0.000	acre-ft/yr			
Unbilled unmetered:	5	44.166	acre-ft/yr		44.166	acre-ft/yr

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 17,229.035 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) 437.165 acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:	5	44.166	acre-ft/yr	0.25%		acre-ft/yr

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

Customer metering inaccuracies:	3	173.585	acre-ft/yr	1.00%		acre-ft/yr
Systematic data handling errors:	5	42.962	acre-ft/yr	0.25%		acre-ft/yr

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

Apparent Losses: 260.712 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 176.452 acre-ft/yr

WATER LOSSES: 437.165 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 481.330 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	391.5	miles
Number of active AND inactive service connections:	9	19,847	
Service connection density:		51	conn./mile main

Are customer meters typically located at the curbstop 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	119.0	psi

COST DATA

Total annual cost of operating water system:	10	$33,240,917	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$4.03	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	6	$1,164.87	$/acre-ft

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 66 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

Appendix F SBx7-7 Gross Water Use Verification Form

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	30,479	Acre Feet
	2008 total volume of delivered recycled water	5,325	Acre Feet
	2008 recycled water as a percent of total deliveries	17%	**See Note 1**
	Number of years in baseline period[1, 2]	10	Years
	Year beginning baseline period range	1999	
	Year ending baseline period range[3]	2008	
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 10-15year 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)	
	1. Department of Finance (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2010 - 2020) when available
	2. Persons-per-Connection Method
	3. DWR Population Tool
	4. Other DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1999	64,771
Year 2	2000	65,641
Year 3	2001	65,888
Year 4	2002	66,135
Year 5	2003	66,384
Year 6	2004	66,633
Year 7	2005	66,883
Year 8	2006	67,135
Year 9	2007	67,387
Year 10	2008	67,640
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2004	66,633
Year 2	2005	66,883
Year 3	2006	67,135
Year 4	2007	67,387
Year 5	2008	67,640
2020 Compliance Year Population		
2020		72,602
NOTES:		

SB X7-7 Table 4-A: Volume Entering the Distribution System(s) Complete one table for each source.				
Name of Source	Las Virgenes Municipal Water District Potable Res			
This water source is:				
	The supplier's own water source			
	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional* *(+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1999	353		353
Year 2	2000	-		-
Year 3	2001	-		-
Year 4	2002	136		136
Year 5	2003	547		547
Year 6	2004	-		-
Year 7	2005	1,354		1,354
Year 8	2006	-		-
Year 9	2007	-		-
Year 10	2008	-		-
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	-		-
Year 2	2005	1,354		1,354
Year 3	2006	-		-
Year 4	2007	-		-
Year 5	2008	-		-
2020 Compliance Year - Water into Distribution System				
2020				-
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution	
Name of Source	Metrpopolitan Water District of Southern Californ
This water source is:	
	The supplier's own water source
	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999	21552		21,552
Year 2	2,000	21876		21,876
Year 3	2,001	20788		20,788
Year 4	2,002	23351		23,351
Year 5	2,003	21439		21,439
Year 6	2,004	23635		23,635
Year 7	2,005	21147		21,147
Year 8	2,006	23181		23,181
Year 9	2,007	25864		25,864
Year 10	2,008	24991		24,991
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004	23635		23,635
Year 2	2,005	21147		21,147
Year 3	2,006	23181		23,181
Year 4	2,007	25864		25,864
Year 5	2,008	24991		24,991
2020 Compliance Year - Water into Distribution System				
2020		20,392		20,392
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution	
Name of Source	Ventura County Waterworks Districts
This water source is:	
	The supplier's own water source
	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999	141.06		141
Year 2	2,000	143.99		144

Year 3	2,001	135.15		135
Year 4	2,002	159.66		160
Year 5	2,003	160.5		161
Year 6	2,004	155.47		155
Year 7	2,005	152.4		152
Year 8	2,006	152.8		153
Year 9	2,007	142.333333		142
Year 10	2,008	162.6		163
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004	155.47		155
Year 2	2,005	152.4		152
Year 3	2,006	152.8		153
Year 4	2,007	142.333333		142
Year 5	2,008	162.6		163
2020 Compliance Year - Water into Distribution System				
2020		141		141
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	City of Los Angeles			
This water source is:				
	The supplier's own water source			
	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0

Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020		284		284
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Source 5			
This water source is:				
	The supplier's own water source			
	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0

Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Source 6			
This water source is:				
	The supplier's own water source			
	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Source 7			
This water source is:				
	The supplier's own water source			
	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution	
Name of Source	Source 8
This water source is:	
	The supplier's own water source
	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution	
Name of Source	Source 9
This water source is:	
	The supplier's own water source
	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0

Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution			
Name of Source	Source 10		
This water source is:			
	The supplier's own water source		
	A purchased or imported source		
Baseline Year *Fm SB X7-7 Table 3*	Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System			
Year 1	1,999		0
Year 2	2,000		0
Year 3	2,001		0
Year 4	2,002		0
Year 5	2,003		0
Year 6	2,004		0
Year 7	2,005		0
Year 8	2,006		0
Year 9	2,007		0
Year 10	2,008		0

Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Source 11			
This water source is:				
	The supplier's own water source			
	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0

Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Source 12			
This water source is:				
	The supplier's own water source			
	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Source 13			
This water source is:				
	The supplier's own water source			
	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution	
Name of Source	Source 14
This water source is:	
	The supplier's own water source
	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution	
Name of Source	Source 15
This water source is:	
	The supplier's own water source
	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0

Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2020 Compliance Year - Water into Distribution System				
2020				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year *Fm SB X7-7 Table 3*		**Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**Deductions**					**Annual Gross Water Use**
			Exported Water	**Change in Dist. System Storage** (+/-)	**Indirect Recycled Water** *This column will remain blank until SB X7-7 Table 4-B is completed.*	**Water Delivered for Agricultural Use**	**Process Water** *This column will remain blank until SB X7-7 Table 4-D is completed.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1999	22,046			-		-	22,046
Year 2	2000	22,020			-		-	22,020
Year 3	2001	20,923			-		-	20,923
Year 4	2002	23,646			-		-	23,646
Year 5	2003	22,147			-		-	22,147
Year 6	2004	23,790			-		-	23,790
Year 7	2005	22,654			-		-	22,654
Year 8	2006	23,334			-		-	23,334
Year 9	2007	26,006			-		-	26,006
Year 10	2008	25,154			-		-	25,154
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**23,172**
5 Year Baseline - Gross Water Use								
Year 1	2004	23,790			-		-	23,790
Year 2	2005	22,654			-		-	22,654
Year 3	2006	23,334			-		-	23,334
Year 4	2007	26,006			-		-	26,006
Year 5	2008	25,154			-		-	25,154
5 year baseline average gross water use								**24,188**
2020 Compliance Year - Gross Water Use								
2020		20,817	-	2,386	-		-	**18,431**
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3								
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 *Fm SB X7-7 Table 3*		Surface Reservoir Augmentation					Groundwater Recharge			**Total Deductible Volume of Indirect Recycled Water Entering the Distribution System**
		Volume Discharged from Reservoir for Distribution System Delivery	Percent Recycled Water	Recycled Water Delivered to Treatment Plant	Transmission/ Treatment Loss	Recycled Volume Entering Distribution System from Surface Reservoir Augmentation	Recycled Water Pumped by Utility*	Transmission/ Treatment Losses	Recycled Volume Entering Distribution System from Groundwater Recharge	
10-15 Year Baseline - Indirect Recycled Water Use										
Year 1	1999			-		-			-	-
Year 2	2000			-		-			-	-
Year 3	2001			-		-			-	-
Year 4	2002			-		-			-	-
Year 5	2003			-		-			-	-
Year 6	2004			-		-			-	-
Year 7	2005			-		-			-	-
Year 8	2006			-		-			-	-
Year 9	2007			-		-			-	-
Year 10	2008			-		-			-	-
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			-		-			-	-
2020 Compliance - Indirect Recycled Water Use										
2020				-		-			-	-

**Suppliers will provide supplemental sheets to document the calculation for their input into "Recycled Water Pumped by Utility". The volume reported in this cell must be less than total groundwater pumped - See Methodology 1, Step 8, section 2.c.*

SB X7-7 Table 4-C.1: Process Water Deduction Eligibility					
Criteria 1 Industrial water use is equal to or greater than 12% of gross water use					
Baseline Year *Fm SB X7-7 Table 3*		Gross Water Use Without Process Water Deduction	Industrial Water Use	Percent Industrial Water	**Eligible for Exclusion Y/N**
10 to 15 Year Baseline - Process Water Deduction Eligibility					
Year 1	1999	22,046		0%	NO
Year 2	2000	22,020		0%	NO
Year 3	2001	20,923		0%	NO
Year 4	2002	23,646		0%	NO
Year 5	2003	22,147		0%	NO
Year 6	2004	23,790		0%	NO
Year 7	2005	22,654		0%	NO
Year 8	2006	23,334		0%	NO
Year 9	2007	26,006		0%	NO
Year 10	2008	25,154		0%	NO
Year 11	0	-			NO
Year 12	0	-			NO
Year 13	0	-			NO
Year 14	0	-			NO
Year 15	0	-			NO
5 Year Baseline - Process Water Deduction Eligibility					
Year 1	2004	23,790		0%	NO
Year 2	2005	22,654		0%	NO
Year 3	2006	23,334		0%	NO
Year 4	2007	26,006		0%	NO
Year 5	2008	25,154		0%	NO
2020 Compliance Year - Process Water Deduction Eligiblity					
2020		18,431		0%	NO
NOTES:					

SB X7-7 Table 4-C.2: Process Water Deduction Eligibility					
Criteria 2 Industrial water use is equal to or greater than 15 GPCD					
Baseline Year *Fm SB X7-7 Table 3*		Industrial Water Use	Population	Industrial GPCD	**Eligible for Exclusion Y/N**
10 to 15 Year Baseline - Process Water Deduction Eligibility					
Year 1	1999		64,771	-	NO
Year 2	2000		65,641	-	NO
Year 3	2001		65,888	-	NO
Year 4	2002		66,135	-	NO
Year 5	2003		66,384	-	NO
Year 6	2004		66,633	-	NO
Year 7	2005		66,883	-	NO
Year 8	2006		67,135	-	NO
Year 9	2007		67,387	-	NO
Year 10	2008		67,640	-	NO
Year 11	0		-		NO
Year 12	0		-		NO
Year 13	0		-		NO
Year 14	0		-		NO
Year 15	0		-		NO
5 Year Baseline - Process Water Deduction Eligibility					
Year 1	2004		66,633	-	NO
Year 2	2005		66,883	-	NO
Year 3	2006		67,135	-	NO
Year 4	2007		67,387	-	NO
Year 5	2008		67,640	-	NO
2020 Compliance Year - Process Water Deduction Eligibility					
2020			72,602	-	NO
NOTES:					

