CALIFORNIA
AMERICAN WATER

PUBLIC REVIEW DRAFT

2020 URBAN WATER MANAGEMENT PLAN

WSC

CALIFORNIA AMERICAN WATER – LOS ANGELES COUNTY DISTRICT | JUNE 2021

CALIFORNIA AMERICAN WATER

CALIFORNIA AMERICAN WATER –
LOS ANGLES COUNTY DISTRICT

2020 Urban Water Management Plan

JUNE 2021

Public Draft

Prepared by Water Systems Consulting, Inc.

WSC

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ACRONYMS & ABBREVIATIONS

°F	Degrees Fahrenheit
AF	Acre Foot
AFY	Acre Feet per Year
APA	Allowed Pumping Allocation
AWWA	American Water Works Association
CALWEP	California Water Efficiency Partnership
CCAM	Correlating Continuous Acoustic Monitoring
CII	Commercial, Industrial, and Institutional
CIMIS	California Irrigation Management Irrigation System
CPS	Comprehensive Planning Study
CPUC	California Public Utility Commission
CRA	Colorado River Aqueduct
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
DDW	State Board Division of Drinking Water
DMM	Demand Management Measure
DRA	Drought Risk Assessment
DSC	Delta Stewardship Council
DWR	California Department of Water Resources
ETo	Evapotranspiration
FSR	Field Service Representative
FY	Fiscal Year
GIS	Geographical Information System
GPCD	Gallons per Capita per Day
GPM	Gallons per Minute
HECW	High Efficiency Clothes Washer
HEDW	High Efficiency Dishwasher
HET	High Efficiency Toilet
ITP	Independent Technical Panel
JWPCP	Joint Water Pollution Control Plant
kWh	Kilowatt-hours

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LACSD	Los Angeles County Sanitation District
LCWRP	Los Coyotes Water Reclamation Plant
Legislature	State of California Legislature
LL	Large Landscape
MSGB	Main San Gabriel Basin
MWD	Metropolitan Water District of Southern California
NRW	Non-revenue Water
OPA	Other Public Authority
OSY	Operating Safe Yield
POI	Points of Interest
RAP	Resource Action Programs
RHNA	Regional Housing Needs Assessment
RUWMP	Regional Urban Water Management Plan
SBX7-7	Water Conservation Act of 2009 also known as Senate Bill 7 of Special Extended Session 7
SGAG	Southern California Association of Governments
SILD	Satellite Imagery Leak Detection
SJCWRP	San Jose Water Reclamation Plant
State Board	State Water Resources Control Board
SWP	State Water Project
TAZ	Transportation Analysis Zones
UHET	Ultra-High Efficiency Toilet
ULFT	Ultra-Low Flush Toilet
Upper District	Upper San Gabriel Valley Municipal Water District of Southern California
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act
VOC	Volatile Organic Compound
WBIC	Weather Based Irrigation Controller
WBMWD	West Basin Municipal Water District
WSA	Water Supply Assessments
WSCP	Water Shortage Contingency Plan
WUE	Water Use Efficiency
WWTP	Wastewater Treatment Plant

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URBAN WATER MANAGEMENT PLAN

1 Introduction and Lay Description

This chapter provides a brief overview of the California American Water Southern Division Los Angeles County District (California American Water or Los Angeles County District) and the purpose of this 2020 Urban Water Management Plan (UWMP or Plan). It also describes how the Plan is organized and how it relates to other local and regional planning efforts that the Los Angeles County District is involved in.

IN THIS SECTION

- About California American Water Los Angeles County District
- Purpose of the Plan
- Plan Organization
- Relationship to other documents and initiatives

This document presents the 2020 Urban Water Management Plan (UWMP or Plan) for the California American Water Southern Division Los Angeles County District (Los Angeles County District) service area.

California American Water is a privately owned public utility providing water services to over 675,000 people in over 50 communities throughout California. California American Water is a wholly owned subsidiary of the American Water Works Company (American Water), one of the largest investor-owned water and wastewater utility companies in the United States. American Water is headquartered in Camden, New Jersey, and California American Water is headquartered in San Diego, CA. California American Water was incorporated into American Water under California law in 1966 when American Water acquired California Water and Telephone.

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California American Water is operated by three Division Offices: Northern Division; Central Division; and Southern Division. The Southern Division includes the Ventura County, Los Angeles County and San Diego County Districts. This UWMP covers the Los Angeles County District and the three service areas it contains: Baldwin Hills, Duarte, and San Marino. The three service areas exceed 3,000 customers and deliver 3,000 acre-feet-per-year (AFY) or more. The Los Angeles County Districts water supply consists of groundwater, an integrated right for the San Gabriel River, and wholesale purchases.

1.1 Urban Water Management Plan Purpose and Overview

In 1983, the State of California Legislature (Legislature) enacted the Urban Water Management Planning Act (UWMP Act). The law required an urban water supplier, providing water for municipal purposes to more than 3,000 customers or serving more than 3,000 AFY, to adopt an UWMP every five years demonstrating water supply reliability under normal as well as drought conditions. The UWMP Act applies to wholesale and retail suppliers.

Since the original UWMP Act was passed, it has undergone significant expansion, particularly since the Los Angeles County District's previous UWMP was prepared in 2015. Prolonged droughts, groundwater overdraft, regulatory revisions, and changing climatic conditions affect the reliability of each water supplier as well as the statewide water reliability overseen by California Department of Water Resources (DWR), the State Water Resources Control Board (State Board), and the Legislature. Accordingly, the UWMP Act has grown to address changing conditions and the current requirements are found in Sections 10610-10656 and 10608 of the California Water Code (CWC).

DWR provides guidance for urban water suppliers by preparing an UWMP Guidebook, conducting workshops, developing tools, and providing program staff to help water suppliers prepare comprehensive and useful water management plans, implement water conservation programs, and understand the requirements in the CWC. Suppliers prepare their own UWMPs in accordance with the requirements and submit them to DWR. DWR then reviews the plans to make sure they have addressed the requirements identified in the CWC and submits a report to the Legislature summarizing the status of the plans for each five-year cycle.

The purpose of this UWMP is for California American Water to evaluate long-term resource planning and establish management measures to ensure adequate water supplies are available to meet existing and future demands. The UWMP provides a framework to help water suppliers maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during drought conditions or other water supply shortages.

The UWMP is a valuable planning tool used for multiple purposes including:

- Provides a standardized methodology for water utilities to assess their water resource needs and availability.
- Serves as a resource to the community and other interested parties regarding water supply and demand, conservation and other water related information.
- Provides a key source of information for cities and counties when considering approval of proposed new developments and preparing regional long-range planning documents such as city and county General Plans.
- Informs other regional water planning efforts.

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CWC Section 10632 also includes updated requirements for suppliers to prepare a Water Shortage Contingency Plan (WSCP). The WSCP documents a supplier's plans to manage and mitigate an actual water shortage condition, should one occur because of drought or other impacts on water supplies. In the 2015 UWMP cycle, the WSCP was part of the UWMP. For the 2020 UWMP, the WSCP is required to be a standalone document so that it can be updated independently of the UWMP but must be referenced in and attached to the 2020 UWMP. An overview of the WSCP is described in the body of this Plan and the standalone WSCP is attached as **Appendix H**.

1.2 UWMP Organization

This UWMP was prepared in compliance with the CWC and generally followed DWR's recommended organizational outline. New requirements to include lay descriptions are accounted for in this section and at the beginning of each chapter.

Below is a summary of the information included in the UWMP:

Chapter 1 – Introduction.

This chapter provides background information on the UWMP process, new regulatory requirements, and an overview of the information covered throughout the remaining chapters. The UWMP was prepared to maintain compliance with CWC and DWR requirements. California American Water will maintain eligibility for DWR and other grants with submission of the UWMP by July 1, 2020, subject to final review and approval by DWR.

Chapter 2 – Plan Preparation & Adoption.

This chapter provides information on the processes used for developing the UWMP, including efforts in coordination and outreach, the steps taken to prepare the UWMP, hold a public hearing, adopt and submit the UWMP, and implementation of the adopted UWMP. The UWMP was prepared to efficiently coordinate water supply planning and management efforts in the region. The UWMP was also prepared in a transparent manner and various stakeholders were engaged to seek and distribute relevant information. All public noticing, UWMP adoption, and UWMP submittal requirements were conducted as outlined by DWR's 2020 Guidebook.

Chapter 3 – System Description.

This chapter describes the Los Angeles County District's water systems, service areas, population demographics, climate, and land uses. The Los Angeles County District has three service areas which include Baldwin Hills, Duarte and San Marino. The Baldwin Hills service area encompasses approximately 2,056 acres and is located east of Highway 90, to north of the City of Inglewood. California American Water serves approximately 17,695 people in the Baldwin Hills service area. The Duarte service area encompasses approximately 6,459 acres and is located approximately 20 miles northeast of downtown Los Angeles. California American Water serves approximately 27,901 people in the Duarte service area. The San Marino service area encompasses approximately 5,491 acres and is located approximately 10 miles northeast of downtown Los Angeles in the San Gabriel Valley. California American Water serves a population of approximately 56,074 people in the San Marino service area.

Chapter 4 – Water Use Characterization.

This chapter describes and quantifies the current and projected water uses through 2045 within the water service area of the Los Angeles County District by customer category. In 2020, single-family and multi-family customers used approximately 71% of the total water consumed in the service area. The

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Los Angeles County District relies on groundwater, an integrated right from the San Gabriel River, and purchased water from wholesalers to meet customer demands.

Chapter 5 – SBX7-7 Baseline and Targets.

This chapter describes the Water Conservation Act of 2009, also known as SBX7-7, Baseline, Targets, and 2020 Compliance. The calculated gallons per capita per day (GPCD) for 2020 is 169 GPCD, which meets California American Water's 2020 SBX7-7 target of 187 GPCD.

Chapter 6 – Water Supply Characterization.

This chapter describes and quantifies the current and projected potable and non-potable water supplies for the Los Angeles County District. Water sources are characterized with information needed to manage water resources, assess supply reliability, perform the Drought Risk Assessment, and prepare and implement the WSCP. California American Water anticipates meeting customer demands through 2045.

Chapter 7 – Water Service Reliability and Drought Risk Assessment.

This chapter describes the Los Angeles County District's water supply reliability during normal, single dry, and multiple dry water years through 2045. A Drought Risk Assessment (DRA) for the next five years is also included. The water service reliability assessment and DRA results indicate that no water shortages are anticipated within the next 25-years under normal, single dry water years, and multiple dry water years.

Chapter 8 – Water Shortage Contingency Plan.

This chapter includes a summary of the standalone WSCP which is a detailed plan for how the Los Angeles County District will identify and respond to foreseeable and unforeseeable water shortages. A water shortage occurs when the water supply is reduced to a level that cannot support demand at any given time or when reduction in demand is required for various reasons.

Chapter 9 – Demand Management Measures.

This chapter describes the Los Angeles County District's efforts to promote conservation and reduce water demand, including discussions of specific demand management measures. California American Water actively promotes public awareness and education about its water supply source and the public's role in conserving water and protecting shared resources. California American Water is committed to implementing cost effective programs that will increase water efficiency throughout the service area.

1.3 UWMPs in Relation to Other Efforts

California American Water coordinated with multiple neighboring and stakeholder agencies to prepare this UWMP. The coordination efforts were conducted to: 1) inform the agencies of California American Water activities; 2) gather high quality data for use in developing this UWMP; and 3) coordinate planning activities with other related regional plans and initiatives.

In addition to the 2020 UWMP, the Los Angeles County District is involved in several other internal and external planning efforts and collaborates with a variety of stakeholders to achieve coordination and consistency between various planning documents locally and regionally.

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1.4 UWMPs and Grant or Loan Eligibility

In order for a water supplier to be eligible for a grant or loan administered by DWR, the supplier must have a current UWMP on file that meets the requirements set forth by the Water Code. A current UWMP must also be maintained by the supplier throughout the term of any grants or loans received. California American Water has prepared the 2020 UWMP under guidance from DWR's Guidebook to Assist Water Suppliers in the Preparation of a 2020 Urban Water Management Plan (2020 UWMP Guidebook) (Resources, March 2021).

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

The Delta Plan is a comprehensive, long-term, legally enforceable plan guiding how federal, state, and local agencies manage the Sacramento-San Joaquin Delta's (Delta's) water and environmental resources. The Delta Plan was adopted in 2013 by the Delta Stewardship Council (DSC). Delta Plan Policy WR P1 identifies UWMPs as the tool to demonstrate consistency with state policy to reduce reliance on the Delta for a Supplier that carries out or takes part in a covered action. A covered action may include activities 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. As a supplier that receives imported water from the Delta through its wholesale suppliers, California American Water is required to submit information as outlined in **Appendix C** of the DWR 2020 UWMP Guidebook.

To document and quantify supplies contributing to reduced reliance on the Delta watershed and improved regional self-reliance a number of steps must be taken, which include.

- Setting a Baseline
- Change in Delivery of Delta Water
- UWMP WR P1 Consistency Reporting

DWR does not review this analysis as part of the UWMP approval process; therefore, this information is attached as **Appendix F**.

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2 Plan Preparation

This chapter of the UWMP provides information on the processes used for developing the UWMP, including efforts in coordination and outreach.

IN THIS SECTION

- UWMP Preparation
- Coordination and Outreach
- UWMP Adoption and Notification
- UWMP Submittal to the State

This Plan was prepared following guidance from DWR's 2020 UWMP Guidebook, DWR Urban Water Management Plans Public Workshops and Webinars, Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (SB7 Guidebook) (California Department of Water Resources, February 2016), and the 2020 DWR Review Sheet Checklist (**Appendix A**).

The 2020 UWMP was prepared in a transparent manner and the Los Angeles County District actively engaged stakeholders, cities, counties, water agencies and the public to both seek and distribute water use, supply, and reliability information to strengthen the regions' ability to assess and plan for the region's water future.

Details regarding the Los Angeles County District's UWMP preparation and the coordination and outreach efforts conducted are provided in this chapter.

DWR's 2020 UWMP schedule is summarized in **Table 2-1** on the next page.

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Table 2-1. DWR 2020 UWMP Schedule

DATE	EVENT
December 2020	Draft Guidebook released
December 2020-January 2021	DWR Workshops
March 2021	Draft Final Guidebook released
April 2021	Final Guidebook released
July 1, 2021	UWMPs due to DWR

2.1 Plan Preparation

The Los Angeles County District prepared this 2020 UWMP in accordance with Water Code Section 10617, which requires water supplier with 3,000 or more service connections, or those supplying 3,000 AFY or more to prepare an UWMP. Suppliers are required to update UWMPs at least once every five years on or before July 1, in years ending in six and one, incorporating updated and new information from the five years preceding each update. The Los Angeles County District's 2020 UWMP must be submitted to DWR by July 1, 2021. California American Water has included all requisite data in the development of this 2020 UWMP.

2.2 Basis for Preparing a Plan

The Los Angeles County District is preparing an individual UWMP and is not a member of a Regional UWMP or Regional Alliance. The Los Angeles County District served an estimated 101,670 people in its service area, through 28,181 metered connections, and supplied 19,453 AFY of potable water in 2020 to customers. Throughout this Plan, water volume is represented in units of AFY, unless otherwise noted, and data is presented on a calendar year basis. Required DWR tables presenting this information are provided in **Table 2-2**, **Table 2-3**, and **Table 2-4**.

Table 2-2. DWR 2-1R Public Water Systems

PUBLIC WATER SYSTEM NUMBER	PUBLIC WATER SYSTEM NAME	NUMBER OF MUNICIPAL CONNECTIONS 2020	VOLUME OF WATER SUPPLIED 2020 (AFY)
CA1910052	Baldwin Hills	6,261	2,945
CA1910186	Duarte	7,494	6,221
CA1910139	San Marino	14,426	10,287
	TOTAL:	**28,181**	**19,453**

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Table 2-3. DWR 2-2 Plan Identification

TYPE OF PLAN	MEMBER OF RUWMP	MEMBER OF REGIONAL ALLIANCE	NAME OF RUWMP OR REGIONAL ALLIANCE
Individual UWMP	No	No	NA

Table 2-4. DWR 2-3 Agency Identification

TYPE OF SUPPLIER	YEAR TYPE	FIRST DAY OF YEAR		UNIT TYPE
		DD	MM	
Retailer	Calendar Years			Acre Feet (AF)

2.3 Coordination and Outreach

The Los Angeles County District coordinated with multiple neighboring and stakeholder agencies to prepare the 2020 UWMP. The coordinated efforts were conducted to 1) inform the agencies of the Los Angeles County District's efforts and activities; 2) gather high quality data for use in developing this UWMP; and 3) coordinate planning activities with other related regional plans and initiatives.

Water Code Section 10621(b) and Delta Plan Policy WR P1 requires that Suppliers notify cities and counties to which they serve water that the UWMP, WSCP, and reduced reliance on the Delta watershed documentation are being updated and reviewed. The Water Code specifies that this must be done at least 60 days prior to the public hearing. To fulfill this requirement, California American Water sent letters of notification of preparation of the 2020 UWMP, 2020 WSCP, and reduced reliance on the Delta watershed documentation to all cities and counties within the Los Angeles County District's service areas 60 days prior to the public hearing. Copies of the 60-day notification letters are attached as **Appendix B**. In addition, California American Water exchanged supply and demand information with the wholesale water suppliers from which it purchases imported water (**Table 2-5**). California American Water purchases water from the Metropolitan Water District of Southern California (MWD) via the City of San Marino; Upper San Gabriel Valley Municipal Water District (Upper District) via the Main San Gabriel Basin (MSGB) Watermaster; and West Basin Municipal Water District (WBMWD).

Table 2-5. DWR 2-4 Water Supplier Information Exchange

WHOLESALE WATER SUPPLIER NAME
Metropolitan Water District of Southern California (MWD)
City of San Marino
Upper San Gabriel Valley Municipal Water District (Upper District)
West Basin Municipal Water District (WBMWD)

2.4 UWMP Adoption, Submittal, and Implementation

This section describes the steps taken to adopt and submit the UWMP and to make it publicly available. This section also includes a discussion of the Los Angeles County Districts' plan to implement the UWMP.

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2.4.1 Notice of UWMP and WSCP Preparation and Adoption

CWC Section 10621(b) requires that suppliers notify cities and counties in which they serve water that the UWMP and WSCP are being updated and reviewed at least 60 days prior to the public hearing. To fulfill this requirement, California American Water sent a letter of notification of preparation to the cities and counties noted below, within 60 days prior to the public hearing.

- City of Alhambra
- City of Azusa
- City of Bradbury
- City of Duarte
- City of El Monte
- City of Inglewood
- City of Irwindale
- City of Monrovia
- City of Rosemead
- City of San Gabriel
- City of San Marino
- City of Temple City
- County of Los Angeles
- Los Angeles County Sanitation Districts

California American Water also made the 2020 UWMP and WSCP available for public review on June 7, 2021 and held a public hearing on June 16, 2021. The notice to the public was made once a week for two successive weeks. The public hearing was first noticed in the Los Angeles Daily News, San Gabriel Valley Tribune, Pasadena Star News, and Daily Breeze on June 2nd, 2021 and noticed again on June 9th, 2021. Public hearing notifications were also sent to the same distribution list as the 60 day notifications via email. The hearing notices are attached as **Appendix B**. California American Water made the 2020 UWMP and WSCP available for review prior to the public hearing by posting them in the customer notifications section on its website (www.californiaamwater.com).

2.4.2 Public Hearing and Adoption

The 2020 UWMP and WSCP were included as separate agenda items, noticed, and reviewed in a Public Hearing on June 16, 2021. This hearing provided agencies and members of the public a chance to comment on the Draft UWMP and WSCP. The public hearing took place before the adoption allowing opportunity for the report to be modified in response to public input. The 2020 UWMP and WSCP were adopted on dates to be determined. Copies of the UWMP and WSCP adoption is included as **Appendix C**.

2.4.3 Submittal of the UWMP and WSCP

The 2020 UWMP and WSCP were submitted to DWR by July 1, 2021 (within 30 days of adoption) using the DWR Water Use Efficiency (WUE) Data Portal. The documents were also submitted to the California State Library, cities and counties within California American Water's Los Angeles County District within 30 days of adoption. The Los Angeles County District also included the 2020 UWMP and WSCP as part of its general rate case filings to the California Public Utility Commission (CPUC).

2.4.4 Public Availability

Commencing no later than within 30 days of adoption, California American Water will have a copy of the 2020 UWMP and WSCP available for public review at its office (see address below) during normal business hours. The documents will also be posted on California American Water's website as noted below.

California American Water – Los Angeles County District
8657 Grand Avenue
Rosemead, CA 91770
californiaamwater.com

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2.4.5 Amending and Adopting an UWMP or WSCP

Implementation of this UWMP will be carried out as described unless significant changes occur between the UWMP adoption and the 2025 UWMP. If such significant changes do occur, California American Water will amend and readopt the UWMP as required by the CWC. The same applies to the WSCP.

Amendments to the 2020 UWMP and WSCP will be on an as needed basis. Should California American Water need to amend the adopted UWMP or WSCP in the future, a public hearing for review of the proposed amendments to the documents will be required. California American Water will need to send a 60-day notification letter to cities and counties in their service area and notify the public in the same manner as set forth earlier in this chapter. Once the amended documents are adopted, a copy of the final version will be sent to the California State Library, DWR (electronically using the WUEdata reporting tool), cities and counties within its service area within 30 days of adoption. The finalized version will also be made available to the public online at California American Water's website and in person at its office during normal business hours.

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3 System Description

This chapter describes the Los Angeles County District's service area, customers, and land uses, as well as population, demographics, and climate.

California American Water is operated by three Division Offices: Northern Division; Central Division; and Southern Division. The Northern Division includes the Sacramento Main, Northern, and Central Valley Districts, the Central Division includes the Monterey County District, and the Southern Division includes the Ventura County, Los Angeles County and San Diego County Districts. This UWMP covers the Los Angeles County District and the three service areas it contains: Baldwin Hills, Duarte and San Marino. Each of California American Water's individual systems within the Los Angeles County District is registered with separate operating permits with the State Water Resources Control Board (State Board) Division of Drinking Water (DDW).

IN THIS SECTION

- California American Water – Los Angeles County District Service Area
- Service Area Climate, Population and Land Uses

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3.1 General Description

California American Water is an investor-owned utility regulated by the CPUC as Utility #U210W. Therefore, its facilities, operations, and financial structure (including customer rates) are subject to extensive regulation by the CPUC, as well as environmental, health, safety and water quality regulations by federal, state and local governments. The CPUC sets rules and regulates public utility companies in California. The intent of the regulations set by the CPUC is to ensure provision of high-quality water service at a fair price. All increases in service rates are directly related to the cost of providing quality service and are subjected to a public review process and approval by the CPUC.

3.2 Service Area Boundary Maps

The Los Angeles County District consists of the Baldwin Hills, Duarte, and San Marino service areas. All three service areas of the Los Angeles County District are located in Los Angeles County, California. In 2020, the Los Angeles County District provided water to 28,181 connections and served an estimated population of 101,670 people. This population made up approximately 1% of the Los Angeles County population. **Figure 3-1** shows the location of all three service areas in Los Angeles County.

The Baldwin Hills service area encompasses approximately 2,056 acres and is located east of Highway 90, to north of the City of Inglewood. In 2020, California American Water's Baldwin Hills service area provided water to 6,261 connections in portions of the City of Inglewood, and in the unincorporated communities of Ladera Heights and View Park-Windsor Hills. California American Water serves approximately 17,695 people in the Baldwin Hills service area. The Baldwin Hills service area is shown in **Figure 3-2**.

The Duarte service area encompasses approximately 6,459 acres and is located approximately 20 miles northeast of downtown Los Angeles. Duarte spans both sides of Interstate 210 immediately west of the Interstate 210/ Interstate 605 freeway interchange. The San Gabriel River runs along the eastern border of Duarte. In 2020, California American Water's Duarte service area provided water to 7,494 connections in the cities of Azusa, Bradbury, Duarte, Irwindale, and Monrovia. California American Water serves approximately 27,901 people in the Duarte service area. The Duarte service area is shown in **Figure 3-3**.

The San Marino service area encompasses approximately 5,491 acres and is located approximately 10 miles northeast of downtown Los Angeles in the San Gabriel Valley. In 2020, California American Water's San Marino service area provided water to 14,426 connections in the cities of Alhambra, Arcadia, El Monte, Pasadena, Rosemead, San Gabriel, San Marino, Temple City, and in portions of the unincorporated communities of San Pasqual, East Pasadena, and East San Gabriel. California American Water serves a population of approximately 56,074 people in the San Marino service area. The San Marino service area is shown in **Figure 3-4**.

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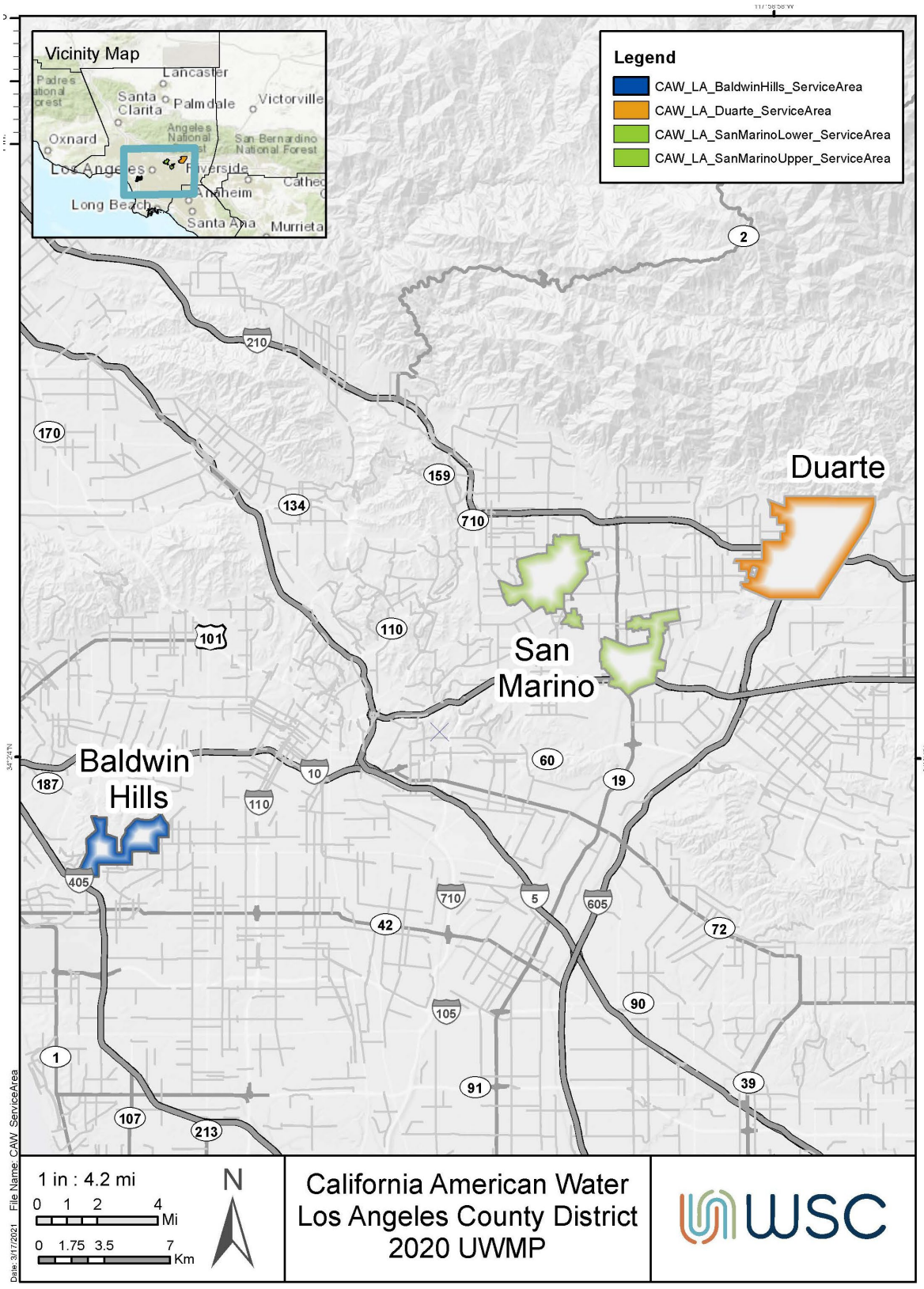