SB X7-7 Table 4-C.3: Process Water Deduction Eligibility							
Criteria 3 Non-industrial use is equal to or less than 120 GPCD							
Baseline Year *Fm SB X7-7 Table 3*		Gross Water Use Without Process Water Deduction *Fm SB X7-7 Table 4*	Industrial Water Use	Non-industrial Water Use	Population *Fm SB X7-7 Table 3*	Non-Industrial GPCD	**Eligible for Exclusion Y/N**
10 to 15 Year Baseline - Process Water Deduction Eligibility							
Year 1	1999	22,046		22,046	64,771	304	NO
Year 2	2000	22,020		22,020	65,641	299	NO
Year 3	2001	20,923		20,923	65,888	283	NO
Year 4	2002	23,646		23,646	66,135	319	NO
Year 5	2003	22,147		22,147	66,384	298	NO
Year 6	2004	23,790		23,790	66,633	319	NO
Year 7	2005	22,654		22,654	66,883	302	NO
Year 8	2006	23,334		23,334	67,135	310	NO
Year 9	2007	26,006		26,006	67,387	345	NO
Year 10	2008	25,154		25,154	67,640	332	NO
Year 11	0	-		-	-		NO
Year 12	0	-		-	-		NO
Year 13	0	-		-	-		NO
Year 14	0	-		-	-		NO
Year 15	0	-		-	-		NO
5 Year Baseline - Process Water Deduction Eligibility							
Year 1	2004	23,790		23,790	66,633	319	NO
Year 2	2005	22,654		22,654	66,883	302	NO
Year 3	2006	23,334		23,334	67,135	310	NO
Year 4	2007	26,006		26,006	67,387	345	NO
Year 5	2008	25,154		25,154	67,640	332	NO
2020 Compliance Year - Process Water Deduction Eligiblity							
2020		18,431		18,431	72,602	227	NO
NOTES:							

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

Criteria 4

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

SELECT ONE

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

1. IRWM DAC Mapping tool https://gis.water.ca.gov/app/dacs/

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

2. 2010 Median Income

California Median Household Income		Service Area Median Household Income	Percentage of Statewide Average	**Eligible for Exclusion? Y/N**
2020 Compliance Year - Process Water Deduction Eligibility				
2010	$60,883		0%	YES

NOTES:

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*						
Name of Industrial Customer		*Industrial Customer 1*				
Baseline Year *Fm SB X7-7 Table 3*		Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
10 to 15 Year Baseline - Process Water Deduction						
Year 1	1999					-
Year 2	2000					-
Year 3	2001					-
Year 4	2002					-
Year 5	2003					-
Year 6	2004					-
Year 7	2005					-
Year 8	2006					-
Year 9	2007					-
Year 10	2008					-
Year 11	0					-
Year 12	0					-
Year 13	0					-
Year 14	0					-
Year 15	0					-
5 Year Baseline - Process Water Deduction						
Year 1	2004					-
Year 2	2005					-
Year 3	2006					-
Year 4	2007					-
Year 5	2008					-
2020 Compliance Year - Process Water Deduction						
2020						-
NOTES:						

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*						
Name of Industrial Customer		*Industrial Customer 2*				
Baseline Year *Fm SB X7-7 Table 3*		Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer

10 to 15 Year Baseline - Process Water Deduction						
Year 1	1999					-
Year 2	2000					-
Year 3	2001					-
Year 4	2002					-
Year 5	2003					-
Year 6	2004					-
Year 7	2005					-
Year 8	2006					-
Year 9	2007					-
Year 10	2008					-
Year 11	0					-
Year 12	0					-
Year 13	0					-
Year 14	0					-
Year 15	0					-
5 Year Baseline - Process Water Deduction						
Year 1	2004					-
Year 2	2005					-
Year 3	2006					-
Year 4	2007					-
Year 5	2008					-
2020 Compliance Year - Process Water Deduction						
2020						-
NOTES:						

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*

Name of Industrial Customer		*Industrial Customer 3*			
Baseline Year *Fm SB X7-7 Table 3*	Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
10 to 15 Year Baseline - Process Water Deduction					
Year 1	1999				-
Year 2	2000				-
Year 3	2001				-
Year 4	2002				-
Year 5	2003				-
Year 6	2004				-
Year 7	2005				-
Year 8	2006				-
Year 9	2007				-

Year 10	2008					-
Year 11	0					-
Year 12	0					-
Year 13	0					-
Year 14	0					-
Year 15	0					-
5 Year Baseline - Process Water Deduction						
Year 1	2004					-
Year 2	2005					-
Year 3	2006					-
Year 4	2007					-
Year 5	2008					-
2020 Compliance Year - Process Water Deduction						
2020						-
NOTES:						

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*

Name of Industrial Customer		*Industrial Customer 4*			
Baseline Year *Fm SB X7-7 Table 3*	Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
10 to 15 Year Baseline - Process Water Deduction					
Year 1	1999				-
Year 2	2000				-
Year 3	2001				-
Year 4	2002				-
Year 5	2003				-
Year 6	2004				-
Year 7	2005				-
Year 8	2006				-
Year 9	2007				-
Year 10	2008				-
Year 11	0				-
Year 12	0				-
Year 13	0				-
Year 14	0				-
Year 15	0				-
5 Year Baseline - Process Water Deduction					
Year 1	2004				-
Year 2	2005				-
Year 3	2006				-

Year 4	2007					-
Year 5	2008					-
2020 Compliance Year - Process Water Deduction						
2020						-

NOTES:

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*

Name of Industrial Customer		*Industrial Customer 5*				
Baseline Year *Fm SB X7-7 Table 3*		Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
10 to 15 Year Baseline - Process Water Deduction						
Year 1	1999					-
Year 2	2000					-
Year 3	2001					-
Year 4	2002					-
Year 5	2003					-
Year 6	2004					-
Year 7	2005					-
Year 8	2006					-
Year 9	2007					-
Year 10	2008					-
Year 11	0					-
Year 12	0					-
Year 13	0					-
Year 14	0					-
Year 15	0					-
5 Year Baseline - Process Water Deduction						
Year 1	2004					-
Year 2	2005					-
Year 3	2006					-
Year 4	2007					-
Year 5	2008					-
2020 Compliance Year - Process Water Deduction						
2020						-

NOTES:

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*

Name of Industrial Customer	*Industrial Customer 6*

Baseline Year *Fm SB X7-7 Table 3*		Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
10 to 15 Year Baseline - Process Water Deduction						
Year 1	1999					-
Year 2	2000					-
Year 3	2001					-
Year 4	2002					-
Year 5	2003					-
Year 6	2004					-
Year 7	2005					-
Year 8	2006					-
Year 9	2007					-
Year 10	2008					-
Year 11	0					-
Year 12	0					-
Year 13	0					-
Year 14	0					-
Year 15	0					-
5 Year Baseline - Process Water Deduction						
Year 1	2004					-
Year 2	2005					-
Year 3	2006					-
Year 4	2007					-
Year 5	2008					-
2020 Compliance Year - Process Water Deduction						
2020						-
NOTES:						

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*						
Name of Industrial Customer		*Industrial Customer 7*				
Baseline Year *Fm SB X7-7 Table 3*		Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
10 to 15 Year Baseline - Process Water Deduction						
Year 1	1999					-
Year 2	2000					-

Year 3	2001					-
Year 4	2002					-
Year 5	2003					-
Year 6	2004					-
Year 7	2005					-
Year 8	2006					-
Year 9	2007					-
Year 10	2008					-
Year 11	0					-
Year 12	0					-
Year 13	0					-
Year 14	0					-
Year 15	0					-
5 Year Baseline - Process Water Deduction						
Year 1	2004					-
Year 2	2005					-
Year 3	2006					-
Year 4	2007					-
Year 5	2008					-
2020 Compliance Year - Process Water Deduction						
2020						-

NOTES:

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*

Name of Industrial Customer		*Industrial Customer 8*			
Baseline Year *Fm SB X7-7 Table 3*	Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
10 to 15 Year Baseline - Process Water Deduction					
Year 1	1999				-
Year 2	2000				-
Year 3	2001				-
Year 4	2002				-
Year 5	2003				-
Year 6	2004				-
Year 7	2005				-
Year 8	2006				-
Year 9	2007				-
Year 10	2008				-
Year 11	0				-
Year 12	0				-

Year 13	0					-
Year 14	0					-
Year 15	0					-
5 Year Baseline - Process Water Deduction						
Year 1	2004					-
Year 2	2005					-
Year 3	2006					-
Year 4	2007					-
Year 5	2008					-
2020 Compliance Year - Process Water Deduction						
2020						-
NOTES:						

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*

Name of Industrial Customer		*Industrial Customer 9*				
Baseline Year *Fm SB X7-7 Table 3*		Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
10 to 15 Year Baseline - Process Water Deduction						
Year 1	1999					-
Year 2	2000					-
Year 3	2001					-
Year 4	2002					-
Year 5	2003					-
Year 6	2004					-
Year 7	2005					-
Year 8	2006					-
Year 9	2007					-
Year 10	2008					-
Year 11	0					-
Year 12	0					-
Year 13	0					-
Year 14	0					-
Year 15	0					-
5 Year Baseline - Process Water Deduction						
Year 1	2004					-
Year 2	2005					-
Year 3	2006					-
Year 4	2007					-
Year 5	2008					-
2020 Compliance Year - Process Water Deduction						

2020					-

NOTES:

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*

Name of Industrial Customer		*Industrial Customer 10*				
Baseline Year *Fm SB X7-7 Table 3*		Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
10 to 15 Year Baseline - Process Water Deduction						
Year 1	1999					-
Year 2	2000					-
Year 3	2001					-
Year 4	2002					-
Year 5	2003					-
Year 6	2004					-
Year 7	2005					-
Year 8	2006					-
Year 9	2007					-
Year 10	2008					-
Year 11	0					-
Year 12	0					-
Year 13	0					-
Year 14	0					-
Year 15	0					-
5 Year Baseline - Process Water Deduction						
Year 1	2004					-
Year 2	2005					-
Year 3	2006					-
Year 4	2007					-
Year 5	2008					-
2020 Compliance Year - Process Water Deduction						
2020						-

NOTES:

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Annual Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1999	64,771	22,046	304
Year 2	2000	65,641	22,020	299
Year 3	2001	65,888	20,923	283
Year 4	2002	66,135	23,646	319
Year 5	2003	66,384	22,147	298
Year 6	2004	66,633	23,790	319
Year 7	2005	66,883	22,654	302
Year 8	2006	67,135	23,334	310
Year 9	2007	67,387	26,006	345
Year 10	2008	67,640	25,154	332
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**311**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2004	66,633	23,790	319
Year 2	2005	66,883	22,654	302
Year 3	2006	67,135	23,334	310
Year 4	2007	67,387	26,006	345
Year 5	2008	67,640	25,154	332
5 Year Average Baseline GPCD				**322**
2020 Compliance Year GPCD				
2020		72,602	18,431	**227**
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	311
5 Year Baseline GPCD	322
2020 Compliance Year GPCD	227
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
	Method 1	SB X7-7 Table 7A
	Method 2	SB X7-7 Tables 7B, 7C, and 7D *See UWMP DWR webpage or contact staff for these tables*
	Method 3	SB X7-7 Table 7-E
	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
311	**249**
NOTES:	

Appendix G MWD Reliability by Type of Year Tables

Table 2-4
Single Dry-Year
Supply Capability[1] and Projected Demands
Repeat of 1977 Hydrology
(Acre-feet per year)

Forecast Year	2025	2030	2035	2040	2045
Current Programs					
In-Region Supplies and Programs	875,000	877,000	876,000	876,000	874,000
California Aqueduct[2]	647,000	634,000	634,000	634,000	633,000
Colorado River Aqueduct					
Total Supply Available[3]	1,424,000	1,403,500	1,352,500	1,352,500	1,380,750
Aqueduct Capacity Limit[4]	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*
Colorado River Aqueduct Capability	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Capability of Current Programs	**2,772,000**	**2,761,000**	**2,760,000**	**2,760,000**	**2,757,000**
Demands					
Total Demands on Metropolitan	1,266,000	1,222,000	1,195,000	1,218,000	1,247,000
Exchange with SDCWA	278,000	278,000	278,000	278,000	278,000
Total Metropolitan Deliveries[5]	**1,544,000**	**1,500,000**	**1,473,000**	**1,496,000**	**1,525,000**
Surplus	**1,228,000**	**1,261,000**	**1,287,000**	**1,264,000**	**1,232,000**
Programs Under Development					
In-Region Supplies and Programs	0	0	0	0	0
California Aqueduct	0	0	0	0	0
Colorado River Aqueduct					
Total Supply Available[3]	0	0	0	0	0
Aqueduct Capacity Limit[4]	*0*	*0*	*0*	*0*	*0*
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**0**	**0**	**0**	**0**	**0**
Potential Surplus	**1,228,000**	**1,261,000**	**1,287,000**	**1,264,000**	**1,232,000**

[1] Represents Supply Capability for resource programs under listed year type.
[2] California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.
[3] Colorado River Aqueduct includes programs and Exchange with SDCWA conveyed by the aqueduct.
[4] Maximum CRA deliveries limited to 1.25 MAF including Exchange with SDCWA.
[5] Total demands are adjusted to include Exchange with SDCWA.

Table 2-5
Drought Lasting Five Consecutive Water Years
Supply Capability[1] and Projected Demands
Repeat of 1988-1992 Hydrology
(Acre-feet per year)

Forecast Year	2025	2030	2035	2040	2045
Current Programs					
In-Region Supplies and Programs	194,000	197,000	197,000	197,000	197,000
California Aqueduct[2]	734,800	772,000	794,000	816,000	792,000
Colorado River Aqueduct					
Total Supply Available[3]	1,410,000	1,403,500	1,403,500	1,365,000	1,380,750
Aqueduct Capacity Limit[4]	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*
Colorado River Aqueduct Capability	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Capability of Current Programs	**2,178,800**	**2,219,000**	**2,241,000**	**2,263,000**	**2,239,000**
Demands					
Total Demands on Metropolitan	1,314,000	1,292,000	1,259,000	1,261,000	1,286,000
Exchange with SDCWA	278,000	278,000	278,000	278,000	278,000
Total Metropolitan Deliveries[5]	**1,592,000**	**1,570,000**	**1,537,000**	**1,539,000**	**1,564,000**
Surplus	**586,800**	**649,000**	**704,000**	**724,000**	**675,000**
Programs Under Development					
In-Region Supplies and Programs	0	0	0	0	0
California Aqueduct	0	0	0	0	0
Colorado River Aqueduct					
Total Supply Available[3]	0	0	0	0	0
Aqueduct Capacity Limit[4]	*0*	*0*	*0*	*0*	*0*
Colorado River Aqueduct Capability	*0*	*0*	*0*	*0*	*0*
Capability of Proposed Programs	**0**	**0**	**0**	**0**	**0**
Potential Surplus	**586,800**	**649,000**	**704,000**	**724,000**	**675,000**

[1] Represents Supply Capability for resource programs under listed year type.

[2] California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.

[3] Colorado River Aqueduct includes programs and Exchange with SDCWA conveyed by the aqueduct.

[4] Maximum CRA deliveries limited to 1.25 MAF including Exchange with SDCWA.

[5] Total demands are adjusted to include Exchange with SDCWA.

Table 2-6
Normal Water Year
Supply Capability[1] and Projected Demands
Average of 1922-2017 Hydrologies
(Acre-feet per year)

Forecast Year	2025	2030	2035	2040	2045
Current Programs					
In-Region Supplies and Programs	875,000	877,000	876,000	876,000	874,000
California Aqueduct[2]	1,774,000	1,766,000	1,764,000	1,762,000	1,761,000
Colorado River Aqueduct					
Total Supply Available[3]	1,453,000	1,390,500	1,390,500	1,339,500	1,367,750
Aqueduct Capacity Limit[4]	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*	*1,250,000*
Colorado River Aqueduct Capability	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Capability of Current Programs	**3,899,000**	**3,893,000**	**3,890,000**	**3,888,000**	**3,885,000**
Demands					
Total Demands on Metropolitan	1,149,000	1,110,000	1,084,000	1,100,000	1,125,000
Exchange with SDCWA	278,000	278,000	278,000	278,000	278,000
Total Metropolitan Deliveries[5]	**1,427,000**	**1,388,000**	**1,362,000**	**1,378,000**	**1,403,000**
Surplus	**2,472,000**	**2,505,000**	**2,528,000**	**2,510,000**	**2,482,000**
Programs Under Development					
In-Region Supplies and Programs	0	0	0	0	0
California Aqueduct	13,000	13,000	13,000	13,000	13,000
Colorado River Aqueduct					
Total Supply Available[3]	0	0	0	0	0
Aqueduct Capacity Limit[4]	*0*	*0*	*0*	*0*	*0*
Colorado River Aqueduct Capability	0	0	0	0	0
Capability of Proposed Programs	**13,000**	**13,000**	**13,000**	**13,000**	**13,000**
Potential Surplus	**2,485,000**	**2,518,000**	**2,541,000**	**2,523,000**	**2,495,000**

[1] Represents Supply Capability for resource programs under listed year type.

[2] California Aqueduct includes Central Valley transfers and storage program supplies conveyed by the aqueduct.

[3] Colorado River Aqueduct includes programs and Exchange with SDCWA conveyed by the aqueduct.

[4] Maximum CRA deliveries limited to 1.25 MAF including Exchange with SDCWA.

[5] Total demands are adjusted to include Exchange with SDCWA.

Appendix H Water Shortage Contingency Plan

Water Shortage Contingency Plan

Final Draft

June 1, 2021

Prepared for:

Las Virgenes Municipal Water District

Prepared by:

Stantec Consulting Services Inc.

As part of the Urban Water Management Plan (UWMP), Water Code Section 10632 requires Suppliers to prepare and adopt a Water Shortage Contingency Plan (WSCP). The Las Virgenes Municipal Water District (LVMWD) WSCP aligns with the Metropolitan Water District of Southern California (MWD) WSCP to ensure continuity, collaboration, and efficiency. The WSCP also draws upon lessons learned from the 2012-2016 drought, California's driest period on record. The following discussion presents the various stages and basis for implementation.

Water Supply Reliability Analysis

The primary source of water supply for LVMWD has been water imported from MWD. 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, LVMWD supplied a total of 20,533 AF from imported water purchased from MWD, which was 78 percent of the total water supply including recycled water. Groundwater and recycled water are discussed further in the UWMP Chapter 4.

Annual Water Supply and Demand Assessment Procedures

As an urban water supplier, LVMWD must prepare and submit an Annual Water Supply and Demand Assessment (Annual Assessment). The following information provides the procedures LVMWD will undertake to complete and approve the Annual Assessment.

Decision-Making Process

MWD will prepare their Annual Assessment by June of each year and present to their Board of Director's. This presentation will also include appropriate triggers for recommendations regarding specific shortage response actions as a result of the assessment. LVMWD will utilize the information provided by MWD to prepare their Annual Assessment to be presented to LVMWD's Board of Directors for approval and submission to DWR by July 1.

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

LVMWD will utilize the MWD Annual Assessment process and monthly Water Surplus and Drought Management reporting to evaluate their annual assessment for imported water supplies. MWD will monitor emerging supply and demand conditions throughout the year and take appropriate actions consistent with the flexibility and adaptability inherent to the WSCP.

Water Supply

LVMWD receives approximately 78 percent of their water supply from MWD. LVMWD will rely upon MWD's evaluation of water supply sources as part of their annual water supply and demand assessment procedures for imported water supplies.

Unconstrained Customer Demand

LVMWD will need to evaluate expected water needs for the coming year or “unconstrained demand” per the Water Code Section 10632. It is anticipated customer water use will be evaluated based on billing records as used in the UWMP Chapter 4 analysis.

Planned Water Use for Current Year Considering Dry Subsequent Year

LVMWD will evaluate anticipated supplies for the coming year, while anticipating that the following year will be dry. LVMWD will continue to review MWD’s planned water supplies for making decisions involving water shortage responses.

Infrastructure Consideration

Throughout each year, LVMWD and MWD regularly carry out preventive and corrective maintenance of facilities. MWD plans and performs shutdowns to inspect and repair pipelines and facilities and support capital improvement projects. These shutdowns involve a high level of planning and coordination within MWD, as well as with member agencies, other affected organizations, contractors, and the community. For LVMWD planned outages, they will bring Westlake Filtration Plant online to supply the west end of the District’s service area and connect to LADWP (Kittridge + Germain) to supply the east end during planned maintenance periods.