Figure 3-1. Los Angeles County District Service Areas

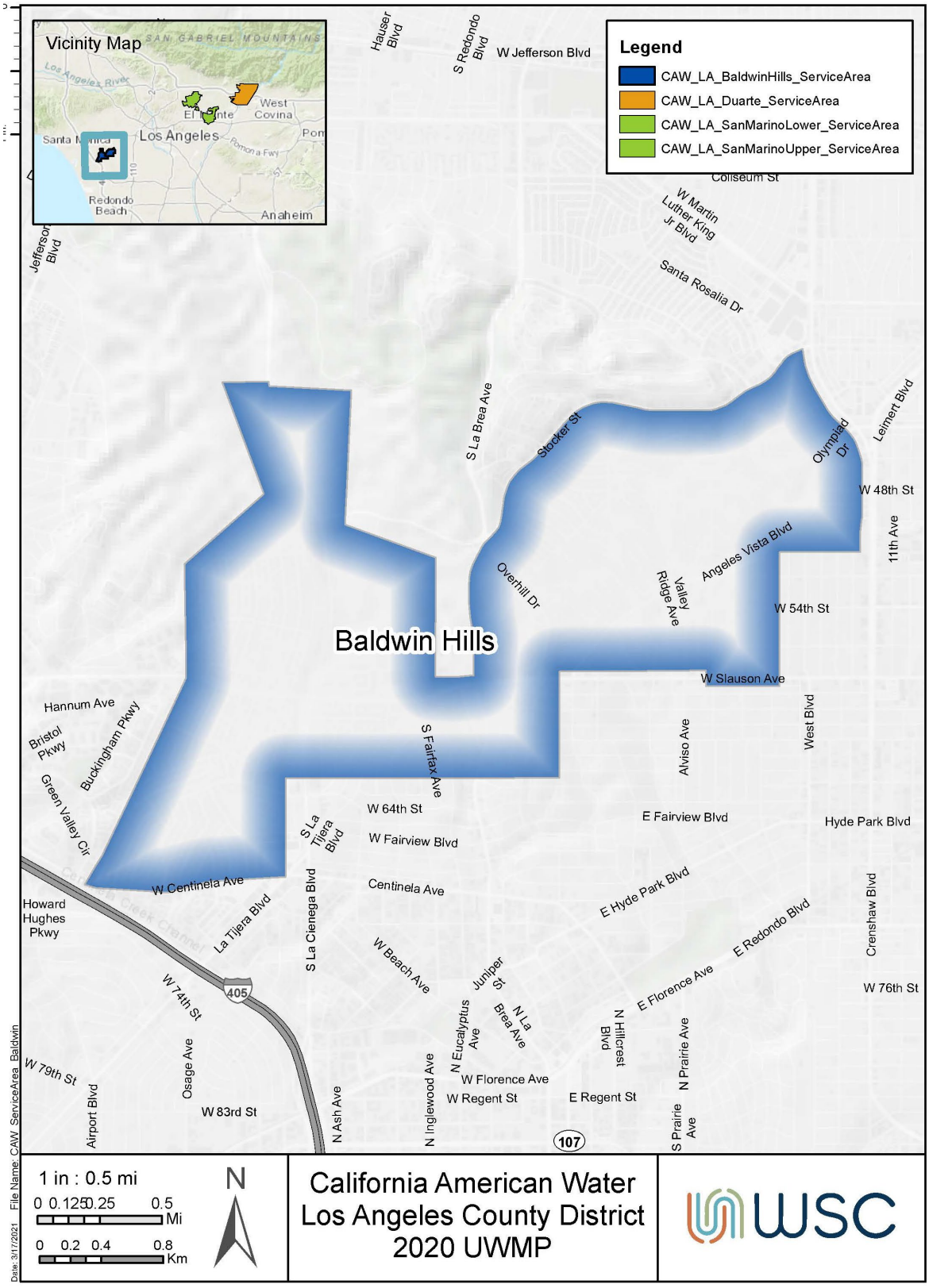

Figure 3-2. Baldwin Hills Service Area

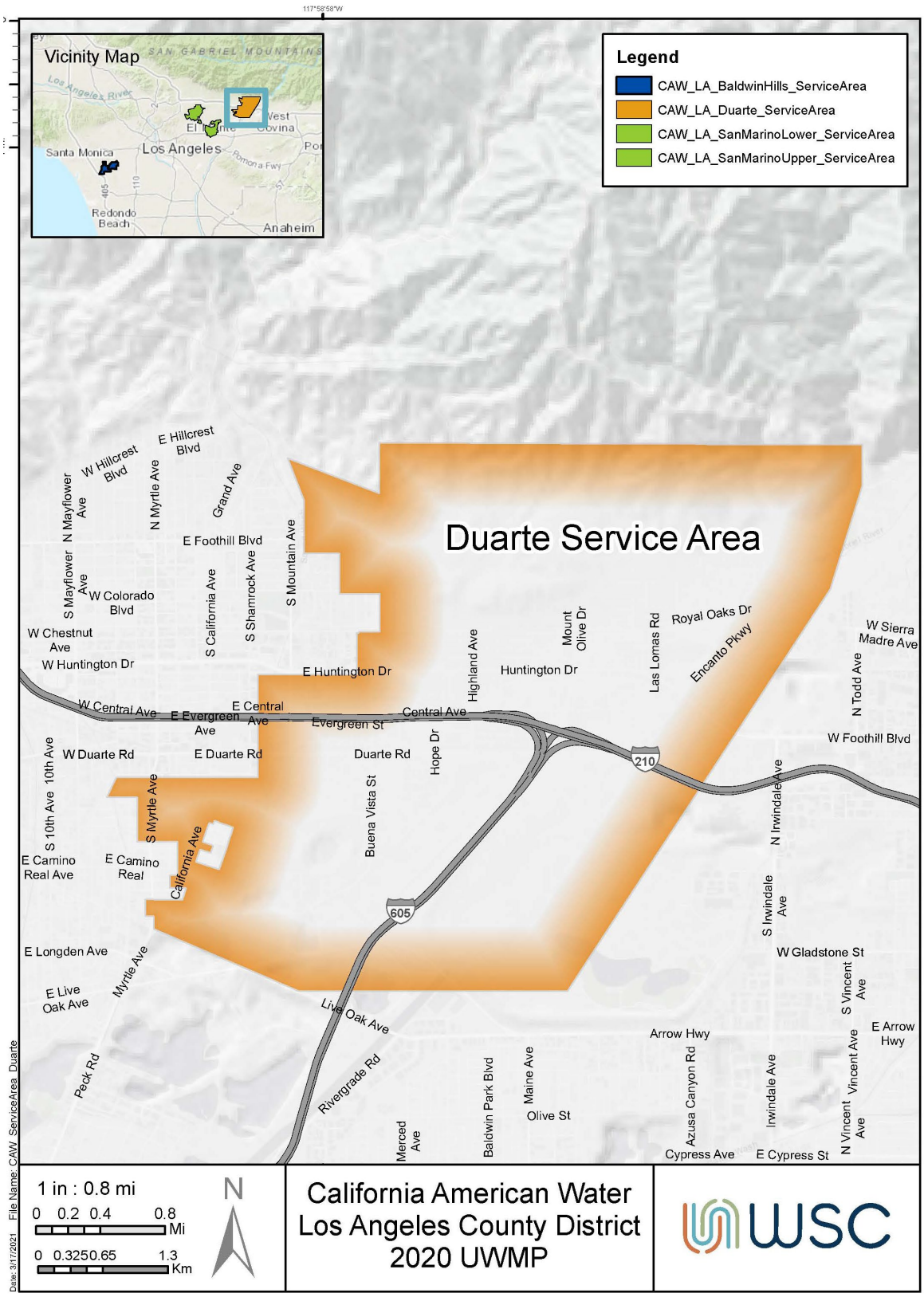

Figure 3-3. Duarte Service Area

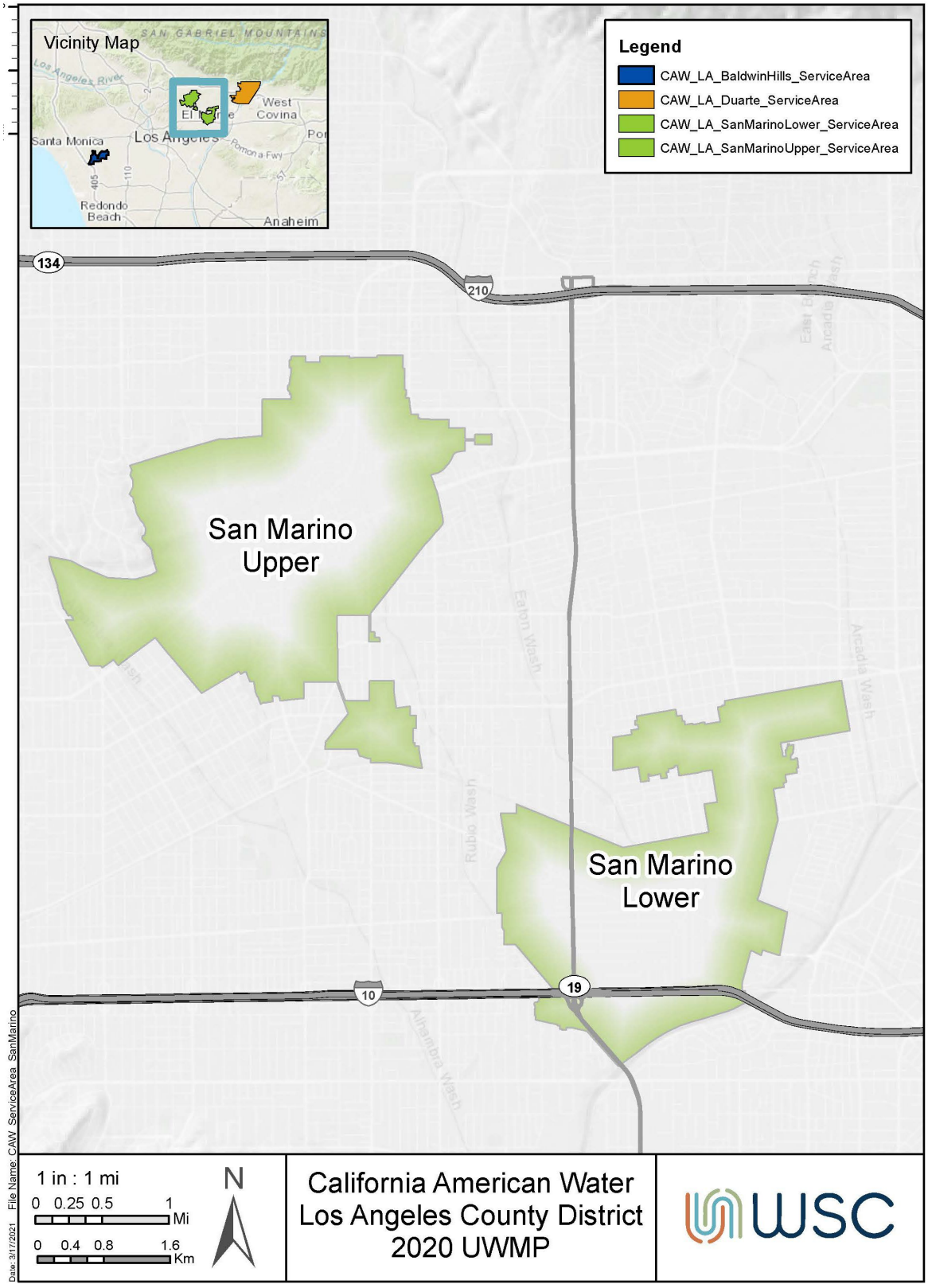

Figure 3-4. San Marino Service Area

3.3 Service Area Climate

The Los Angeles County District has a Mediterranean climate as evidenced by its dry, warm to hot summers, and mild, somewhat rainy winters with modest transitions in temperature. The warmest month of the year is August and the coldest month is December. The average temperature is a mild 64.3 degrees Fahrenheit (°F). In 2020, the weather station used to record climate data received an average 31.1 inches of rainfall. **Table 3-1** shows monthly precipitation, evapotranspiration (ETo), and temperature in more detail.

Table 3-1. Los Angeles County Climate Data

MONTH	AVERAGE PRECIPITATION (INCHES)	AVERAGE ETO (INCHES)	AVERAGE AIR TEMP (F)
January	4.3	2.2	55.6
February	4.0	2.6	56.0
March	2.7	3.8	58.7
April	4.9	4.6	61.8
May	5.6	5.1	64.8
June	1.6	6.0	69.6
July	2.8	6.7	74.7
August	0.0	6.3	75.2
September	0.2	5.0	73.1
October	0.6	3.7	67.4
November	1.0	2.5	60.7
December	3.4	1.9	54.4
ANNUAL AVERAGE	**31.1**	**50.4**	**64.3**

Source: California Irrigation Management Information System (CIMIS), Station 159 in Monrovia, (period of record is from January 2005 through December 2020) http://wwwcimis.water.ca.gov/cimis/data.jsp

3.4 Service Area Population and Demographics

The Los Angeles County District provides water to an estimated 101,670 people. The service area is largely built out and population growth estimates are anticipated to be slow and stable. A summary of the population and demographics for the Los Angeles County District is provided in the following sections.

3.4.1 Service Area Population

The 2020 population estimate for California American Water's service areas was calculated using DWR's online Population Tool, which utilizes Geographical Information Systems (GIS) service area boundaries, service connection data and Census data. The DWR Population Tool overlaps GIS shapefiles with Census populations by Census block. The tool calculates the 2020 persons-per-

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connection by creating a trend line of the persons-per-connection from the year 2000 to the year 2010 and continuing that trend to the year 2020. Population projections and annual growth rates were developed using demographic projections from the Southern California Association of Governments (SCAG) Connect SoCal: The 2020-2045 Regional Transportation Plan/Sustainable Community Strategy (September 2020)1. SCAG routinely forecasts population, housing, and employment estimates as well as develops transportation plans to support growing population and housing needs throughout the region, and last prepared final population, housing, and employment forecasts in 2019.

SCAG provided updated population, housing, and employment estimates for 2020, 2035, and 2045. This data is organized by Transportation Analysis Zones (TAZ). Because TAZ do not align with California American Water's service areas, GIS analysis was used to determine the growth that is projected to occur within the service area. For intermediate years, a linear interpolation was used to calculate the populations for 2025, 2030, and 2040 and then determine annual growth rates. Estimates for 2020 and future year population are provided in Table 3-2.

Table 3-2. DWR 3-1R Current and Projected Population

POPULATION SERVED	2020	2025	2030	2035	2040	2045
Baldwin Hills	17,695	17,963	18,230	18,498	18,536	18,574
Duarte	27,901	28,398	28,897	29,394	29,751	30,108
San Marino	56,074	56,735	57,396	58,056	58,676	59,296
Total	101,670	103,096	104,523	105,948	106,963	107,978

Source(s): DWR Population Tool, WUEdata.water.ca.gov
Population projections were calculated based on the Southern California Association of Governments 2019 regional growth forecast for the transportation analysis zones overlying the California American Water Los Angeles County District service area.

3.4.2 Other Social, Economic, and Demographic Factors

SCAG also develops projections for household and employment growth. The number of new households plateaued after the economic recession of 2008-2010. A growing economy and gradual housing production has started to create a gradual increase in the number of households throughout the region. The household and employment projections for the Los Angeles County District service area are shown **Table 3-3**.

Table 3-3. Household and Employment Projections

	2020	2025	2030	2035	2040	2045
Households	38,920	39,689	40,458	41,225	41,677	42,130
Employment	49,254	50,375	51,496	52,617	53,687	54,755

Source: Employment and household projections were calculated based on the Southern California Association of Governments 2019 regional growth forecast for the transportation analysis zones overlying the California American Water Ventura County District service area

[1] The population modeling analysis was performed by Water Systems Consulting, Inc. based upon modeling information originally developed by the Southern California Association of Governments (SCAG). SCAG is not responsible for how the Model is applied or for any changes to the model scripts, model parameters, or model input data. The resulting modeling data does not necessarily reflect the official views or policies of SCAG. SCAG shall not be held responsible for the modeling results and the content of the documentation.

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3.5 Land Uses within Service Area

SCAG prepares demographic forecasts based on land use data through an extensive process that emphasizes input from local planners in coordination with local or regional land use authorities, incorporating essential information to reflect anticipated future populations and land uses. SCAG's projections undergo extensive local review, incorporate zoning information from city and county general plans, and are supported by Environmental Impact Reports.

SCAG prepared preliminary demographic forecast estimates for the 2020 Connect SoCal Plan in 2017 for each TAZ. Between 2017 and 2019, SCAG met with each jurisdiction individually to review the demographic forecasts. This review process incorporated feedback from each jurisdiction, including land use planning departments, to help align the demographic forecasts with current land use and anticipated land use changes.

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4 Water Use Characterization

Residential customers consume the majority of water served by the Los Angeles County District. In 2020, single-family and multi-family customers used approximately 71% of the total water consumed in the service area. This chapter summarizes past and current water uses and projected demands through 2045.

This section describes and quantifies the Los Angeles County District's current and projected water use through the year 2045. Accurately tracking and reporting water use allows the Los Angeles County District to properly analyze the use of their resources to conduct diligent resource planning. Estimating future water use as accurately as possible allows the Los Angeles County District to manage its water supply and appropriately plan for infrastructure investments. Assessments of future growth and related water use provides essential information for developing water use projections to manage resources for the service area needs.

IN THIS SECTION

- Non-Potable vs. Potable Water Use
- Past, Current and Projected Water Use
- Water Use for Lower Income Households
- Climate Change Considerations

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4.1 Non-Potable Versus Potable Water Use

The Los Angeles County District relies on groundwater, an integrated right from the San Gabriel River and purchased water from wholesalers to meet customer demands. No raw or recycled water is provided in the service area, so all numbers presented below are for potable water deliveries. The Los Angeles County District is continually looking for opportunities and working with its regional partners to increase the use of recycled water within the service area. Additional information regarding the Los Angeles County District's water supply as well as the treatment and distribution of recycled water originating within the Los Angeles County District's service area is provided in **Chapter 6** of this UWMP.

4.2 Past, Current, and Projected Water Use by Sector

Water suppliers have the option to track water use for the sectors that are applicable to their systems.

The Los Angeles County District tracks water use by the following sectors.

- Residential – both single-family & multi-family residential
- Commercial
- Industrial
- Other Public Authority (OPA) – government accounts and schools
- Company Accounts – Los Angeles County District company accounts
- Fire Service – fire hydrants and fire services
- Miscellaneous Sales – construction meter usage

The sectors above are used to present past, current, and projected water uses for the Los Angeles County District in this chapter.

4.2.1 Past Water Use

Table 4-1 shows the annual volume of water used by each customer sector in 2020. In 2020, 71% of total water deliveries (excludes losses) were to residential customers (single-family and multi-family).

Figure 4-1 shows the percentage of water used by each customer sector in 2020 rounded to the nearest percent. No raw or recycled water is currently provided in the service area and therefore all numbers presented below are for potable water deliveries.

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Table 4-1. DWR 4-1R Actual Demands for Water – Los Angeles County District

USE TYPE	ADDITIONAL DESCRIPTION	LEVEL OF TREATMENT WHEN DELIVERED	2020 VOLUME (AFY)
Other	Residential - Single-Family & Multi-Family	Drinking Water	11,723
Commercial		Drinking Water	3,814
Industrial		Drinking Water	150
Other	Other Public Authority	Drinking Water	826
Other	Company Accounts	Drinking Water	30
Other	Fire Service	Drinking Water	1
Other	Miscellaneous	Drinking Water	62
Losses		Drinking Water	2,849
		TOTAL:	**19,453**

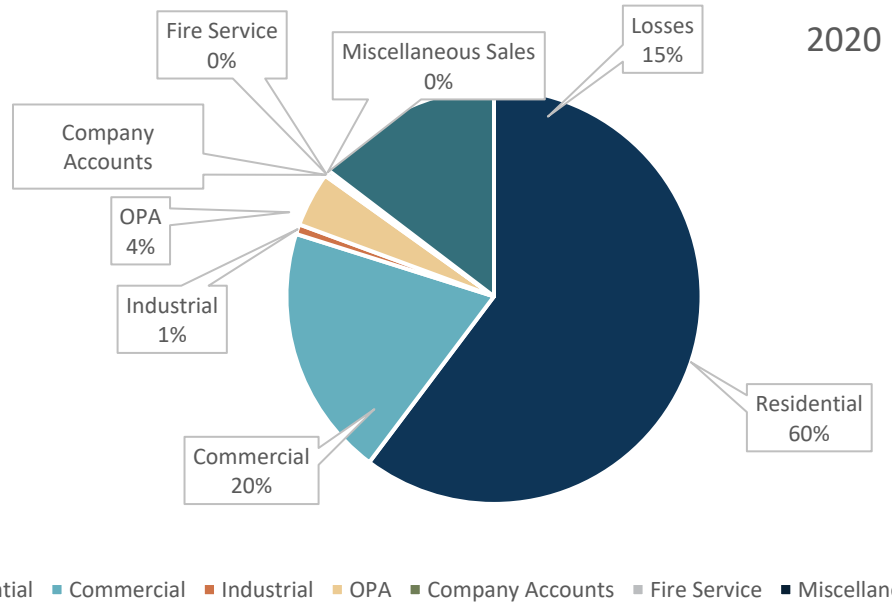

Figure 4-1. 2020 Percentage of Water Use by Customer Sector

4.2.2 Distribution System Water Losses

Water losses can include "real losses", which are physical losses from the water distribution system (and the supplier's storage facilities) as well as "apparent losses", which represent losses due to metering inaccuracies, data handling errors and/or unauthorized consumption. Non-revenue water (NRW) is defined as the water losses plus authorized unbilled (metered and unmetered) water consumption. Suppliers are required to report their distribution system water loss for each of the five

years preceding the UWMP update [Water Code Section 10631(d)(3)] in accordance with the rules adopted pursuant to Water Code Section 10608.34. In addition, suppliers are required to provide data demonstrating whether the supplier will meet its California State Water Resources Control Board (State Board) water loss performance standard. Although the standard has not yet been implemented and may not go into effect until the future, the data needs to be in the 2020 UWMPs per the Water Code.

Table 4-2 summarizes water losses in 2020 for the entire service area. Water losses were calculated as the difference between billed consumption and water entering the distribution system. Water loss over the last five years has ranged from 968 AFY to 2,783 AFY. More detailed assessments of water loss were completed since 2015 using American Water Works Association (AWWA) Water Audit Software and are provided in **Appendix D** and summarized in **Table 4-3**.

Table 4-2. Los Angeles County District Water Losses (AFY)

LOSSES	2020
Losses, AFY*	2,849
Percentage of Losses	15%

*Values shown here were calculated as the difference from billed consumption and total production.

Table 4-3. DWR 4-4R 12 Month Water Loss Audit Reporting - Los Angeles County District

REPORT PERIOD START DATE		
MM	YYYY	VOLUME OF WATER LOSS (AFY)*
1	2015	968
1	2016	1,450
1	2017	1,633
1	2018	1,889
1	2019	2,783

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

4.2.3 Projected Water Use

Demands were estimated using a Gallons Per Capita Per Day (GCPD) method. The total demand was estimated by multiplying the GPCD by the projected populations for 2025, 2030, 2035, 2040, and 2045. Projected populations are described in **Chapter 3**. Several Water Supply Assessments (WSA) were completed since the 2015 UWMP, which are accounted for in population and demand projections. Therefore, the total demand from WSAs is also included in the projected demands through 2045 shown in **Table 4-6**.

Demand projections are based on the assumption that the current GPCD will rebound to the selected target of 187 GPCD in 2025 and stay constant thereafter. **Chapter 5** describes the methodology used to develop SBX7-7 baseline and targets in detail. Since 1995, per capita water usage varied from a high of 231 GPCD in 2007 to a low of 151 GPCD in 2016. Overall, per capita consumption has decreased, which is most likely due to the recent drought, state mandated water use reduction targets, more efficient appliances and plumbing, and conservation efforts made by the Los Angeles County District and its customers (**Figure 4-2**). While the 2020 GPCD was below the SB7 target, future demand could increase due to a variety of factors and this UWMP conservatively projects demands to

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proactively develop water resources management strategies for these potential demands. However, the Los Angeles County District is aware that future water use standards are under development by DWR, which will supersede SBX7-7 standards, and will likely require demands to be lower than the SBX7-7 target. Therefore, the Los Angeles County District plans to continue encouraging efficient water use and implementing water use efficiency measures to support meeting future water use standards and to enhance resiliency for drought and other water shortage conditions as described in **Chapter 7**, **Chapter 8**, and **Chapter 9**.

DWR advises suppliers to include anticipated water conservation savings when developing future demand projections and must identify in the UWMP if conservation savings were considered and included in developing demand estimates for the next 20 years. **Table 4-4** satisfies the requirement and details on various sources used to project demand are discussed in this section. Conservation savings were considered and included in developing demand estimates for the next 20 years by using the selected SBX7-7 target of 187 GPCD, which is assumed to include conservation savings. **Table 4-5** provides projected demands through 2045 in five-year increments. Historic and projected demands by service area are provided in **Table 4-6**. Historical, current, and projected water demands are presented in **Figure 4-3**.

Table 4-4. DWR 4-5R Inclusion in Water Use Projections

Are Future Water Savings Included in Projections? Refer to Appendix K of UWMP Guidebook.	Yes
Section or page number where the citations utilized in the demand projects can it be found:	Section 4.2.3
Are Lower Income Residential Demands Included in Projections?	Yes

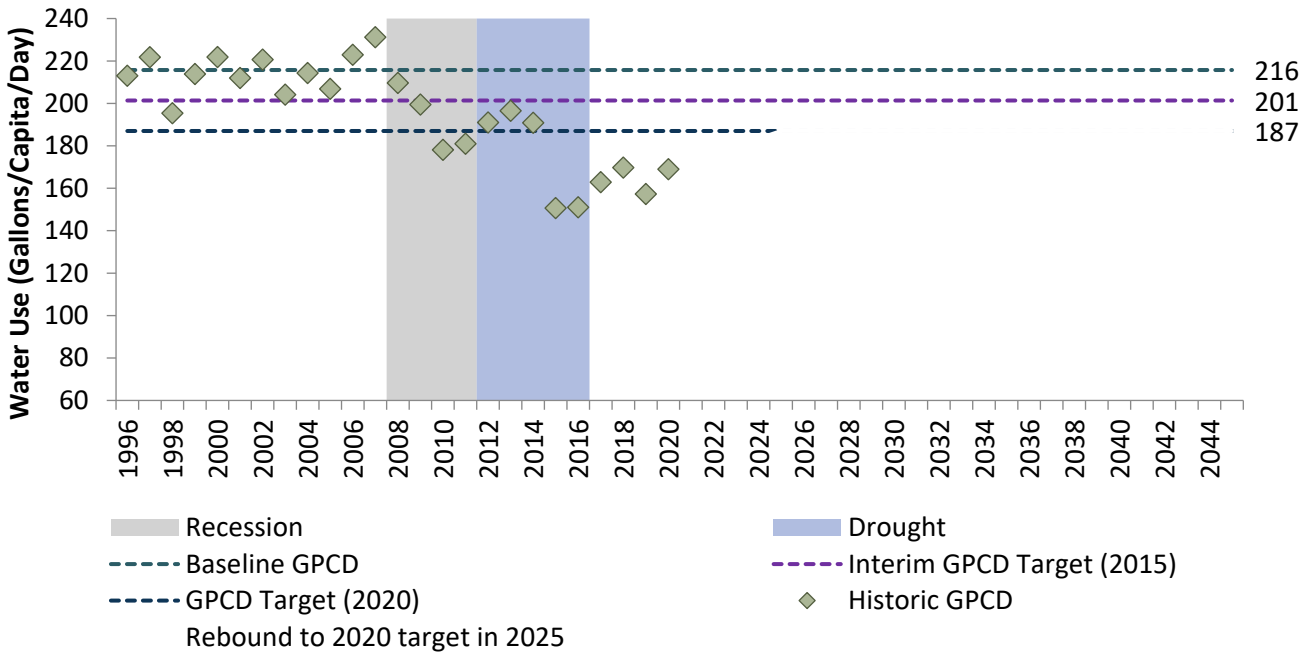

Figure 4-2. Los Angeles County District Past, Current, and Projected Per Capita Water Use (GPCD)

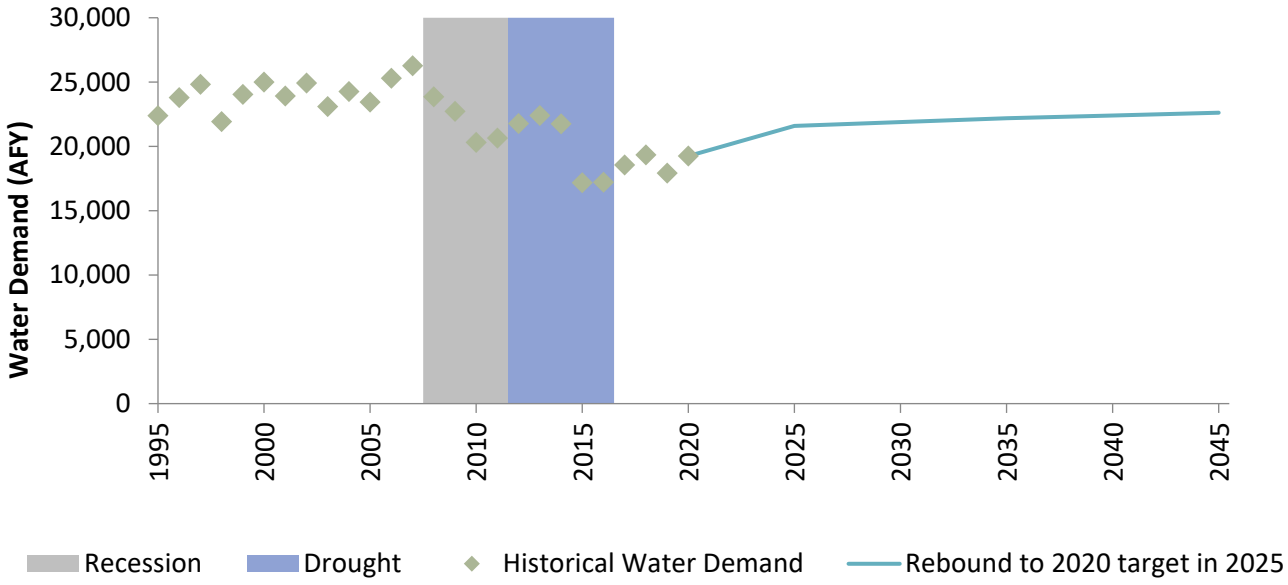

Figure 4-3. Los Angeles County District Past, Current, and Projected Water Demand (AFY)

Table 4-5. DWR 4-2R Projected Demands for Water – Los Angeles County District

USE TYPE	ADDITIONAL DESCRIPTION	PROJECTED WATER USE (AFY)				
		2025	2030	2035	2040	2045
Other	Residential - Single-Family & Multi-Family	13,506	13,689	13,872	14,001	14,130
Commercial		4,475	4,538	4,601	4,647	4,693
Industrial		172	174	177	178	180
Other	Other Public Authority	895	908	921	930	940
Other	Company Accounts	36	36	37	37	38
Other	Fire Service	2	2	2	2	2
Other	Miscellaneous	64	65	66	67	67
Losses		2,446	2,482	2,518	2,543	2,568
	TOTAL:	**21,595**	**21,894**	**22,193**	**22,405**	**22,618**

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Table 4-6. Current and Projected Deliveries by Service Area (AFY)

	2020	2025	2030	2035	2040	2045
Baldwin Hills	2,945	3,763	3,819	3,875	3,883	3,891
Duarte	6,221	5,949	6,053	6,157	6,232	6,307
San Marino	10,287	11,884	12,023	12,161	12,291	12,421
TOTAL	**19,453**	**21,595**	**21,894**	**22,193**	**22,405**	**22,618**

* Figures include current and estimated losses for each service area

4.2.4 Characteristic Five-Year Water Use

In addition to past and projected uses, the UWMP more closely analyzes anticipated conditions for the next five years (2021 – 2025). In the next five years, the Los Angeles County District anticipates that demands may increase by approximately 2,348 AFY from 2020. This increase is based on normal year conditions representing a "rebound" from current 2020 use, which is likely lower than typical unconstrained demand as many of the residents in the Los Angeles County Districts service area continue to conserve water after the most recent drought that ended in 2016. Details on an analysis for the next five years are discussed in **Chapter 7**.

4.3 Water Use for Lower Income Households

The California Water Code section 10631.1 requires demand projections to include projected water use for single-family and multi-family residential housing needed for lower income households. Low-income households are defined as households making less than 80% of median household income (includes very low-income and low-income designations). The Regional Housing Needs Assessment (RHNA) determines the housing needs in each jurisdiction over the planning period. SCAG's current RHNA planning period is from October 2021 through October 2029. The 6th Cycle Final RHNA Allocation Plan was adopted on March 4, 2021 (Southern California Association of Governments, 2021).