Six Standard Water Shortage Stages

As required by California Water Code (CWC) §10632(a)(3)(A), the WSCP is framed around six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers’ water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

In 2016, LVMWD created a WSCP that established four stages of escalating response to a water shortage caused by droughts and/or emergencies. Each stage may be triggered by a declaration from federal or state authorities, MWD, or LVMWD to address events that result in a water shortage. The stages and description are summarized in Table 1 and matched to the six standard UWMP shortage levels.

Table 1. Water Shortage Contingency Plan Comparison

Shortage Level	Percent Shortage Range
1	Up to 10%
2	Up to 20%
3	Up to 30%
4	Up to 40%
5	Up to 50%
6	>50%

Shortage Level	Percent Supply Reduction	Water Supply Condition
1 Water Shortage Alert	0 to 10%	Stage 1 is a condition resulting in a 0 to 10% water shortage necessitating a voluntary water use reduction. The District will initiate a public information campaign to increase awareness of water conservation measures specified in the Administrative Code Section 3-4.404. Customers are expected to perform voluntary water use reductions and adhere to on-going water conservation measures.
2 Water Shortage Warning	10-20%	Stage 2 is a condition resulting in a 10 to 20% water shortage necessitating a higher level of voluntary water use reduction. The District will expand the public information campaign and step up enforcement of water conservation measures. Customers are expected to re-double voluntary water use reductions and strictly adhere to water conservation measures
3 Water Shortage Emergency	20-50%	Stage 3 is a condition resulting in a 20 to 50% water shortage necessitating mandatory water use reductions. Depending on the severity of the shortage, the District will intensify the public information campaign and expand enforcement of water conservation measures. Additionally, the Board will determine the appropriate drought factor for water budgets if necessary.
4 Critical Water Shortage Emergency	>50%	Stage 4 is a condition resulting in a 50% or higher water shortage necessitating prohibition of outdoor water use for irrigation, pools and fountains. The District will implement crisis communications and activate its Emergency Operations Center. Customers shall be required to terminate all outdoor use except as necessary to protect public health and safety. Additionally, the Board will determine reduction in indoor water budgets if necessary.

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 shortage response actions will align with and are in part dictated by MWD. Table 2 below provides a summary of the shortage stage and the suite of response actions MWD and LVMWD may take.

Table 2. Shortage Stages and Response Actions

Shortage Stage	Shortage Percentage	Response Actions		
		Trigger	**Actions**	**Shortage Met**
1	Up to 10%	• Federal, state or local disaster declaration that may impact water supplies • State or MWD declaration due to drought or system maintenance • LVMWD Board of Directors determination • Unplanned LVMWD water system maintenance	**MWD** • Take from storage • Execute Flexible Supplies • Implement Water Supply Allocation Plan (WSAP) **LVMWD** • Initiate public information campaign with large water users, cities, and County • Commence enforcement of conservation measures	**MWD** • 0 to 100% met by storage • 0 to 100% met by Flexible Supplies • 0 to 50% of total base demand met by WSAP implementation **LVMWD** • 0 to 20% met by demand reduction • 0 to 50% met by water shortage allocation
2	Up to 20%	See Stage 1 triggers. The difference is the severity and/or maintenance repair time.	**MWD** • Take from storage • Execute Flexible Supplies • Implement Water Supply Allocation Plan **LVMWD** • Initiate public information campaign with large water users, cities, and County • Commence enforcement of conservation measures	**MWD** • 0 to 100% met by storage • 0 to 100% met by Flexible Supplies • 0 to 50% of total base demand met by WSAP implementation **LVMWD** • 0 to 20% met by demand reduction • 0 to 50% met by water shortage allocation
3	Up to 50%	• Federal, state or local disaster declaration that may impact water supplies • State or MWD determination due to drought or significant system failure • State outdoor irrigation restriction; and/or • MWD Water Supply Allocation Plan (5-50% of baseline allocation) • LVMWD Board of Directors determination • Unplanned LVMWD water system failure or emergency (Westlake Filtration Plant, Dam and/or Backbone System)	**MWD** • Take from storage • Execute Flexible Supplies • Implement Water Supply Allocation Plan **LVMWD** • Take from storage • Intensify public information campaign • Expand enforcement of conservation measures • Implement State and MWD required reductions • Provide regular media, city councils, and County briefings • Activate emergency connections with mutual aid agencies	**MWD** • 0 to 100% met by storage • 0 to 100% met by Flexible Supplies • 0 to 50% of total base demand met by WSAP implementation **LVMWD** • 0 to 100% met by short-term storage (3 months max.) • 0 to 20% met by demand reduction • 0 to 50% met by water shortage allocation
4	>50%	• Federal, state or local disaster declaration that may impact water supplies • Sacramento to Delta/SWP failure • State or MWD determination due to drought or significant system failure • LVMWD Board of Directors determination • Natural or human-caused catastrophe disrupting delivery of water to, or within the service area • Severe LVMWD water system failure (Westlake Filtration Plant, Dam and Backbone System)	**MWD** • Take from storage • Execute Flexible Supplies • Implement Water Supply Allocation Plan **LVMWD** • Take from storage • Activate Emergency Operations Center and implement crisis plan • Implement State and MWD required reductions • Install flow restrictors on meters as necessary • Terminate potable water supplement to the recycled water system • Recall all temporary meters and activate water fill stations	**MWD** • 0 to 100% met by storage • 0 to 100% met by Flexible Supplies • 0 to 50% of total base demand met by WSAP implementation **LVMWD** • 0 to 100% met by short-term storage (3 months max.) • 0 to 20% met by demand reduction • 0 to 50% met by water shortage allocation

Demand Reduction

LVMWD implements many conservation programs and initiatives annually including public outreach. LVMWD's demand reduction actions are listed in Table 3 and discussed in more detail below. Taken collectively, LVMWD expects these demand reduction measures to reduce the shortage gap by 0 to 20 percent.

Landscape Demand Reductions

The LVMWD Board has adopted the following water conservation measures as it relates to landscape demand reduction:

- Irrigation is not allowed between the hours of 10 a.m. and 5 p.m.
- Irrigation may not occur during periods of rain or in the 48 hours following measurable rainfall.
- Irrigation may not run off the property into streets, gutters or onto adjacent properties.
- Using potable water to wash down sidewalks, parking areas and driveways is not permitted.
- A trigger nozzle is required on hoses used for home car washing.

These actions listed above are water use restrictions as of April 2021. All of these measures would be in effect under Stages 1 through 4. As the water shortage increases, so would LVMWD patrol and enforcement of these measures. There is one landscape measure that only applies to Stage 4 though and that is the prohibition of all landscape water use except in the case of public health and safety purposes.

Commercial Demand Reductions

The LVMWD Board has adopted the following water conservation measures as it relates to commercial demand reduction:

- Hotels and motels must give multi-night guests the option to retain towels and linens during their stay.
- Restaurants may only serve water upon request.

All of these measures would be in effect under Stages 1-4. As the water shortage increases, so would LVMWD patrol and enforcement of these measures.

Special Water Features Demand Reductions

The LVMWD Board has adopted a water conservation measure as it relates to special water features demand reductions: terminate filling or refilling of pools and fountains. The first measure only applies to Stage 4.

Other Demand Reductions

LVMWD's primary method for demand reduction is through a variety of water conservation programs such as the weather based irrigation controller giveaway program and the rain barrel giveaway program. Based on the LVMWD Comprehensive Water Conservation Plan Fiscal Years 2018-2020, LVMWD was able to report water savings of 34 percent when compared to water usages in 2013. More information on these programs can be found in UWMP Chapter 9 or on the District's website.

Table 3: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1 - 4	Landscape - Limit landscape irrigation to specific times	0-20%*	Between hours of 10 AM and 5 PM	Yes
1 - 4	Landscape - Restrict or prohibit runoff from landscape irrigation	0-20%*		Yes
1 - 4	Landscape – Irrigation may not occur during periods of rain or in the 48 hours following measurable rainfall	0-20%*		Yes
1 - 4	Landscape – Restrict potable water to wash off hard surfaces	0-20%*		Yes
1 - 4	Landscape – Trigger nozzle is required	0-20%*	For car washing	Yes
4	Landscape – Prohibit all landscape irrigation	0-20%*	Outdoor water use only allowed for public health and safety purposes	Yes
1 - 4	Commercial – Only serve water upon request	0-20%*		Yes
1 - 4	Commercial – Hotels & Motels must give option to refuse linen service	0-20%*		Yes
4	Other – Water feature or swimming pool restriction	0-20%*	Outdoor water use only allowed for public health and safety purposes	Yes
1-4	Other	0-20%*	Water conservation programs	No
NOTES: * When taken collectively, the demand reduction measures will reduce the shortage gap up to 20 percent. LVMWD has not assessed these actions on an individual basis but as a whole.				

Supply Augmentation

LVMWD has the following supply augmentation measures as listed in Table 4 and described below.

Table 4: Supply Augmentation Actions			
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference
3-4	Stored Emergency Supply	0 to 100%	Short-term action (3 month max.) from Las Virgenes Reservoir
NOTES: N/A			

Stored Emergency Supply

LVMWD can supply up to 100 percent of their customer demands from Las Virgenes Reservoir. However, this is a short-term action (a maximum of 3 months) and would only be used during a Stage 3 or 4 shortage.

Operational Changes

During all water shortage stages, LVMWD would decrease line flushing to reduce water demand. In addition, LVMWD would implement the following under a Stage 4 Critical Water Shortage Emergency:

- Terminate potable water supplement to the recycled water system
- Install flow restrictors on meters as necessary
- Recall all temporary meters and active water fill stations

Additional Mandatory Restrictions

LVMWD does not have additional mandatory restrictions outside of those listed in the Demand Reduction Measures section.

Emergency Response Plan

LVMWD maintains an active emergency preparedness program, last published in October 2019 and to be updated in summer 2021, that includes an emergency plan that will help manage the District's critical functions during any emergency and protect the safety of staff. The District will coordinate the emergency plan, function, and response with those responders from other public and private entities and organizations charged with emergency duties.

The Emergency Response Plan (ERP) defines an emergency and has plans, procedures, policies, and agreements for various emergencies. These include water contamination, power outage, earthquake, and water supply interruption, among others and may trigger a Level 4 Water Shortage. Metropolitan Water District of Southern California is a prime contact when issues of potable water quality are in question and

LVMWD can utilize their emergency intertie with them. In addition, MWD is the primary contact during a major emergency throughout Southern California. If the MWD intertie is not available, LVMWD has two interties with LADWP that can be used in emergency situations.