The Los Angeles County District's service areas overlie various jurisdictions, each with its own number of projected low-income housing units. Estimates of the areas of the Los Angeles County District's service areas overlying multiple jurisdictions were calculated in GIS. The Baldwin Hills service area overlaps with 3 jurisdictions, the Duarte service area overlaps with 6 jurisdictions and the San Marino service area overlaps with 11 service areas. Projections for new low-income units within the Los Angeles County District's service areas were developed by assuming a portion, based on area, of a uniform distribution of low-income units within each jurisdiction. It is estimated that a total of 2,040 new very low-income and low-income units will be needed in the Los Angeles County District service area from October 2021 through October 2029, which is equivalent to approximately 255 new units annually. Of the 2,040 new homes, it is estimated that a total of 61 homes will be constructed in Baldwin Hills, 378 in Duarte, and 1,602 in San Marino. The amount of water used per connection was estimated based on historical connection and delivery data. The average demand per the average number of connections between 2016 to 2020 is 0.453 AFY/connection. **Table 4-7** shows the portion of the total demand that is assumed to be for new low-income households. All demand for new low-income households is included in the total demand projections presented previously.

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Table 4-7. Low Income Housing and Demand Estimate

	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	TOTAL
New Low-Income Residential Housing Units – Los Angeles County District Service Area	255	255	255	255	255	255	255	255	2,040
2016-2020 Average Los Angeles County District Residential Demand Factor, AFY/single family connection	0.453	0.453	0.453	0.453	0.453	0.453	0.453	0.453	N/A
New Low-Income Residential Housing Demand, AFY – Los Angeles County District Service Area	116	116	116	116	116	116	116	116	924

Figures in table are rounded.

4.4 Climate Change Considerations

Future water use may be affected by climate change.

"Projections of climate change in California indicate a further intensification of wet and dry extremes and shifting temperatures that can…affect both water use and supplies. Extreme and higher temperatures can lead to increases in water use…Projections of more frequent, severe, and prolonged droughts could lead to not only less surface water available, but also exacerbating ongoing stressors in groundwater basins across the state" (California Department of Water Resources, March 2021).

Higher temperatures decrease the amount of precipitation available for groundwater recharge and from surface water sources while increasing water use, especially for outdoor use. Reductions in future supply due to impacts associated with climate change were considered as part of the projected supply discussed in **Chapter 6** and **Chapter 7**. Increases in future water use patterns due to climate change factors were considered as part of the conservative demand projection provided in this chapter.

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5 SBX7-7 Baseline, Targets and 2020 Compliance

This chapter describes compliance with the Water Conservation Act of 2009 Baseline, Targets, and 2020 Compliance. The goal of this chapter is to demonstrate compliance with the 2020 targeted water-use reduction of 20 percent.

IN THIS SECTION

- Target and Baseline Method Summary
- Baselines & Targets
- SBX7-7 Forms and Tables
- 2020 Compliance

Senate Bill X7-7 (SBX7-7), which was incorporated into the UWMP Act in 2009, requires all water suppliers to increase water use efficiency with the overall goal to decrease per-capita water consumption within the state by 20 percent by the year 2020. SBX7-7 required DWR to develop certain criteria, methods, and standard reporting forms through a public process that could be used by water suppliers to establish baseline water use and determine water conservation targets.

This chapter describes the Los Angeles County District's methods for calculating baseline and target water consumption in accordance with DWR's *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (California Department of Water Resources, 2016). The SBX7-7 Verification Forms and Compliance Forms, which are required to be submitted to DWR to demonstrate compliance with the SBX7-7 requirements, are presented in **Appendix E**. This chapter also shows that the Los Angeles County District achieved the 2020 water use target of 187 GPCD, with a calculated GPCD for 2020 of 169 GPCD.

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5.1 SBX7-7 Forms and Tables

The SBX7-7 Verification Form was submitted as part of the Los Angeles County District's 2015 UWMP to establish the baseline and 2020 water use target. Since the 2015 UWMP there have been no changes to the Los Angeles County District's service area. The Los Angeles County District's baseline and 2020 water use target are summarized in **Table 5-1**.

The Los Angeles County District selected SBX7-7 Method 4, which is an approach developed by DWR to estimate water savings factors associated with implementation of various conservation measures and use those factors to calculate water use targets. Method 4 results in the 2020 target of 187 GPCD. Regardless of the target calculation method, each agency must confirm that the calculated 2020 target meets the minimum reduction required. This minimum reduction amount is defined as 5 percent of the 5-year baseline per capita water use of 217 GPCD shown in **Table 5-1** The 2020 target must be less than 95% of the 5-year baseline. Since the 2020 Target of 187 GPCD is less than 95% of 217, or 206 GPCD, the 2020 target meets the minimum required reduction and does not need to be adjusted. A copy of the completed SBX7-7 Verification Forms is included in **Appendix E**.

Table 5-1. DWR 5-1R Baselines and Targets Summary

BASELINE PERIOD	START YEAR	END YEAR	AVERAGE BASELINE GPCD*	CONFIRMED 2020 TARGET *
10-15 Year	1999	2008	216	187
5 Year	2004	2008	217	

*All values are in Gallons per Capita per Day (GPCD)
*All cells in this table are populated manually from the supplier's SBX7-7 Verification Form.

5.2 2020 Compliance Daily Per-Capita Water Use (GPCD)

As part of the 2020 UWMP, the Los Angeles County District must demonstrate compliance with its 2020 water use target by completing the SBX7-7 2020 Compliance Form. This Form is an abbreviated version of the SBX7-7 Verification Form solely for 2020 compliance calculations. A summary of the 2020 SBX7-7 2020 compliance table is shown in **Table 5-2**. There were no extreme cases that warranted an adjustment to the GPCD compliance calculation. The calculated GPCD for 2020 is 169 GPCD, which meets the Los Angeles County District's 2020 SBX7-7 target of 187 GPCD. A copy of the completed SBX7-7 Compliance Forms is included in **Appendix E**.

Table 5-2. DWR 5-2R 2020 Compliance

	OPTIONAL ADJUSTMENTS TO 2020 GPCD						
ACTUAL 2020 GPCD*	EXTRAORDINARY EVENTS*	ECONOMIC ADJUSTMENT*	WEATHER NORMALIZATION*	TOTAL ADJUSTMENTS*	ADJUSTED 2020 GPCD*	2020 CONFIRMED TARGET GPCD*	SUPPLIER ACHIEVED TARGETED REDUCTION IN 2020
169	0	0	0	0	169	187	Yes

*All values are in Gallons per Capita per Day (GPCD)
*All cells in this table are populated manually from the supplier's SBX7-7 Verification Form.

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URBAN WATER MANAGEMENT PLAN

6 Water Supply Characterization

This chapter describes and quantifies the Los Angeles County District's current and projected water supplies. Each water source is characterized with information needed to manage water resources, assess supply reliability, perform the Drought Risk Assessment, and prepare and implement the WSCP.

The following sections provide an overview of the Los Angeles County District's current and projected water supplies through 2045. The Los Angeles County District relies multiple water supply sources as described in more detail in the following sections. The Los Angeles County District anticipates meeting customer demands through 2045.

IN THIS SECTION

- Water Supply Characterization
- Wastewater and Recycled Water
- Future Water Projects
- Climate Change
- Energy Intensity t

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6.1 Water Supply Analysis Overview

This section describes and quantifies the current and projected sources of potable water available to the Los Angeles County District for the 25-year period covered by the UWMP. A description and quantification of existing and potential non-potable recycled water uses and supply availability is also included. The Los Angeles County District's water supply sources include: groundwater from the Central Basin, MSGB, and Raymond Basin; MSGB integrated right from the San Gabriel River; and imported water from WBMWD, Upper District, and MWD. **Table 6-1** provides a summary of the existing and planned potable water supply sources discussed in this chapter from 2020 to 2045 in five-year increments.

Table 6-1. Summary of Current and Projected Potable Water Supplies (AFY) (DWR Tables 6-8 and 6-9)

WATER SUPPLY SOURCES	2020[1]	2025	2030	2035	2040	2045
BALDWIN HILLS						
Groundwater - Central Basin[2]	1,554	2,175	2,175	2,175	2,175	2,175
Purchase from WBMWD[3]	1,391	1,588	1,644	1,700	1,708	1,716
SUBTOTAL	**2,945**	**3,763**	**3,819**	**3,875**	**3,883**	**3,891**
DUARTE						
Groundwater - MSGB[4]	2,770	2,770	2,770	2,770	2,770	2,770
MSGB Integrated Right[5]	1,672	1,672	1,672	1,672	1,672	1,672
Surface Water for Irrigation[5]	0	0	0	0	0	0
Upper District Replacement Water[6]	1,779	1,507	1,611	1,716	1,1790	1,865
SUBTOTAL	**6,221**	**5,949**	**6,053**	**6,157**	**6,232**	**6,307**
SAN MARINO						
Groundwater - MSGB Allocation[4]	6,048	6,048	6,048	6,048	6,048	6,048
MSGB Replacement Water[4]	1,238	2,785	2,923	3,062	3,192	3,321
Groundwater - Raymond Basin[7]	1,397	1,609	1,609	1,609	1,609	1,609
Purchase from MWD[8]	1,604	1,442	1,442	1,442	1,442	1,442
SUBTOTAL	**10,287**	**11,884**	**12,023**	**12,161**	**12,291**	**12,421**
TOTAL	**19,453**	**21,595**	**21,894**	**22,193**	**22,405**	**22,618**

[1] The supplies from 2020 are based on actual production and purchases.

[2] For more information on the Central Basin allocation see Section 6.2.1.1.1

[3] Assumes all demand not met by the Central Basin annual allocation will be met by purchasing water from WBMWD. For more information see Section 6.2.3.

[4] For more information on the MSGB allocation see Section 6.2.1.1.2.

[5] For more information on MSGB Integrated Right see Section 6.2.2

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[6] The amount of demand in each year not met by the allocations in the MSGB is assumed to be pumped from the MSGB and untreated replacement water will be purchased from MWD through Upper District. For more information see 6.2.3

[7] For more information on the Raymond Basin allocation see Section 6.2.1.1.3

[8] Potable water is purchased from MWD via the City of San Marino for demand exceeding the MSGB groundwater allocation. As allowed by Section 4501(b) of MWD's Administrative Code, the City of San Marino purchases MWD water as a member agency and the water is delivered directly into the Los Angeles County District's water system to distribute it within the City's corporate area. The City of San Marino has an annual average Tier 1 maximum allocation of 1,442 afy. In 2020, total purchased water from MWD includes water purchased from So. Pasadena which is assumed to be water from MWD. For more information see 6.2.3

6.2 Water Supply Characterization

The current and future water supplies for the Los Angeles County District consist of groundwater, MSGB integrated right from the San Gabriel River and purchased or imported water as described in the following sections.

6.2.1 Groundwater

Projected groundwater supplies are determined by the Los Angeles County District's stipulated allocation as defined in the judgment of each basin. The amount of demand that is not met by groundwater allocations is assumed to be met by purchasing supplemental water from a wholesaler for potable direct use or as untreated replacement water for groundwater pumping. However, the availability of replacement water may vary from year to year depending on regional drought conditions and other factors as described in **Chapter 7**. A summary of the Los Angeles County District groundwater pumping from 2016 to 2020 is provided in **Table 6-2**. **Table 6-3** shows the projected groundwater pumping from each basin through 2045.

Table 6-2. DWR 6-1R Groundwater Volume Pumped (AFY)

GROUNDWATER TYPE	LOCATION OR BASIN NAME	2016	2017	2018	2019	2020
Alluvial Basin	Baldwin Hills - Central Basin	2,325	1,934	1,698	1,168	1,554
Alluvial Basin	Duarte - MSGB	5,055	5,612	5,852	5,589	6,221
Alluvial Basin	San Marino - MSGB	5,831	6,581	6,864	6,607	7,286
Alluvial Basin	San Marino - Raymond Basin	2,123	2,213	2,314	1,914	1,397
	TOTAL:	**15,334**	**16,341**	**16,728**	**15,278**	**16,458**

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Table 6-3. Los Angeles County District Projected Groundwater Supplies (AFY)

BASIN NAME(S)	2025	2030	2035	2040	2045
BALDWIN HILLS					
Groundwater - Central Basin	2,175	2,175	2,175	2,175	2,175
DUARTE					
Groundwater – MSGB Allocation	2,770	2,770	2,770	2,770	2,770
MSGB Integrated Right	1,672	1,672	1,672	1,672	1,672
SAN MARINO					
Groundwater - MSGB Allocation	6,048	6,048	6,048	6,048	6,048
Groundwater - Raymond Basin	1,609	1,609	1,609	1,609	1,609
TOTAL GROUNDWATER PUMPED	**14,274**	**14,274**	**14,274**	**14,274**	**14,274**
PERCENT OF TOTAL WATER SUPPLY	**66%**	**65%**	**64%**	**64%**	**63%**

* For more information on how these values were calculated, see Table 6-1.

6.2.1.1 Groundwater Basins

The Los Angeles County District produces its groundwater from the Central Basin, the MSGB, the Canyon Basin, which is a sub-basin of the MSGB, and the Raymond Basin. Each of the groundwater basins are adjudicated and are described in more detail below.

6.2.1.1.1 Central Basin

The Baldwin Hills service area obtains its groundwater from the Central Basin (see **Figure 6-1**). The Central Basin lies east of the West Coast Basin and is bounded on the north by the La Brea high surface divide and by less permeable tertiary rocks of the Elysian, Repetto, Merced and Puente Hills to the northeast and east. The total surface area is 277 square miles with a total storage capacity of 4.5 trillion gallons of groundwater (California Department of Water Resources, 2004). The third amendment to the Central Basin Groundwater Adjudication (Third Amended Judgment or Judgment) was entered by the Los Angeles Superior Court on December 23, 2013. In it, for the first time in this area, the Court allows the water rights holders, themselves, to have direct input into how the Judgment is administered and enforced. Among other things, the Judgment now permits parties holding water rights to store water in the Central Basin for later recovery (Water Replenishment District of Southern California Central Basin Watermaster Administrative Body, 2014).

Under this new Judgment, DWR retired as the Watermaster and all records have been transferred to the new Central Basin Watermaster. The Central Basin Watermaster is now composed of three bodies, one of which is the Water Rights Panel (The Panel), the second is the Administrative Body (Water Replenishment District of Southern California), and the third body is the Storage Panel, which consists of The Panel plus the Water Replenishment District of Southern California Board of Directors.

The Panel is made up of seven Central Basin water rights holders. Six are elected by their representative group, with votes weighted by water rights; one member by those holding less than 3,000 acre feet, one by the Small Pumpers Group, one by those holding between 3,000 and 10,000 acre feet, and three by those holding greater than 10,000 acre feet water rights. The seventh Panel Member is elected at large by all water rights holders at one vote each. Along with the Administrative

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Body and the Storage Panel, the Water Rights Panel began its Central Basin Watermaster duties in July 2014.

The Los Angeles County District's Baldwin Hills service area previously had a fixed annual allocation of 2,067 acre-feet of the Central Basin Allowed Pumping Allocation (APA); however, this allocation was increased during the 2017-2018 year to 2,175 AFY (California American Water, 2019) with leased right options purchased from other purveyors in the Central Basin including Farmers & Merchants Trust Co of Long Beach and Chevron USA. Inc.

- To provide flexibility in the control of groundwater extractions, the Judgment contains provisions allowing each party to carry over into the succeeding administrative year a portion of its unused APA and in some cases to over extract. This flexibility was necessary to meet unforeseen water demand.

The Judgment provides for over extractions under certain conditions. A party may over extract by 20% of its APA or 20 AF, whichever is greater. When a party over extracts in violation of the Judgment, the Water Rights Panel notifies the party to resolve the over extraction issue. Under certain circumstances, a party may over extract in a greater amount; however, prior approval must be obtained from the Water Rights Panel. The over extraction must be made up in the following administrative year unless The Water Rights Panel concludes that to require the party to make up the over extraction would create an unreasonable hardship for the party. In such cases, The Panel may grant relief from the requirement that the party must make up the over extraction in the following year, such as prorating the reduction in the party's APA over a period of up to five years (Water Replenishment District of Southern California Central Basin Watermaster Administrative Body, 2014).

The groundwater management plan for the Central Basin is the 2018-2019 groundwater monitoring plan which can be found in **Appendix I**.

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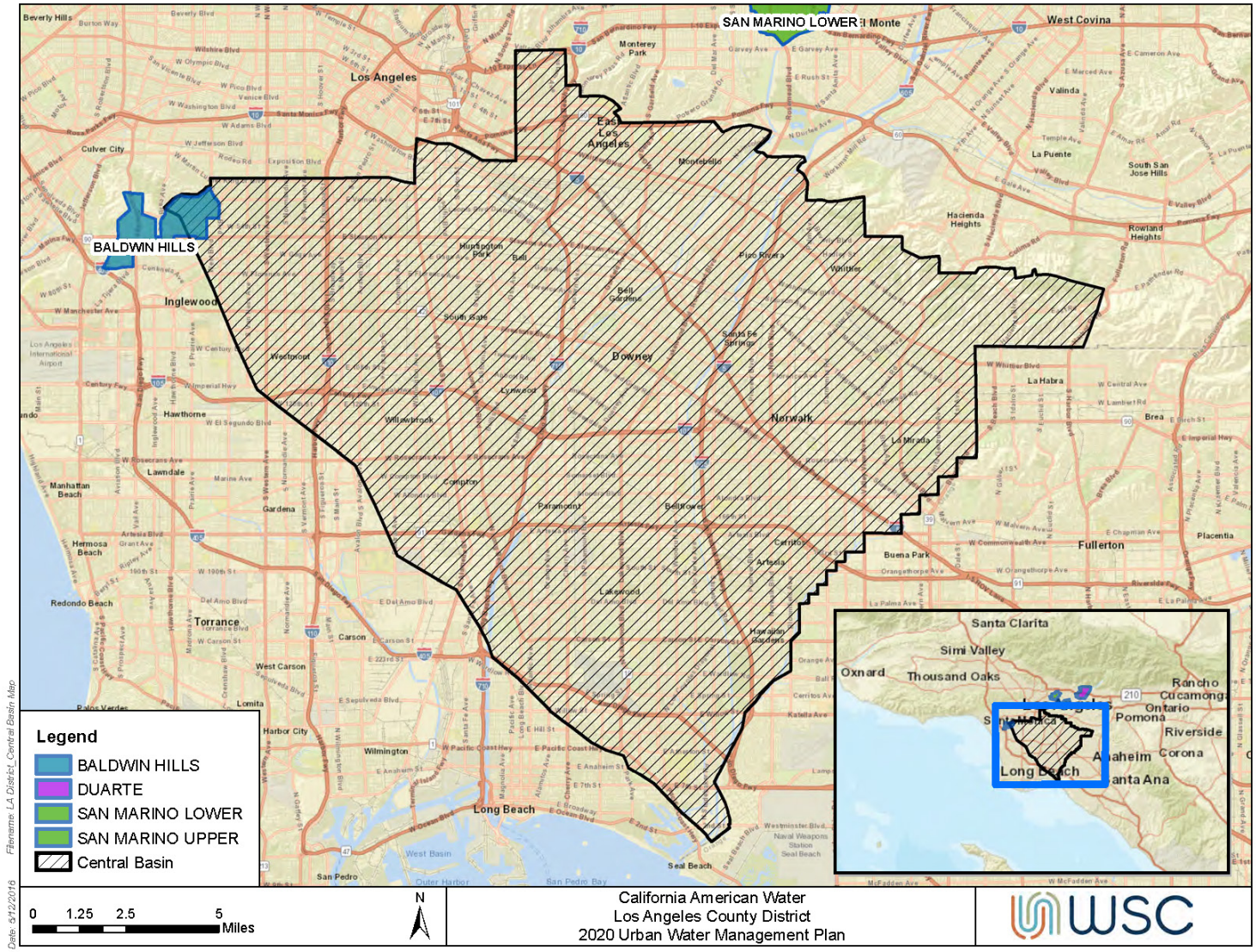

Figure 6-1. Central Basin Boundary

6.2.1.1.2 Main San Gabriel Basin and the Canyon Basin

The Duarte and San Marino service areas overlie the MSGB (see **Figure 6-2**). The MSGB is an unconfined aquifer which provides up to 90 billion gallons of groundwater annually to San Gabriel Valley's 1.4 million residents. The total surface area of the MSGB is 167 square miles and contains about 2.8 trillion gallons of groundwater (Main San Gabriel Basin Watermaster, 2015). The San Gabriel Mountains border the north with smaller hills including San Jose, Puente, Merced, and Repetto forming the east, south, and southwest borders.

The MSGB is an adjudicated basin that is subject to an entry of judgment through the Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al., Los Angeles County Case No. 924128, Judgment entered January 4, 1973 (MSGB Judgment). The MSGB Judgment states that "in each and every calendar year commencing with 1953, the Basin has been and is in Overdraft". The Los Angeles County District's Duarte service area is classified as an "Integrated Producer", which provides for two types of water allocation rights: pumping rights and surface water rights. Duarte has an adjudicated right to pump 1.84634% of the annual Operating Safe Yield (OSY) of the MSGB, which is established annually by the MSGB Watermaster based on prevailing hydrologic conditions. Duarte also has a fixed MSGB integrated right from the San Gabriel River of 1,672 acre feet per year, which is discussed in Section 6.2.2. The Los Angeles County District's San Marino service area has an adjudicated right to 4.03204% of the OSY for the MSGB.

The extraction amount available to water producers is not restricted, but the MSGB Judgment provides a means for replacing all annual extractions in excess of a Party's annual right with Supplemental Water to maintain a sustainable operation. If a producer extracts water in excess of its portion of the annual OSY, it must pay a Replacement Water assessment, which will be used by the MSGB Watermaster to purchase an equivalent volume of Supplemental Water to recharge the MSGB. The MSGB Watermaster obtains untreated imported water through one of three Responsible Agencies: Upper District, San Gabriel Valley Municipal Water District, and Three Valleys Municipal Water District, depending on the Responsible Agency service area in which the excess pumping occurred.

The MSGB Watermaster's Five-Year Water Quality and Supply Plan 2020-21 to 2024-25 (Main San Gabriel Basin Watermaster, 2021) serves as the groundwater management plan and can be found in **Appendix I**. Total Basin production during fiscal year 2019–20 was about 192,600 acre-feet, which was about 1% higher than the previous year. Production in excess of water rights during fiscal year 2019–20 was about 37,200 AF, about the same as the prior year and about 1% lower than the long-term average of about 37,700 AF. The Watermaster aggressively responded to the decreasing trend of the groundwater level at the Key Well (The Baldwin Park Key Well is used as the benchmark for determining how the groundwater supply for the entire Basin is trending) during fiscal year 2019–20 by establishing an OSY of 150,000 AF for fiscal year 2020–21 (identical to the OSY for the last six years and about 45,000 AF below the long-term average of about 195,000 AF) (Main San Gabriel Basin Watermaster, 2021)..

A portion of the Duarte service area also overlies the Canyon Basin, which is a subbasin of the MSGB and is thus governed by the MSGB Judgement and MSGB Watermaster. The Canyon Basin is an unconfined aquifer bounded by the San Gabriel Mountains to the north, west and east and the Duarte Fault to the south. The total water storage capacity of the Canyon Basin is much more limited than the MSGB, at about 15,000 AF.

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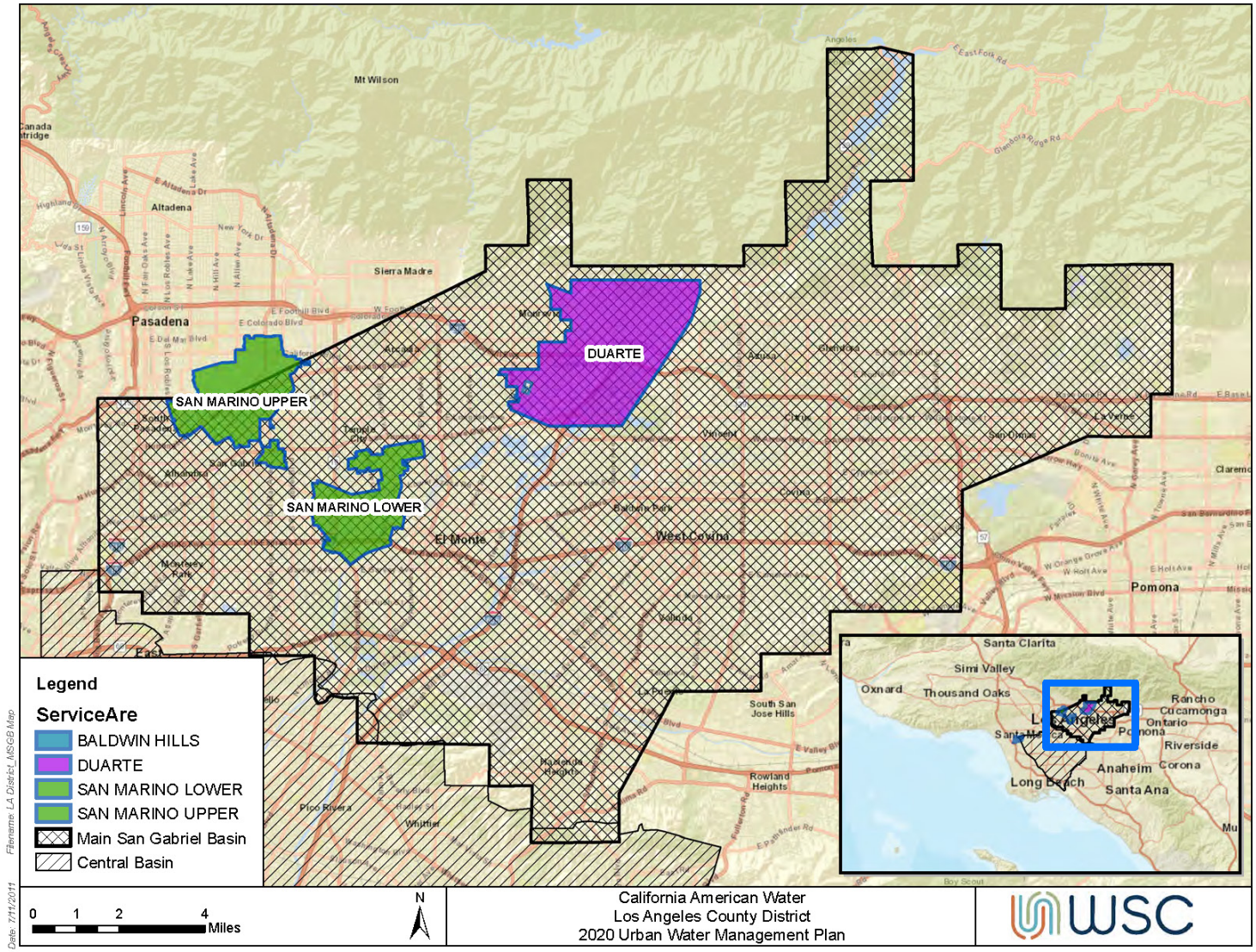

Figure 6-2. Main San Gabriel Basin Boundary

6.2.1.1.3 Raymond Basin

The San Marino service area is also located within the Raymond Basin (see Figure 6-3). The Raymond Basin is separated from the MSGB by the Raymond fault which lies to the north of the MSGB. The Raymond Basin covers about 40.9 square miles and is estimated to store a maximum of approximately 472 billion gallons of groundwater (California Department of Water Resources, 2004). The Los Angeles County District has a fixed allocation of 2,299 AFY. Historically, California American Water could have withdrawals exceeding the fixed allocation by up to 10% without violating the basin's adjudication. However, in January 2009, the Raymond Basin Management Board adopted a resolution that imposed a 30 percent reduction in water rights over a five-year period. The purpose of this resolution was to address declining water levels in the basin. For the Los Angeles County District this means that its annual decreed rights of 2,299 AFY was reduced to 1,609 AFY. The Raymond Basin is monitored by the Raymond Basin Management Board. The groundwater management plan for the Raymond Basin is the 2019-2020 annual report which can be found in **Appendix I**.

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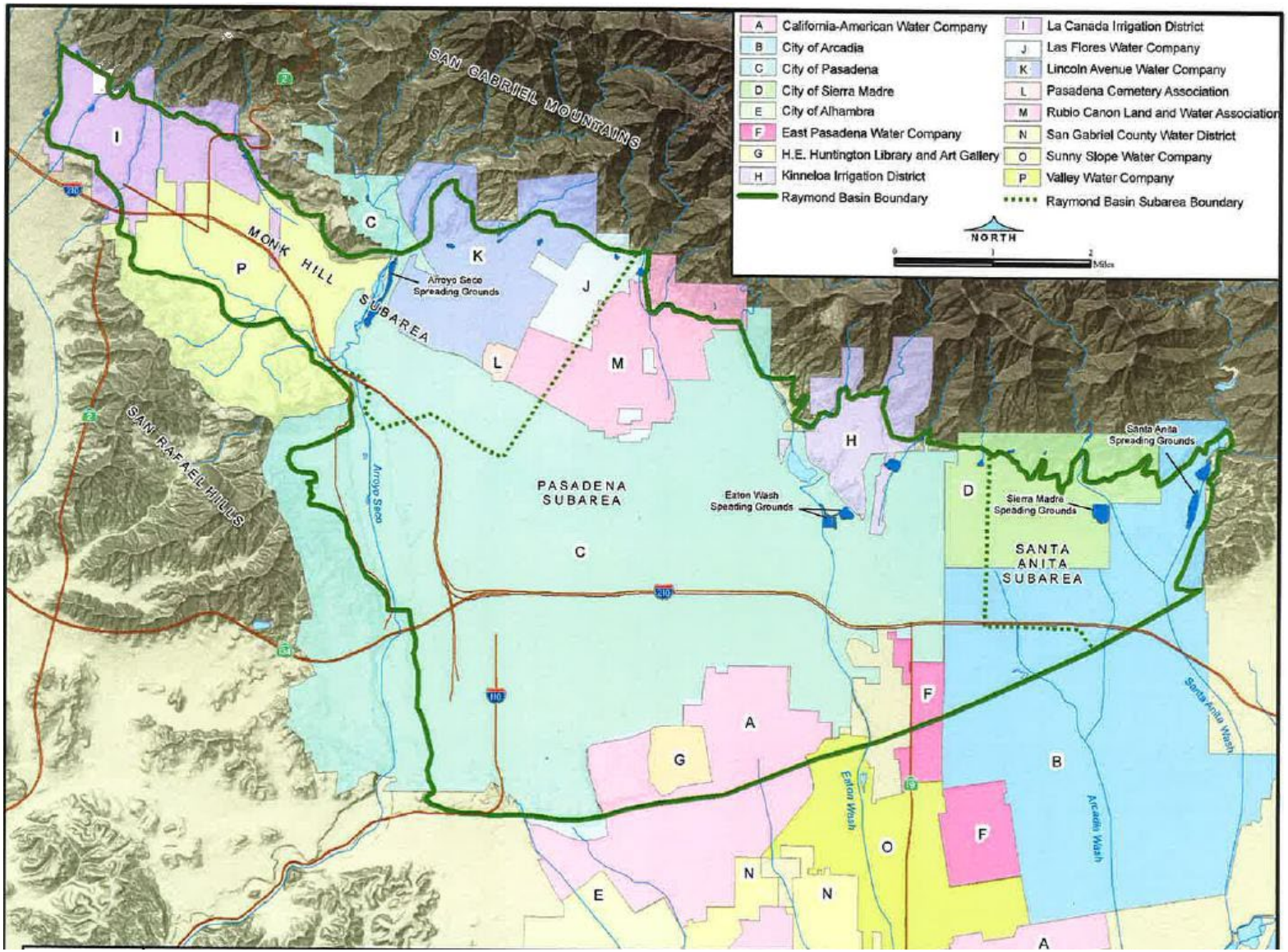