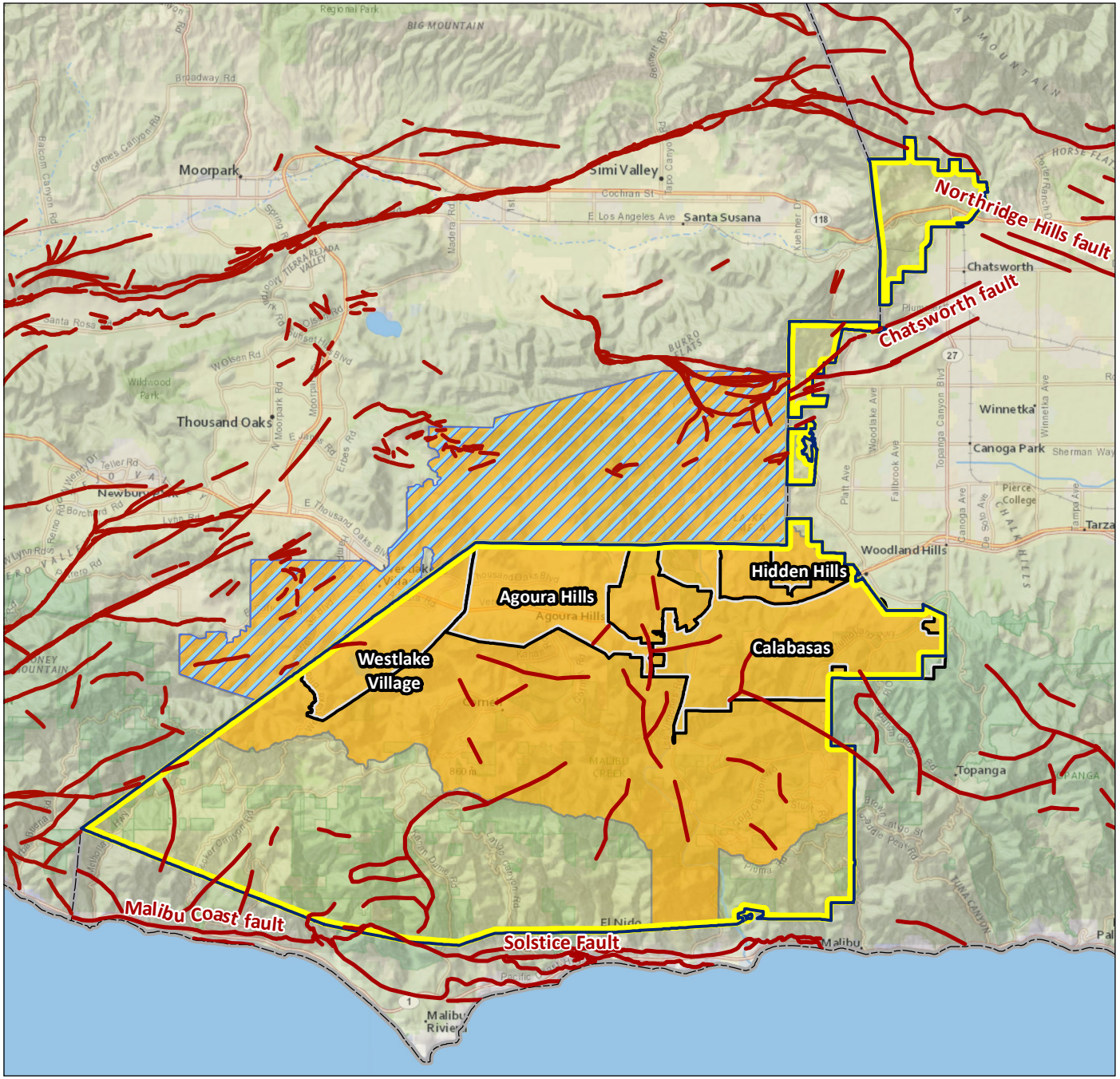
Seismic Risk Assessment and Mitigation Plan

The Malibu Coast fault system includes the Malibu Coast, Santa Monica, and Hollywood faults. The system begins in the Hollywood area, extends along the southern base of the Santa Monica Mountains, and passes offshore a few miles west of Point Dume.

The Malibu Coast fault system runs south of the LVMWD service area while the Northridge Hills fault and the Chatsworth fault run north of the LVMWD service area as shown in Figure 1. Being in close proximity to the Malibu Coast fault system, the Northridge Hills fault, and the Chatsworth fault makes LVMWD's facilities susceptible to a disruption in the event of an earthquake. LVMWD's facilities are prone to liquefaction but also surface faulting and landslides given their proximity to the Malibu Coast fault system, the Northridge Hills fault, and the Chatsworth fault as described in the 2019 Las Virgenes Municipal Water Hazard Mitigation Plan (see UWMP Appendix H).

Although LVMWD has a connection to the LADWP system used during scheduled MWD outages, following a major earthquake, the Las Virgenes Reservoir would be the only source of supply that LVMWD could rely on.

A catastrophic event, such as an earthquake damaging the aqueducts that transport imported water supplies could result in an unplanned interruption in MWD supplies, which LVMWD depends on. In recognition of the possibility of such unplanned events, MWD has invested in emergency storage facilities located within and outside of the region to facilitate continued supplies. In the event of a SWP outage, water stored in surface water reservoirs and groundwater basins under MWD's emergency storage program would be made available to meet demands by MWD member agencies, which includes LVMWD. In the case of extreme water shortages within the MWD service area, MWD will implement the Water Supply Allocation Plan (WSAP). The WSAP provides methodologies for allocating supply to each of MWD's retail and wholesale customers on an equitable needs-basis, and establishes surcharges for excess water use. The WSAP was originally adopted by the MWD Board in 2008 and was revised in 2014 and 2020. These efforts increase the reliability of supplies on a region-wide basis, including the LVMWD service area, even under unexpected circumstances, such as catastrophic supply interruption



Stantec

LAS VIRGENES MUNICIPAL WATER DISTRICT

- Major Fault Line
- LVMWD Potable Water Service Area
- LVWMD Sewer Service Area
- Triunfo Water and Sanitation District
- City Limits

N

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
Los Angeles, 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: Las Virgenes Municipal Water District
Project: Las Virgenes Municipal Water District 2020 UWMP
Report: 2020 Urban Water Management Plan

Figure No.
1-1

Title
Las Virgenes Municipal Water District Proximity to Fault Zones

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Communication Protocols

LVMWD has several communication tools and methods in place to engage customers, the public, elected officials, and other agencies. The following communication tools are used in varying degrees at all water storage levels:

- LVMWD website
- Bill stuffers
- Email listserv
- "The Current Flow" newsletter
- Conference presentations
- Local TV ads and programs
- Printed media (flyers, bulletins)
- Booths at local events
- Facility tours
- Newspaper ads and editorials
- Speakers Bureau
- K-12 classroom events
- Social medial (various)
- Everbridge alerts

LVMWD's website is one of the primary means of communication and is regularly updated. It includes information about billing and emergencies, as well as water conservation resources. Much of the website content is replicated on various social media platforms and printed media. Content for all external communication is approved by the Director of Engineering and External Affairs.

The District recognizes that not all customers use or have access to the internet and use alternative methods such as billing stuffers and newspaper ads to communicate with their customers. LVMWD has begun to use translated subtitles on some important video work to ensure that those messages can be understood by Spanish-only speakers.

In the event of an emergency, the District General Manager would contact LVMWD Directors and the Communications Manager to begin the emergency response plan, as previously discussed. The District would also use the Everbridge system to communicate to both internal staff and external customers.

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

Compliance and Enforcement

Section 3-4.406 of the LVMWD Code outlines enforcement actions for violations of water conservation measures. These actions are summarized in Table 5. LVMWD customers are encouraged to report water conservation violations through use of the LVMWD hotline.

Table 5: Penalties and Charges

Violation Level	Penalties and Charges
First Violation	The customer shall be notified in writing. The notice shall include a warning that further violations could result in stricter penalties.
Second Violation	A second violation within a twelve-month period is punishable by a fine of up to $100.
Third Violation	A third violation within a twelve-month period is punishable by a fine of up to $200.
Fourth Violation	A fourth violation within a twelve-month period is punishable by a fine up to $500.
Fifth Violation	A fifth violation within a twelve-month period may result in the installation of a flow restrictor or termination of service.

Legal Authorities

The Water Shortage Contingency Plan establishes four stages of escalating response to a water shortage caused by droughts and emergencies. Each stage may be triggered by a declaration from Federal or State authorities, MWD or the District to address events that result in a water shortage. The Administrative Code authorizes the General Manager to implement the appropriate actions necessary to achieve the reduction target. LVMWD adopted the WSCP with Resolution No. 2481 on January 12, 2016. This Resolution amended Section 3-4.407 of the LVMWD Code and repealed Resolution No. 2478.

LVMWD shall declare a water shortage emergency condition to prevail within the area served by LVMWD whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

MWD has stated its legal authorities within their 2020 UWMP.

Financial Consequences of WSCP

About 52 percent of LVMWD's fixed costs are covered by fixed revenues. As such, water sales do not make up the majority of the total operating revenue. LVMWD designed their rates around water budgets. This structure proved successful during the 2012-2016 drought since LVMWD was able to avoid both financial difficulties and imposing "drought rates". According to the LVMWD Fiscal Year 2020-22 Adopted Budget, reserves for the Potable Water Enterprise were rebuilt to meet all Board adopted Financial Policies. During the Fiscal Year 2020-21, LVMWD completed a new five-year rate study for implementation on March 1, 2021. Rates will be adjusted each January from 2022 through 2025.

Monitoring and Reporting

LVWMD will utilize their new SmartMeter/ AMI program to gather monthly data. LVMWD staff will then analyze the data and generate a report. This report will be included as part of the Annual Assessment.

WSCP Refinement Procedures

The WSCP will be reviewed as part of the Annual Assessment. The WSCP may also be reviewed in the event that MWD makes substantial changes to their WSCP. To update the WSCP, LVMWD staff would make the necessary changes and go through an internal review process. LVMWD would then go before the Board for a final review and adoption.

Special Water Feature Distinction

As discussed in the Demand Reduction section, LVMWD will impose restrictions on special water features under a Stage 4 shortage. At Stage 4, outdoor water use will only be allowed for public health and safety purposes.

Plan Adoption, Submittal, and Availability

The LVMWD WSCP was developed and included in the 2020 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 information provided is similar to the UWMP adoption, submittal and implementation process provided in UWMP Chapter 10. The WSCP may be periodically amended independently of the UWMP, as needed (see previous section for detail).