Figure 6-3. Raymond Basin Boundary (Raymond Basin Management Board, 2015)

6.2.2 Surface Water

In the Duarte service area, the Los Angeles County District is classified as an "Integrated Producer" in the MSGB Judgement that provides for two types of water allocation rights including a diversion component and a pumping component, which was previously discussed. The Los Angeles County District has an integrated right from the San Gabriel River (diversion right). The integrated right is fixed at an annual allocation of 1,672 AFY. Historically, water has been diverted from the San Gabriel River located in the San Gabriel watershed. Water that is released from the San Gabriel Reservoir is delivered through a weir located adjacent to the City of Pasadena power plant and water from Morris Reservoir is diverted directly from the San Gabriel River The full allocation of water (1,672 AFY) is applied to the Fish Canyon spreading grounds or returned to the San Gabriel River and spread further downstream. The spreading functions to recharge the aquifers which supply Duarte's wells. The reservoir and spreading activity is managed by the Los Angeles County Department of Public Works in conjunction with water purveyors with surface water diversion rights.

The Duarte Irrigation system was previously in use by 52 customers but it is no longer in service. The irrigation system demand is now supplied entirely with water from the existing potable system.

6.2.3 Purchased or Imported Water

The Los Angeles County District obtains wholesale water from three wholesale water agencies: MWD via the City of San Marino; Upper District via the MSGB Watermaster; and WBMWD. Treated water from MWD and WBMWD is used directly for potable use, whereas untreated water from Upper District is used for groundwater replenishment in the MSGB. The City of San Marino, Upper District, and WBMWD are Member Agencies of MWD. The current and projected supplies from all wholesale agencies are shown in Table 6-1.

Groundwater purveyors of the Central Basin may exceed their fixed groundwater production allocation by up to 20% without violating the basin's adjudication. The difference however must be compensated for in the following year. To make up for exceeding their allocation, the Los Angeles County District purchases water from WBMWD.

WBMWD Groundwater producers in the MSGB are allowed to exceed their OSY allocation provided they pay an assessed replenishment fee to the MSGB Watermaster. Most years the MSGB is over pumped because total demand from the various producers, including the Los Angeles County District, exceeds the available safe yield established by the Watermaster. The Watermaster uses the funds generated from the replenishment fees to purchase replacement water from wholesale agencies that have access to imported water. The authorized wholesaler for the Los Angeles County District is the Upper District. This replacement water is then delivered to spreading grounds to replenish the aquifer. Imported water has historically been available for this purpose. However, in recent years, drought mandated cutbacks from the California State Water Project (SWP) and the Colorado River Aqueduct (CRA) have severely limited the availability of imported water making this management strategy increasingly challenging. For that reason, the MSGB Watermaster has implemented and is expanding a variety of programs that have raised groundwater assessments to purchase water early when available, and developed storage programs to provide a drought buffer and increase regional water supply independence. Overall, the management structure has been effective in keeping the MSGB in balance by working collaboratively with overlapping agencies and basins (e.g., working with Producers in the Basin, and through joining regional and statewide drought and water supply programs). It is possible that in the future the Watermaster may have to institute mandatory water conservation measures in order to manage the aquifer.

For its San Marino service area, the Los Angeles County District also has access to treated water from MWD via the City of San Marino, which is a Member Agency of MWD. The Los Angeles County District

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purchases treated MWD water from the City of San Marino, which enters the San Marino water system and is used directly for potable use. As allowed by Section 4501(b) of MWD's Administrative Code, the City of San Marino purchases MWD water as a member agency and the water is delivered directly into the Los Angeles County District's water system to distribute it within the City's corporate area (California Metropolitan Water District of Southern California, 2014). The City of San Marino has an annual average Tier 1 maximum allocation of 1,442 AFY (California Metropolitan Water District of Southern California, 2015). MWD has completed its water service reliability assessment in their Draft 2020 UWMP and determined that, under the conditions required by the UWMP, it has supply capabilities sufficient to meet expected demands from 2025 through 2045 under a single dry- year condition and period of drought lasting five consecutive water years, as well as in a normal water year hydrologic condition (Metropolitan Water District of Southern California, 2021).

The Los Angeles County District also purchases a small amount of water from the City of South Pasadena. However, this water is used for peaking purposes to meet hourly changes in demand in a single pressure zone of its San Marino service area and is not projected as a reliable source of supply.

6.2.4 Stormwater

Stormwater is not intentionally diverted for beneficial reuse by the Los Angeles County District.

6.2.5 Wastewater and Recycled Water

The Los Angeles County District does not collect or treat any of the wastewater generated within its service area. The Los Angeles County District does not currently use recycled water within its service area; however, it is continually looking for opportunities and working with its regional partners to use recycled water within the service area. Wastewater Collection, Treatment, and Disposal

Los Angeles County Sanitation District (LACSD) collects and treats the wastewater within the Los Angeles County District's service area boundaries. Based on a wastewater generation factor of 83 gallons per capita per day (gpcd), provided by LACSD staff, an estimate of gross wastewater production was calculated. LACSD recycled about 37% of its wastewater and that amount of gross recycled water was applied to the estimate of wastewater produced by the Los Angeles County District customers to come up with an estimate of how much of the Los Angeles County District's wastewater is treated to recycled water standards. There are four treatment facilities that service the Los Angeles County District's service areas: Los Coyotes Water Reclamation Plant (LCWRP), San Jose Water Reclamation Plant (SJCWRP), Whittier Narrows Water Reclamation Plant (WNWRP), and the Joint Water Pollution Control Plant (JWPCP). The wastewater influent from the Los Angeles County District service areas is treated by different facilities at different times by LACSD. **Figure 6-4** shows LACSD's tributary areas to its various treatment facilities. **Table 6-4** shows wastewater collected and treated by LACSD from the Los Angeles County District's service areas in 2020.

LACSD's treatment facilities carry out primary, secondary and tertiary treatment, except for JWPCP, which only carries out primary and secondary treatment. It is not possible to know to what extent the Los Angeles County District's wastewater is treated as it is mixed in with an immense amount of other wastewater. Therefore, it is estimated that 37% of the wastewater is treated to recycled water standards but only 62% of that amount is beneficially reused (Los Angeles County Sanitation Districts, 2020). The remaining recycled water is discharged to the ocean. It is estimated that 3,516 AF of the Los Angeles County District's wastewater was treated to recycled water standards and 2,180 AF was beneficially reused by recycled water purveyors in 2020. Wastewater from the Los Angeles County District's service area will continue to be treated at the four treatment facilities and a portion will be recycled and beneficially reused outside the Los Angeles County District's service area. Therefore, projections for recycled water beneficial use within the Los Angeles County Districts service area are not included in the UWMP. In the 2015 UWMP it was estimated that all landscape demands could

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potentially be met through recycled water use which would total 142 AFY; however, the Los Angeles County District does not currently use any recycled water in its service areas.

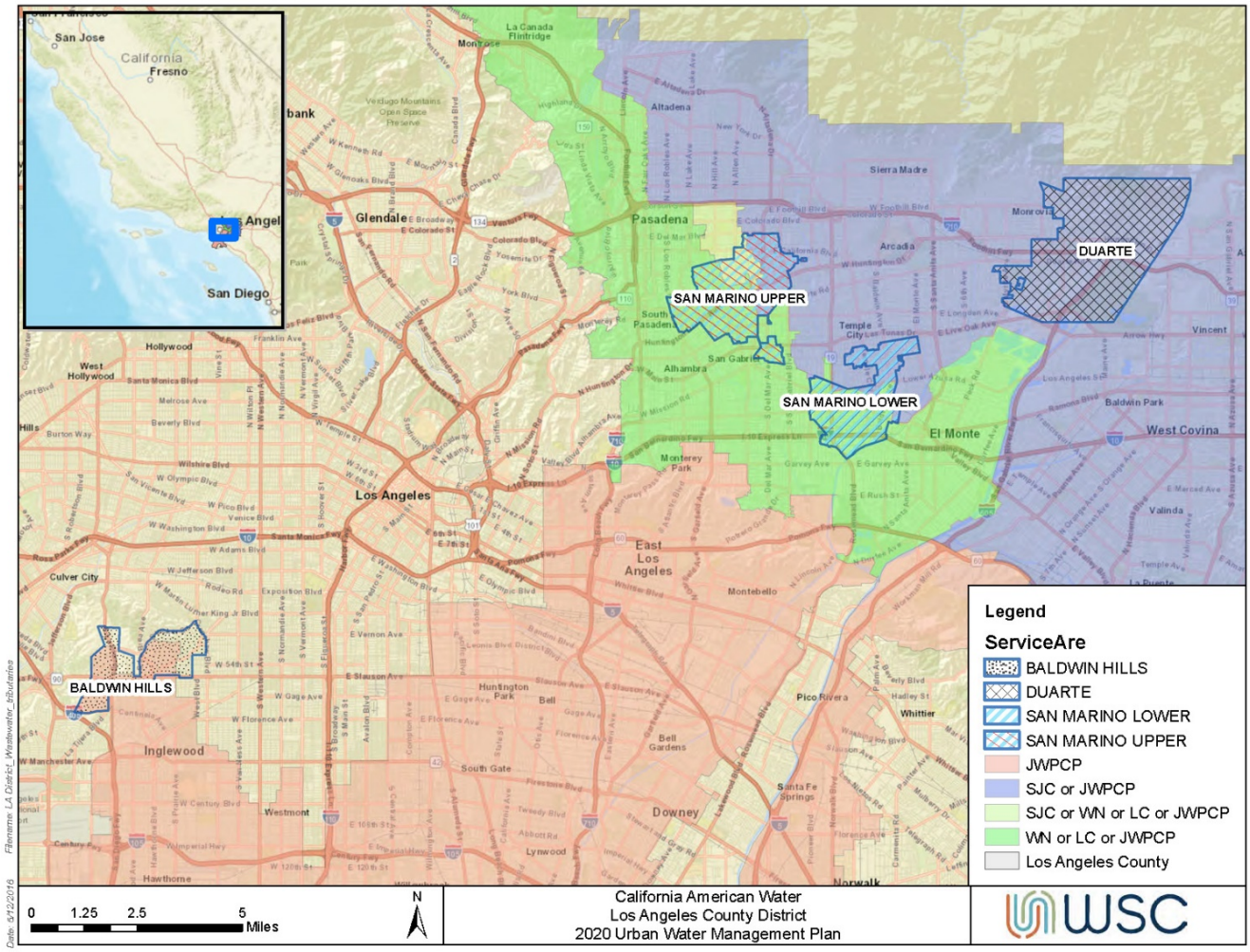

Figure 6-4. LACSD Treatment Facility Tributary Areas

Table 6-4. DWR 6-2R Wastewater Collected within Service Area in 2020

WASTEWATER COLLECTION			RECIPIENT OF COLLECTED WASTEWATER			
NAME OF WASTEWATER COLLECTION AGENCY	WASTEWATER VOLUME METERED OR ESTIMATED	WASTEWATER VOLUME COLLECTED FROM UWMP SERVICE AREA IN 2020 (AFY)	NAME OF WASTEWATER AGENCY RECEIVING COLLECTED WASTEWATER	WASTEWATER TREATMENT PLANT NAME	WASTEWATER TREATMENT PLANT LOCATED WITHIN UWMP AREA	WWTP OPERATION CONTRACTED TO A THIRD PARTY
Los Angeles County Sanitation District	Estimated	9,452	Los Angeles County Sanitation District	LCWRP; SJCWRP; WNWRP; JWPCP	No	No

The Los Angeles County District is looking into providing recycled water to existing customers within the Baldwin Hills service area. Recycled water would be purchased from WBMWD and would require a connection to the existing recycled water pipe within the City of Inglewood, a new pipeline that extends north into the Los Angeles County District's service area, and two pump stations. Recycled water would be primarily supplied to landscaping (such as parks, schools, landscaping, cemeteries, and golf courses) (California American Water, 2019). In addition, MWD and Upper District are proposing recycled water projects that may also benefit California American Water and their customers. Although this may ultimately provide a potential for additional water supply, recycled water is not projected to be used in the Los Angeles County District's service area in the planning horizon of this UWMP as planning for the project is still under development.

6.2.6 Desalinated Water Opportunities

The Los Angeles County District does not directly obtain or use desalinated water as a source of supply.

6.2.7 Water Exchanges and Transfers

The Los Angeles County District leases unused portions of other purveyors' allocations in the Central Basin when available. Typically, these opportunities are available when other purveyors experience well contamination or other production interruptions that limit their ability to pump groundwater. While this supply is available sometimes, it is not considered a reliable source and is not quantifiable as a projected future supply source.

6.2.7.1 Emergency Interties

The San Marino system has two emergency interconnections with the City of Alhambra, and one emergency interconnection with the San Gabriel County Water District. The Los Angeles County District also has an interconnection with the City of El Monte which is one way to El Monte. The Duarte system has a single emergency interconnection with the City of Monrovia which is one way to the Los Angeles County District. The Baldwin Hills system does not have emergency interconnections (California American Water, 2019).

6.2.8 Future Water Projects

California American Water develops capital improvement projects as a part of the Comprehensive Planning Studies (CPSs) which are periodically prepared for each service area. CPSs are typically prepared on a five to eight-year cycle with interim updates prepared as conditions change or the need arises. Each service area is evaluated for specific needs from which a prioritized list of projects is developed. Projects are generally classified into one of several categories as follows: Source of Supply, Storage, Conjunctive Use, and Water Quality / Water Efficiency. Some projects meet multiple planning goals across two or more of the listed categories. A storage project, for example, not only provides increased system reliability but also assists in meeting peak hour demands often delaying the need for additional source of supply. Currently, there are no additional sources of supply listed in the 2019 CPS; however, the CPS identifies projects to drill additional wells in the Baldwin Hills, Duarte, and San Marino service areas. Although the new wells will not increase the Los Angeles County District's overall supply they will address issues with aging wells and production capacity.

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6.3 Climate Change Effects

Future water use may be affected by climate change.