Appendix I LVMWD 2019 Hazard Mitigation Plan

Las Virgenes Municipal Water District Hazard Mitigation Plan

June 1, 2021

Las Virgenes Municipal Water District Hazard Mitigation Plan

The LVMWD Hazard Mitigation Plan can be found online at: https://www.lvmwd.com/home/showdocument?id=12044

Appendix J Reduced Delta Reliance Reporting

Appendix J Reduced Delta Reliance Reporting

1.0 Background

Under the Sacramento-San Joaquin Delta Reform Act of 2009, state and local public agencies proposing a covered action in the Delta, prior to initiating the implementation of that action, must prepare a written certification of consistency with detailed findings as to whether the covered action is consistent with applicable Delta Plan policies and submit that certification to the Delta Stewardship Council. Anyone may appeal a certification of consistency, and if the Delta Stewardship Council grants the appeal, the covered action may not be implemented until the agency proposing the covered action submits a revised certification of consistency, and either no appeal is filed, or the Delta Stewardship Council denies the subsequent appeal.

An urban water supplier that anticipates participating in or receiving water from a proposed covered action such as a multi-year water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Delta should provide information in their 2015 and 2020 Urban Water Management Plans (UWMPs) that can then be used in the covered action process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (WR P1).

WR P1 details what is needed for a covered action to demonstrate consistency with reduced reliance on the Delta and improved regional self-reliance. WR P1 subsection (a) states that:

(a) Water shall not be exported from, transferred through, or used in the Delta if all of the following apply:

1) One or more water suppliers that would receive water as a result of the export, transfer, or use have failed to adequately contribute to reduced reliance on the Delta and improved regional self-reliance consistent with all of the requirements listed in paragraph (1) of subsection (c);

2) That failure has significantly caused the need for the export, transfer, or use; and

3) The export, transfer, or use would have a significant adverse environmental impact in the Delta.

WR P1 subsection (c)(1) further defines what adequately contributing to reduced reliance on the Delta means in terms of (a)(1) above.

(c)(1) Water suppliers that have done all the following are contributing to reduced reliance on the Delta and improved regional self-reliance and are therefore consistent with this policy:

A. Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the California Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8; watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code section 1011(a).

B. Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and

C. Included in the Plan, commencing in 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance. The expected outcome for

measurable reduction in Delta reliance and improvement in regional self-reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used, from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code section 1011(a).

The analysis and documentation provided below include all of the elements described in WR P1(c)(1) that need to be included in a water supplier's UWMP to support a certification of consistency for a future covered action.

2.0 Summary of Expected Outcomes for Reduced Reliance on the Delta

As stated in WR P1(c)(1)(C), the policy states that, commencing in 2015, UWMPs include expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance. WR P1 further states that those outcomes shall be reported in the UWMP as the reduction in the amount of water used, or in the percentage of water used, from the Delta.

MWD reports the expected outcomes for reduced reliance on the Delta in its 2020 UWMP on a region-wide scale that includes its Member Agencies. From its 2010 baseline, both long-term Regional Self-Reliance and Reduced Reliance on Supplies from the Delta Watershed are expected to increase over time.

The following provides a summary of the near-term (2025) and long-term (2045) expected outcomes for the District Delta reliance and regional self-reliance. The results show the District is measurably reducing reliance on the Delta and improving regional self-reliance, both as an amount of water used and as a percentage of water used.

2.1 Expected Outcomes for Regional Self-Reliance

- Near-term (2025) – Normal water year regional self-reliance is expected to increase by 5,100 AF from the 2010 baseline; this represents an increase of almost 21 percent of 2025 normal water year retail demands (Table J-3)
- Long-term (2045) – Normal water year regional self-reliance is expected to increase by more than 6,100 AF from the 2010 baseline, this represents an increase of more than 20.6 percent of 2045 normal water year retail demands (Table J-3)

3.0 Demonstration of Reduced Reliance on the Delta

The methodology used to determine the District's Delta reliance and improved regional self-reliance is consistent with the approach detailed in DWR's UWMP Guidebook Appendix C, including the use of narrative justifications for the accounting of supplies and the documentation of specific data sources. Some of the key assumptions underlying these analyses include:

- All data were obtained from the current 2020 UWMP or previously adopted UWMPs and represent average or normal water year conditions.
- All analyses were conducted at the service area level, and all data reflect the total contributions of the District and in conjunction with the information provided by MWD.

- No projects or programs that are described in the UWMPs as "Projects Under Development" were included in the accounting of supplies.

3.1 Baseline Calculations

In order to compare current or future Delta water use, a supplier will need to calculate a baseline. The baseline is calculated in accordance with the approach detailed in DWR's UWMP Guidebook Appendix C.

The demand and water use efficiency data shown in Table J-1 were collected from the following sources:

- Baseline (2010) values – BWP's 2005 UWMP
- 2015 values – BWP's 2010 UWMP
- 2020 values – BWP's 2015 UWMP
- 2025-2045 values – BWP's 2020 UWMP

It should be noted that the results of this calculation differ from what the District calculated under the 2020 UWMP Chapter 3 pertaining to the Water Conservation Act of 2009 (SB X7-7) due to differing formulas.

Table J-1: Calculation of Water Use Efficiency

Service Area Water Use Efficiency Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	24,010	23,951	22,543	19,190	20,246	21,363	22,544	23,792
Non-Potable Water Demands								
Potable Service Area Demands with Water Use Efficiency Accounted For	24,010	23,951	22,543	19,190	20,246	21,363	22,544	23,792
Total Service Area Population	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045 (Optional)**
Service Area Population	75,625	77,285	71,768	76,769	81,175	85,833	89,269	94,392
Water Use Efficiency Since Baseline (Acre-Feet)	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045 (Optional)**
Per Capita Water Use (GPCD)	283	277	280	223	223	222	225	225
Change in Per Capita Water Use from Baseline (GPCD)		(7)	(3)	(60)	(61)	(61)	(58)	(58)
Estimated Water Use Efficiency Since Baseline		586	242	5,183	5,526	5,888	5,798	6,176

Table J-2: Calculation of Service Area Water Demands Without Water Use Efficiency

Total Service Area Water Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	24,010	23,951	22,543	19,190	20,246	21,363	22,544	23,792
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline		586	242	5,183	5,526	5,888	5,798	6,176
Service Area Water Demands without Water Use Efficiency Accounted For	24,010	24,537	22,785	24,373	25,772	27,251	28,342	29,968

4.0 Water Supplies Contributing to Regional Self-Reliance

For a covered action to demonstrate consistency with the Delta Plan, WR P1(c)(1) states that water suppliers must report the expected outcomes for measurable improvement in regional self-reliance. Table J-3 shows expected outcomes for supplies contributing to regional self-reliance both in amount and as a percentage. The numbers shown in Table J-3 represent efforts to improve regional self-reliance for the District's service area.

Supporting narratives and documentation for the all the data shown in Table J-3 are provided below:

Water Use Efficiency

The water use efficiency information shown in Table J-3 is taken directly from Table L-2.

Table J-3: Calculation of Supplies Contributing to Regional Self-Reliance

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Use Efficiency		586	242	5,183	5,526	5,888	5,798	6,176
Water Recycling								
Stormwater Capture and Use								
Advanced Water Technologies								
Conjunctive Use Projects								
Local and Regional Water Supply and Storage Projects								
Other Programs and Projects the Contribute to Regional Self-Reliance								
Water Supplies Contributing to Regional Self-Reliance	-	586	242	5,183	5,526	5,888	5,798	6,176
Service Area Water Demands without Water Use Efficiency (Acre-Feet)	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045 (Optional)**
Service Area Water Demands without Water Use Efficiency Accounted For	24,010	24,537	22,785	24,373	25,772	27,251	28,342	29,968
Change in Regional Self Reliance (Acre-Feet)	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045 (Optional)**
Water Supplies Contributing to Regional Self-Reliance	-	586	242	5,183	5,526	5,888	5,798	6,176
Change in Water Supplies Contributing to Regional Self-Reliance		586	242	5,183	5,526	5,888	5,798	6,176
Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)	**Baseline (2010)**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045 (Optional)**
Percent of Water Supplies Contributing to Regional Self-Reliance	0.0%	2.4%	1.1%	21.3%	21.4%	21.6%	20.5%	20.6%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance		2.4%	1.1%	21.3%	21.4%	21.6%	20.5%	20.6%

5.0 Infeasibility of Accounting Supplies from the Delta Watershed for Metropolitan's Member Agencies and their Customers

Metropolitan's service area, as a whole reduces reliance on the Delta through investments in non-Delta water supplies, local water supplies, and regional and local demand management measures. Metropolitan's member agencies coordinate reliance on the Delta through their membership in Metropolitan, a regional cooperative providing wholesale water service to its 26 member agencies. Accordingly, regional reliance on the Delta can only be measured regionally—not by individual Metropolitan member agencies and not by the customers of those member agencies.

Metropolitan's member agencies, and those agencies' customers, indirectly reduce reliance on the Delta through their collective efforts as a cooperative. Metropolitan's member agencies do not control the amount of Delta water they receive from Metropolitan. Metropolitan manages a statewide integrated conveyance system consisting of its participation in the State Water Project (SWP), its Colorado River Aqueduct (CRA) including Colorado River water resources, programs and water exchanges, and its regional storage portfolio. Along with the SWP, CRA, storage programs, and Metropolitan's conveyance and distribution facilities, demand management programs increase the future reliability of water resources for the region. In addition, demand management programs provide system-wide benefits by decreasing the demand for imported water, which helps to decrease the burden on the district's infrastructure and reduce system costs, and free up conveyance capacity to the benefit of all member agencies.

Metropolitan's costs are funded almost entirely from its service area, with the exception of grants and other assistance from government programs. Most of Metropolitan's revenues are collected directly from its member agencies. Properties within Metropolitan's service area pay a property tax that currently provides approximately 8 percent of the fiscal year 2021 annual budgeted revenues. The rest of Metropolitan's costs are funded through rates and charges paid by Metropolitan's member agencies for the wholesale services it provides to them.[1] Thus, Metropolitan's member agencies fund nearly all operations Metropolitan undertakes to reduce reliance on the Delta, including Colorado River Programs, storage facilities, Local Resources Programs and Conservation Programs within Metropolitan's service area.

Because of the integrated nature of Metropolitan's systems and operations, and the collective nature of Metropolitan's regional efforts, it is infeasible to quantify each of Metropolitan member agencies' individual reliance on the Delta. It is infeasible to attempt to segregate an entity and a system that were designed to work as an integrated regional cooperative.

In addition to the member agencies funding Metropolitan's regional efforts, they also invest in their own local programs to reduce their reliance on any imported water. Moreover, the customers of those member agencies may also invest in their own local programs to reduce water demand. However, to the extent those efforts result in reduction of demands on Metropolitan, that reduction does not equate to a like reduction of reliance on the Delta. Demands on Metropolitan are not commensurate with demands on the Delta because most of Metropolitan member agencies receive blended resources from Metropolitan as determined by

[1] A standby charge is collected from properties within the service areas of 21 of Metropolitan's 26 member agencies, ranging from $5 to $14.20 per acre annually, or per parcel if smaller than an acre. Standby charges go towards those member agencies' obligations to Metropolitan for the Readiness-to-Serve Charge. The total amount collected annually is approximately $43.8 million, approximately 2 percent of Metropolitan's fiscal year 2021 annual budgeted revenues.

Metropolitan—not the individual member agency—and for most member agencies, the blend varies from month-to-month and year-to-year due to hydrology, operational constraints, use of storage and other factors.

5.1 Colorado River Programs

As a regional cooperative of member agencies, Metropolitan invests in programs to ensure the continued reliability and sustainability of Colorado River supplies. Metropolitan was established to obtain an allotment of Colorado River water, and its first mission was to construct and operate the CRA. The CRA consists of five pumping plants, 450 miles of high voltage power lines, one electric substation, four regulating reservoirs, and 242 miles of aqueducts, siphons, canals, conduits and pipelines terminating at Lake Mathews in Riverside County. Metropolitan owns, operates, and manages the CRA. Metropolitan is responsible for operating, maintaining, rehabilitating, and repairing the CRA, and is responsible for obtaining and scheduling energy resources adequate to power pumps at the CRA's five pumping stations.

Colorado River supplies include Metropolitan's basic Colorado River apportionment, along with supplies that result from existing and committed programs, including supplies from the Imperial Irrigation District (IID)-Metropolitan Conservation Program, the implementation of the Quantification Settlement Agreement (QSA) and related agreements, and the exchange agreement with San Diego County Water Authority (SDCWA). The QSA established the baseline water use for each of the agreement parties and facilitates the transfer of water from agricultural agencies to urban uses. Since the QSA, additional programs have been implemented to increase Metropolitan's CRA supplies. These include the PVID Land Management, Crop Rotation, and Water Supply Program, as well as the Lower Colorado River Water Supply Project. The 2007 Interim Guidelines provided for the coordinated operation of Lake Powell and Lake Mead, as well as the Intentionally Created Surplus (ICS) program that allows Metropolitan to store water in Lake Mead.

5.2 Storage Investments/Facilities

Surface and groundwater storage are critical elements of Southern California's water resources strategy and help Metropolitan reduce its reliance on the Delta. Because California experiences dramatic swings in weather and hydrology, storage is important to regulate those swings and mitigate possible supply shortages. Surface and groundwater storage provide a means of storing water during normal and wet years for later use during dry years, when imported supplies are limited. The Metropolitan system, for purposes of meeting demands during times of shortage, regulating system flows, and ensuring system reliability in the event of a system outage, provides over 1,000,000 acre-feet of system storage capacity. Diamond Valley Lake provides 810,000 acre-feet of that storage capacity, effectively doubling Southern California's previous surface water storage capacity. Other existing imported water storage available to the region consists of Metropolitan's raw water reservoirs, a share of the SWP's raw water reservoirs in and near the service area, and the portion of the groundwater basins used for conjunctive-use storage.

Since the early twentieth century, DWR and Metropolitan have constructed surface water reservoirs to meet emergency, drought/seasonal, and regulatory water needs for Southern California. These reservoirs include Pyramid Lake, Castaic Lake, Elderberry Forebay, Silverwood Lake, Lake Perris, Lake Skinner, Lake Mathews, Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, Orange County Reservoir, and Metropolitan's Diamond

Valley Lake (DVL). Some reservoirs such as Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, and Orange County Reservoir, which have a total combined capacity of about 3,500 AF, are used solely for regulating purposes. The total gross storage capacity for the larger remaining reservoirs is 1,757,600 AF. However, not all of the gross storage capacity is available to Metropolitan; dead storage and storage allocated to others reduce the amount of storage that is available to Metropolitan to 1,665,200 AF.

Conjunctive use of the aquifers offers another important source of dry year supplies. Unused storage in Southern California groundwater basins can be used to optimize imported water supplies, and the development of groundwater storage projects allows effective management and regulation of the region's major imported supplies from the Colorado River and SWP. Over the years, Metropolitan has implemented conjunctive use through various programs in the service area; the following table lists the groundwater conjunctive use programs that have been developed in the region.

Program	Metropolitan Agreement Partners	Program Term	Max Storage AF	Dry-Year Yield AF/Yr
Long Beach Conjunctive Use Storage Project (Central Basin)	Long Beach	June 2002-2027	13,000	4,300
Foothill Area Groundwater Storage Program (Monkhill/ Raymond Basin)	Foothill MWD	February 2003-2028	9,000	3,000
Orange County Groundwater Conjunctive Use Program	MWDOC OCWD	June 2003-2028	66,000+	22,000
Chino Basin Conjunctive Use Programs	IEUA TVMWD Watermaster	June 2003-2028	100,000	33,000
Live Oak Basin Conjunctive Use Project (Six Basins)	TVMWD City of La Verne	October 2002-2027	3,000	1,000
City of Compton Conjunctive Use Project (Central Basin)	Compton	February 2005-2030	2,289	763
Long Beach Conjunctive Use Program Expansion in Lakewood (Central Basin)	Long Beach	July 2005-2030	3,600	1,200
Upper Claremont Basin Groundwater Storage Program (Six Basins)	TVMWD	Sept. 2005- 2030	3,000	1,000
Elsinore Basin Conjunctive Use Storage Program	Western MWD Elsinore Valley MWD	May 2008- 2033	12,000	4,000
TOTAL			**211,889**	**70,263**

5.3 Metropolitan Demand Management Programs

Demand management costs are Metropolitan's expenditures for funding local water resource development programs and water conservation programs. These Demand Management

Programs incentivize the development of local water supplies and the conservation of water to reduce the need to import water to deliver to Metropolitan's member agencies. These programs are implemented below the delivery points between Metropolitan's and its member agencies' distribution systems and, as such, do not add any water to Metropolitan's supplies. Rather, the effect of these downstream programs is to produce a local supply of water for the local agencies and to reduce demands by member agencies for water imported through Metropolitan's system. The following discussions outline how Metropolitan funds local resources and conservation programs for the benefit of all of its member agencies and the entire Metropolitan service area. Notably, the history of demand management by Metropolitan's member agencies and the local agencies that purchase water from Metropolitan's members has spanned more than four decades. The significant history of the programs is another reason it would be difficult to attempt to assign a portion of such funding to any one individual member agency.

Local Resources Programs

In 1982, Metropolitan began providing financial incentives to its member agencies to develop new local supplies to assist in meeting the region's water needs. Because of Metropolitan's regional distribution system, these programs benefit all member agencies regardless of project location because they help to increase regional water supply reliability, reduce demands for imported water supplies, decrease the burden on Metropolitan's infrastructure, reduce system costs and free up conveyance capacity to the benefit of all the agencies that rely on water from Metropolitan.

For example, the Groundwater Replenishment System (GWRS) operated by the Orange County Water District is the world's largest water purification system for indirect potable reuse. It was funded, in part, by Metropolitan's member agencies through the Local Resources Program. Annually, the GWRS produces approximately 103,000 acre-feet of reliable, locally controlled, drought-proof supply of high-quality water to recharge the Orange County Groundwater Basin and protect it from seawater intrusion. The GWRS is a premier example of a regional project that significantly reduced the need to utilize imported water for groundwater replenishment in Metropolitan's service area, increasing regional and local supply reliability and reducing the region's reliance on imported supplies, including supplies from the State Water Project.

Metropolitan's local resource programs have evolved through the years to better assist Metropolitan's member agencies in increasing local supply production. The following is a description and history of the local supply incentive programs.

Local Projects Program

In 1982, Metropolitan initiated the Local Projects Program (LPP), which provided funding to member agencies to facilitate the development of recycled water projects. Under this approach, Metropolitan contributed a negotiated up-front funding amount to help finance project capital costs. Participating member agencies were obligated to reimburse Metropolitan over time. In 1986, the LPP was revised, changing the up-front funding approach to an incentive-based approach. Metropolitan contributed an amount equal to the avoided State Water Project pumping costs for each acre-foot of recycled water delivered to end-use consumers. This funding incentive was based on the premise that local projects resulted in the reduction of water imported from the Delta and the associated pumping cost. The incentive amount varied from year to year depending on the actual variable power cost paid for State Water Project imports. In 1990, Metropolitan's Board increased the LPP contribution to a fixed rate of $154 per acre-foot, which was calculated based on Metropolitan's avoided capital and operational costs to convey, treat, and distribute water, and included considerations of reliability and service area demands.

Groundwater Recovery Program

The drought of the early 1990s sparked the need to develop additional local water resources, aside from recycled water, to meet regional demand and increase regional water supply reliability. In 1991, Metropolitan conducted the Brackish Groundwater Reclamation Study which determined that large amounts of degraded groundwater in the region were not being utilized. Subsequently, the Groundwater Recovery Program (GRP) was established to assist the recovery of otherwise unusable groundwater degraded by minerals and other contaminants, provide access to the storage assets of the degraded groundwater, and maintain the quality of groundwater resources by reducing the spread of degraded plumes.

Local Resources Program

In 1995, Metropolitan's Board adopted the Local Resources Program (LRP), which combined the LPP and GRP into one program. The Board allowed for existing LPP agreements with a fixed incentive rate to convert to the sliding scale up to $250 per acre-foot, similar to GRP incentive terms. Those agreements that were converted to LRP are known as "LRP Conversions."

Competitive Local Projects Program

In 1998, the Competitive Local Resources Program (Competitive Program) was established. The Competitive Program encouraged the development of recycled water and recovered groundwater through a process that emphasized cost-efficiency to Metropolitan, timing new production according to regional need while minimizing program administration cost. Under the Competitive Program, agencies requested an incentive rate up to $250 per acre-foot of production over 25 years under a Request for Proposals (RFP) for the development of up to 53,000 acre-feet per year of new water recycling and groundwater recovery projects. In 2003, a second RFP was issued for the development of an additional 65,000 acre-feet of new recycled water and recovered groundwater projects through the LRP.

Seawater Desalination Program

Metropolitan established the Seawater Desalination Program (SDP) in 2001 to provide financial incentives to member agencies for the development of seawater desalination projects. In 2014, seawater desalination projects became eligible for funding under the LRP, and the SDP was ended.

2007 Local Resources Program

In 2006, a task force comprised of member agency representatives was formed to identify and recommend program improvements to the LRP. As a result of the task force process, the 2007 LRP was established with a goal of 174,000 acre-feet per year of additional local water resource development. The new program allowed for an open application process and eliminated the previous competitive process. This program offered sliding scale incentives of up to $250 per acre-foot, calculated annually based on a member agency's actual local resource project costs exceeding Metropolitan's prevailing water rate.

2014 Local Resources Program

A series of workgroup meetings with member agencies was held to identify the reasons why there was a lack of new LRP applications coming into the program. The main constraint identified by the member agencies was that the $250 per acre-foot was not providing enough of an incentive for developing new projects due to higher construction costs to meet water quality requirements and to develop the infrastructure to reach end-use consumers located further from treatment plants. As a result, in 2014, the Board authorized an increase in the maximum incentive amount, provided alternative payment structures, included onsite retrofit costs and

reimbursable services as part of the LRP, and added eligibility for seawater desalination projects. The current LRP incentive payment options are structured as follows:

- Option 1 – Sliding scale incentive up to $340/AF for a 25-year agreement term
- Option 2 – Sliding scale incentive up to $475/AF for a 15-year agreement term
- Option 3 – Fixed incentive up to $305/AF for a 25-year agreement term

On-site Retrofit Programs

In 2014, Metropolitan's Board also approved the On-site Retrofit Pilot Program which provided financial incentives to public or private entities toward the cost of small-scale improvements to their existing irrigation and industrial systems to allow connection to existing recycled water pipelines. The On-site Retrofit Pilot Program helped reduce recycled water retrofit costs to the end-use consumer which is a key constraint that limited recycled water LRP projects from reaching full production capacity. The program incentive was equal to the actual eligible costs of the on-site retrofit, or $975 per acre-foot of up-front cost, which equates to $195 per acre-foot for an estimated five years of water savings ($195/AF x 5 years) multiplied by the average annual water use in previous three years, whichever is less. The Pilot Program lasted two years and was successful in meeting its goal of accelerating the use of recycled water.

In 2016, Metropolitan's Board authorized the On-site Retrofit Program (ORP), with an additional budget of $10 million. This program encompassed lessons learned from the Pilot Program and feedback from member agencies to make the program more streamlined and improve its efficiency. As of fiscal year 2019/20, the ORP has successfully converted 440 sites, increasing the use of recycled water by 12,691 acre-feet per year.

Stormwater Pilot Programs

In 2019, Metropolitan's Board authorized both the Stormwater for Direct Use Pilot Program and a Stormwater for Recharge Pilot Program to study the feasibility of reusing stormwater to help meet regional demands in Southern California. These pilot programs are intended to encourage the development, monitoring, and study of new and existing stormwater projects by providing financial incentives for their construction/retrofit and monitoring/reporting costs. These pilot programs will help evaluate the potential benefits delivered by stormwater capture projects and provide a basis for potential future funding approaches. Metropolitan's Board authorized a total of $12.5 million for the stormwater pilot programs ($5 million for the District Use Pilot and $7.5 million for the Recharge Pilot).

Current Status and Results of Metropolitan's Local Resource Programs

Today, nearly one-half of the total recycled water and groundwater recovery production in the region has been developed with an incentive from one or more of Metropolitan's local resource programs. During fiscal year 2020, Metropolitan provided about $13 million for production of 71,000 acre-feet of recycled water for non-potable and indirect potable uses. Metropolitan provided about $4 million to support projects that produced about 50,000 acre-feet of recovered groundwater for municipal use. Since 1982, Metropolitan has invested $680 million to fund 85 recycled water projects and 27 groundwater recovery projects that have produced a cumulative total of about 4 million acre-feet.

5.4 Conservation Programs

Metropolitan's regional conservation programs and approaches have a long history. Decades ago, Metropolitan recognized that demand management at the consumer level would be an important part of balancing regional supplies and demands. Water conservation efforts were

seen as a way to reduce the need for imported supplies and offset the need to transport or store additional water into or within the Metropolitan service area. The actual conservation of water takes place at the retail consumer level. Regional conservation approaches have proven to be effective at reaching retail consumers throughout Metropolitan's service area and successfully implementing water saving devices, programs and practices. Through the pooling of funding by Metropolitan's member agencies, Metropolitan is able to engage in regional campaigns with wide-reaching impact. Regional investments in demand management programs, of which conservation is a key part along with local supply programs, benefit all member agencies regardless of project location. These programs help to increase regional water supply reliability, reduce demands for imported water supplies, decrease the burden on Metropolitan's infrastructure, reduce system costs, and free up conveyance capacity to the benefit of all member agencies.

Incentive-Based Conservation Programs

Conservation Credits Program

In 1988, Metropolitan's Board approved the Water Conservation Credits Program (Credits Program). The Credits Program is similar in concept to the Local Projects Program (LPP). The purpose of the Credits Program is to encourage local water agencies to implement effective water conservation projects through the use of financial incentives. The Credits Program provides financial assistance for water conservation projects that reduce demands on Metropolitan's imported water supplies and require Metropolitan's assistance to be financially feasible.

Initially, the Credits Program provided 50 percent of a member agency's program cost, up to a maximum of $75 per acre-foot of estimated water savings. The $75 Base Conservation Rate was established based Metropolitan's avoided cost of pumping SWP supplies. The Base Conservation Rate has been revisited by Metropolitan's Board and revised twice since 1988, from $75 to $154 per acre-foot in 1990 and from $154 to $195 per acre-foot in 2005.

In fiscal year 2020 Metropolitan processed more than 30,400 rebate applications totaling $18.9 million.

Member Agency Administered Program

Some member agencies also have unique programs within their service areas that provide local rebates that may differ from Metropolitan's regional program. Metropolitan continues to support these local efforts through a member agency administered funding program that adheres to the same funding guidelines as the Credits Program. The Member Agency Administered Program allows member agencies to receive funding for local conservation efforts that supplement, but do not duplicate, the rebates offered through Metropolitan's regional rebate program.

Water Savings Incentive Program

There are numerous commercial entities and industries within Metropolitan's service area that pursue unique savings opportunities that do not fall within the general rebate programs that Metropolitan provides. In 2012, Metropolitan designed the Water Savings Incentive Program (WSIP) to target these unique commercial and industrial projects. In addition to rebates for devices, under this program, Metropolitan provides financial incentives to businesses and industries that created their own custom water efficiency projects. Qualifying custom projects can receive funding for permanent water efficiency changes that result in reduced potable demand.

Non-Incentive Conservation Programs

In addition to its incentive-based conservation programs, Metropolitan also undertakes additional efforts throughout its service area that help achieve water savings without the use of rebates. Metropolitan's non-incentive conservation efforts include:

- residential and professional water efficient landscape training classes
- water audits for large landscapes
- research, development and studies of new water saving technologies
- advertising and outreach campaigns
- community outreach and education programs
- advocacy for legislation, codes, and standards that lead to increased water savings

Current Status and Results of Metropolitan's Conservation Programs

Since 1990, Metropolitan has invested $824 million in conservation rebates that have resulted in a cumulative savings of 3.27 million acre-feet of water. These investments include $450 million in turf removal and other rebates during the last drought which resulted in 175 million square feet of lawn turf removed. During fiscal year 2020, 1.06 million acre-feet of water is estimated to have been conserved. This annual total includes Metropolitan's Conservation Credits Program; code-based conservation achieved through Metropolitan-sponsored legislation; building plumbing codes and ordinances; reduced consumption resulting from changes in water pricing; and pre-1990 device retrofits.

Infeasibility of Accounting Regional Investments in Reduced Reliance Below the Regional Level

The accounting of regional investments that contribute to reduced reliance on supplies from the Delta watershed is straightforward to calculate and report at the regional aggregate level. However, any similar accounting is infeasible for the individual member agencies or their customers. As described above, the region (through Metropolitan) makes significant investments in projects, programs and other resources that reduce reliance on the Delta. In fact, all of Metropolitan's investments in Colorado River supplies, groundwater and surface storage, local resources development and demand management measures that reduce reliance on the Delta are collectively funded by revenues generated from the member agencies through rates and charges.

Metropolitan's revenues cannot be matched to the demands or supply production history of an individual agency, or consistently across the agencies within the service area. Each project or program funded by the region has a different online date, useful life, incentive rate and structure, and production schedule. It is infeasible to account for all these things over the life of each project or program and provide a nexus to each member agency's contributions to Metropolitan's revenue stream over time. Accounting at the regional level allows for the incorporation of the local supplies and water use efficiency programs done by member agencies and their customers through both the regional programs and through their own specific local programs. As shown above, despite the infeasibility of accounting reduced Delta reliance below the regional level, Metropolitan's member agencies and their customers have together made substantial contributions to the region's reduced reliance.

5.5 References

http://www.mwdh2o.com/WhoWeAre/Board/Board-Meeting/Board%20Archives/2017/12-Dec/Reports/064863458.pdf

http://www.mwdh2o.com/PDF_About_Your_Water/Annual_Achievement_Report.pdf

http://www.mwdh2o.com/WhoWeAre/Board/Board-Meeting/Board%20Archives/2016/12-Dec/Reports/064845868.pdf

http://www.mwdh2o.com/WhoWeAre/Board/Board-Meeting/Board%20Archives/2012/05%20-%20May/Letters/064774100.pdf

http://www.mwdh2o.com/WhoWeAre/Board/Board-Meeting/Board%20Archives/2020/10%20-%20Oct/Letters/10132020%20BOD%209-3%20B-L.pdf

http://www.mwdh2o.com/WhoWeAre/Board/Board-Meeting/Board%20Archives/2001/10-October/Letters/003909849.pdf

Link to Metropolitan's 2020 UWMP once final

6.0 UWMP IMPLEMENTATION

In addition to the analysis and documentation described above, WR P1 subsection (c)(1)(B) requires that all programs and projects included in the UWMP that are locally cost-effective and technically feasible, which reduce reliance on the Delta, are identified, evaluated, and implemented consistent with the implementation schedule. WR P1 (c)(1)(B) states that:

A. *Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta*

In accordance with Water Code Section 10631(f), water suppliers must already include in their UWMP a detailed description of expected future projects and programs that they may implement to increase the amount of water supply available to them in normal and single-dry water years and for a period of drought lasting five consecutive years. The UWMP description must also identify specific projects, include a description of the increase in water supply that is expected to be available from each project, and include an estimate regarding the implementation timeline for each project or program.

Section 6.8 – Future Water Projects of the District UWMP summarizes the implementation plan and continued progress in developing a diversified water portfolio to meet the District's water needs.