"Projections of climate change in California indicate a further intensification of wet and dry extremes and shifting temperatures that can…affect both water use and supplies. Extreme and higher temperatures can lead to increases in water use…Projections of more frequent, severe, and prolonged droughts could lead to not only less surface water available, but also exacerbating ongoing stressors in groundwater basins across the state" (California Department of Water Resources, March 2021).

Higher temperatures decrease the amount of precipitation available for groundwater recharge and from surface water sources while increasing water use, especially for outdoor use. Reductions in future supply due to impacts associated with climate change were considered as part of the projected groundwater supply discussed in **Chapter 6** and **Chapter 7**. Increases in future water use patterns due to climate change factors were considered as part of the conservative demand projection provided in **Chapter 4**. Imported surface water from MWD, WBMWD, and Upper District may be subject to cutbacks for climatic, legal, environmental and water quality reasons. Additional information related to potential climate change conditions and potential impacts to the Los Angeles County District's imported water supplies is provided in each wholesale supplier's 2020 UWMP and **Chapter 7**.

6.4 Energy Intensity

Per Water Code Section 10631.2.(a), the Los Angeles County District must include information that could be used to calculate the energy intensity of their water service. The Los Angeles County District's water service energy intensity was estimated based on readily available electrical billing data and water production data. Billing records from 2016 through 2019 provided the annual total kilowatt hours used by the Los Angeles County District in its service area. Energy usage is tracked by the Los Angeles County District in the following categories: Booster, Interconnection, Tank, Tank/Booster, Treatment, Well, Irrigation Booster, Regulating Station and Office. The Los Angeles County District's average water service energy intensity was 776.7 kilowatt hours per AF (kWh/AF), as shown in **Table 6-7**.

Table 6-5. 2016-2019 Los Angeles County District Energy Intensity Estimates

	2016	2017	2018	2019	2016 - 2019 TOTAL
Total Water Production (AF)	17,215	18,559	19,339	17,919	73,031
Energy Consumed (kWh)	13,343,002	14,522,383	15,582,538	13,276,828	56,724,751
ENERGY INTENSITY (KWH/AF)	**775.1**	**782.5**	**805.8**	**740.9**	**776.7**

The energy intensity estimates for each of the Los Angeles County District's service areas between 2016 and 2019 are provided below in **Table 6-6**, **Table 6-7**, and **Table 6-8**.

Table 6-6. 2016-2019 Baldwin Hills Service Area Energy Intensity Estimates

	2016	2017	2018	2019	2016 - 2019 TOTAL
Total Water Production (AF)	2,779	2,923	3,052	2,783	11,538
Energy Consumed (kWh)	2,223,919	1,952,154	1,887,460	1,191,115	7,254,648
ENERGY INTENSITY (KWH/AF)	**800.2**	**667.9**	**618.4**	**427.9**	**628.8**

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Table 6-7 2016-2019 Duarte Service Area Energy Intensity Estimates

	2016	2017	2018	2019	2016 - 2019 TOTAL
Total Water Production (AF)	5,504	5,846	6,152	5,649	23,152
Energy Consumed (kWh)	4,106,893	4,673,523	5,406,461	4,428,867	18,615,744
ENERGY INTENSITY (KWH/AF)	**746.1**	**799.4**	**878.8**	**783.9**	**804.1**

Table 6-8 2016-2019 San Marino Service Area Energy Intensity Estimates

	2016	2017	2018	2019	2016 - 2019 TOTAL
Total Water Production (AF)	8,931	9,790	10,134	9,486	38,341
Energy Consumed (kWh)	7,012,190	7,896,706	8,288,617	7,656,846	30,854,359
ENERGY INTENSITY (KWH/AF)	**785.1**	**806.6**	**817.9**	**807.2**	**804.7**

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7 Water Service Reliability and Drought Risk Assessment

This section considers the Los Angeles County District's water supply reliability during normal, single dry, and multiple dry water years over the planning horizon. A Drought Risk Assessment of the next five years is also included.

IN THIS SECTION

- Water Service Reliability Assessment
- Drought Risk Assessment

Water service reliability corresponds to an urban water supplier's ability to meet projected future customer demand under a variety of reasonably expected conditions. The supply reliability assessment discusses factors (i.e., climatic, environmental, water quality and legal) that could potentially limit the expected quantity of water available from the Los Angeles County District's current and projected sources of supply through 2045. Multiple drought scenarios are considered and the quantitative impacts of the aforementioned factors on water supply and demand are discussed, as well as possible methods for addressing these issues. This chapter also includes the drought risk assessment (DRA), which provides a quick snapshot of the anticipated surplus or deficit if a drought were to occur in the next five years.

Evaluating the water service reliability is critical for water management as it can help identify potential problems before they happen. Water managers can then take proactive steps to mitigate shortages by encouraging water use efficiency, securing new water supplies and/or investing in infrastructure.

This section presents an evaluation of the Los Angeles County District's water supply reliability under normal, dry, and multiple dry year conditions. The water service reliability assessment and DRA results indicate that no water shortages are anticipated within the next 25-years under normal, single dry water years, and multiple dry water years.

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7.1 Water Service Reliability Assessment

This chapter presents the water service reliability assessment for the Los Angeles County District's service area.

7.1.1 Constraints on Water Sources

As described in **Chapter 6**, the Los Angeles County District has various water supply sources available. Historically, the Los Angeles County District has been able to supply 100% of its demand through its groundwater production, MSGB integrated right from the San Gabriel River, and wholesale purchases. Factors impacting the reliability of the Los Angeles County District's supply are shown in **Table 7-1**.The legal factors affecting supply include groundwater adjudications, provided in **Appendix J**, and replacement water purchase agreements for excess pumping. Environmental factors related to wholesale supply reliability include reduced deliveries of SWP due to reduced pumping in the Bay-Delta. The MWD UWMP states that the "listing of several fish species as threatened or endangered under the federal or California Endangered Species Acts have adversely impacted operations and limited the flexibility of the SWP" (Metropolitan Water District of Southern California, 2021). Water quality factors influence groundwater production capacity and efficiency in the MSGB and Raymond Basin. All of the supplies are subject to reduction as a result of climatic factors.

Table 7-1. Los Angeles County District Factors that Affect Supply

WATER SUPPLY SOURCES	LEGAL	ENVIRONMENTAL	WATER QUALITY	CLIMATIC
Central Basin	X			X
MSGB	X		X	X
MWD	X	X		X
Raymond Basin	X		X	X
Upper District	X	X		X
WBMWD	X	X		X

Short-term supply constraints are discussed in detail in the Water Shortage Contingency Plan (WSCP).

7.1.2 Year Type Characterization

DWR defines three year types that must be included in the water service reliability assessment. These include:

- **Average Year.** This condition represents a single year or averaged range of years that most closely represents the average water supply available. DWR uses the terms average and normal interchangeably when addressing the water year type.
- **Single Dry Year.** The single dry year is recommended to be the year that represents the lowest water supply available to the Supplier.
- **Five-Consecutive-Year Drought.** The driest five-year historical sequence for the supplier, which may be the lowest average water supply available for five years in a row.

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The Los Angeles County District relies on groundwater and wholesale supplies for direct use and indirect groundwater replenishment to supplement groundwater. Table 7-2 shows the supply reliability base years used to approximate average, single dry, and multiple dry years conditions for all supply sources of the Los Angeles County District.

Table 7-2. DWR 7-1R Basis for Water Year Data (Reliability Assessment)

SUPPLY RELIABILITY	AVERAGE WATER YEAR	SINGLE DRY	MULTIPLE DRY YEARS
BALDWIN HILLS			
Central Groundwater Basin[1]	2011-2020 Avg	2013	2012-2016
WBMWD[2]	1922-2017 Avg	1977	1988-1992
DUARTE			
MSGB[3]	2011-2020 Avg	2013	2012-2016
Upper District[4]	FY 2005-2006	FY 2013-2014	FY 2011/12-2013/14
SAN MARINO			
MSGB[3]	2011-2020 Avg	2013	2012-2016
Raymond Basin[1]	2011-2020 Avg	2013	2012-2016
MWD[5]	1922-2012	1977	1990-1992

1 Based on historic precipitation data from Pasadena, California (1893- June 2020) (Western Regional Climate Center)

2 Source: Draft WBMWD 2020UWMP (West Basin Municipal Water District, 2021) – Based on Metropolitan 2020 UWMP, Average Year is based on average of 1922 to 2017 (Metropolitan Water District of Southern California, 2021)

3 Source: Based on the Operating Safe Yield (OSY) (Stetson Engineers Inc., May 2020) for the years shown based on historic precipitation data from Pasadena, California (1893- June 2020) (Western Regional Climate Center).

4 Source: Draft Final Upper District 2015 UWMP – Note 2020 UWMP was not available for review. (Upper San Gabriel Valley Municipal Water District, 2016)

5 Source: Draft MWD 2020 UWMP (Metropolitan Water District of Southern California, 2021)

7.1.1 Water Service Reliability

The historic average, single dry, and multiple dry years supplies are shown in **Table 7-3** for each supply source based on historical base year conditions in **Table 7-2** and adjustments for the best-known estimates for application of base year conditions to future conditions.

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Table 7-3. Los Angeles County District Supply Reliability- Average, Single Dry Year, & Multiple Dry Years Supply (AFY)

WATER SUPPLY SOURCES	AVERAGE / NORMAL WATER YEAR	SINGLE DRY WATER YEAR	MULTIPLE DRY WATER YEARS				
			YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
BALDWIN HILLS							
Central Groundwater Basin Allocation [1]	2,175	2,175	2,175	2,175	2,175	2,175	2,175
WBMWD Purchases[2]	940	1,407	1,296	1,407	1,251	600	604
TOTAL WATER SUPPLY	**3,115**	**3,582**	**3,471**	**3,582**	**3,426**	**2,775**	**2,779**
% OF NORMAL	**100%**	**115%**	**111%**	**115%**	**110%**	**89%**	**89%**
DUARTE							
MSGB[3]	3,046	3,508	3,785	3,508	3,046	2,770	2,770
MSGB Integrated Right[4]	1,672	1,672	1,672	1,672	1,672	1,672	1,672
Surface Water for Irrigation[4]	-	-	-	-	-	-	-
Upper District Replacement Water[5]	1,443	1,649	1,324	1,649	2,032	987	1,063
TOTAL WATER SUPPLY	**6,162**	**6,829**	**6,781**	**6,829**	**6,751**	**5,428**	**5,504**
% OF NORMAL	**100%**	**111%**	**110%**	**111%**	**110%**	**88%**	**89%**
SAN MARINO							
MSGB[6]	6,613	8,064	8,467	8,064	7,258	6,048	6,048
MSGB Replacement Water[5]	682	872	7	872	1,268	0	0
Raymond Basin[7]	1,609	1,609	1,609	1,609	1,609	1,609	1,609
MWD[8]	1,442	1,442	1,442	1,442	1,442	1,442	1,442
TOTAL WATER SUPPLY	**10,346**	**11,987**	**11,525**	**11,987**	**11,577**	**9,099**	**9,099**
% OF NORMAL	**100%**	**116%**	**111%**	**116%**	**112%**	**88%**	**88%**
TOTAL	**19,623**	**22,398**	**21,777**	**22,398**	**21,753**	**17,302**	**17,383**
% OF NORMAL	**100%**	**114%**	**111%**	**114%**	**111%**	**88%**	**89%**

[1] Fixed Annual Allocation of 2,175 afy

[2] It is assumed that all demand not met by the allocations in the Central Basin will be met by purchasing replacement water from WBMWD.

[3] Calendar year safe yields were estimated as the average of the two fiscal years (FY) the calendar year occurs in. The multiple dry years are based on 1.8634% of MSGB safe yields for 2012-2016. The single dry year is based on 1.8634% of 2013 MSGB safe yield and the average year is based on 1.8634% of 2011-2020 MSGB safe yield (Stetson Engineers Inc., May 2020).

[4] Available fixed MSGB integrated right from the San Gabriel River allocation of 1,672 afy

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[5] It is assumed that all demand not met by the allocations in the MSGB will be met by purchasing replacement water from Upper District through the MSGB Watermaster per provisions of the MSGB Judgment.

[6] Calendar year safe yields were estimated as the average of the two fiscal years (FY) the calendar year occurs in. The multiple dry years are based on 4.03204% of MSGB safe yields for 2012-2016. The single dry year is based on 4.03204% of 2013 MSGB safe yield and the average year is based on 4.03204% of 2011-2020 MSGB safe yield (Stetson Engineers Inc., May 2020).

[7] It is assumed that average and in dry years supply is the current allocation of 1,609 afy.

[8] It is assumed that all demand not met by the allocations in the MSGB and Raymond Basin will be met by purchasing replacement water from MWD. The City of San Marino has an annual average Tier 1 maximum allocation of 1,442 afy (California Metropolitan Water District of Southern California, FY 2019/20). For more information see Section 6.2.3.

As described in **Chapter 6**, the amount of demand that is not met by groundwater allocations is assumed to be met by purchasing supplemental water from a wholesaler for potable direct use or as untreated replacement water for groundwater pumping. However, the availability of replacement water may vary from year to year depending on regional drought conditions and other factors as shown in historic base years in **Table 7-3**. **Table 7-3** "% of normal" values are applied to normal demand in **Table 7-4** to reflect anticipated demand changes in dry years in **Table 7-5** and **Table 7-6**. The Los Angeles County District expects to meet demands under all water year scenarios as shown in **Table 7-4** through **Table 7-6** and will continue to promote water conservation to ensure reliability and resiliency.

Table 7-4. DWR 7-2R Normal Year Potable Water Supply and Demand Comparison (AFY)

	2025	2030	2035	2040	2045
Supply Totals From Table 6-9R	21,595	21,894	22,193	22,405	22,618
Demand Totals From Table 4-3R	21,595	21,894	22,193	22,405	22,618
DIFFERENCE:	**0**	**0**	**0**	**0**	**0**

Table 7-5. DWR 7-3R Single Dry Year Potable Water Supply and Demand Comparison (AFY)

-	2025	2030	2035	2040	2045
Supply Totals[1]	24,650	24,991	25,332	25,574	25,817
Demand Totals[2]	24,650	24,991	25,332	25,574	25,817
DIFFERENCE:	**0**	**0**	**0**	**0**	**0**

Table 7-6. DWR 7-4R Multiple Dry Years Potable Water Supply and Demand Comparison (AFY)

		2025	2030	2035	2040	2045
First Year	Supply Totals	23,966	24,298	24,629	24,865	25,101
	Demand Totals	23,966	24,298	24,629	24,865	25,101
-	**DIFFERENCE:**	**0**	**0**	**0**	**0**	**0**
Second Year	Supply Totals	24,718	25,059	25,380	25,623	N/A
	Demand Totals	24,718	25,059	25,380	25,623	N/A
-	**DIFFERENCE:**	**0**	**0**	**0**	**0**	**N/A**

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		2025	2030	2035	2040	2045
Third Year	Supply Totals	24,073	24,404	24,697	24,932	N/A
	Demand Totals	24,073	24,404	24,697	24,932	N/A
-	**DIFFERENCE:**	**0**	**0**	**0**	**0**	**N/A**
Fourth Year	Supply Totals	19,200	19,463	19,681	19,868	N/A
	Demand Totals	19,200	19,463	19,681	19,868	N/A
-	**DIFFERENCE:**	**0**	**0**	**0**	**0**	**N/A**
Fifth Year	Supply Totals	19,342	19,607	19,810	19,999	N/A
	Demand Totals	19,342	19,607	19,810	19,999	N/A
-	**DIFFERENCE:**	**0**	**0**	**0**	**0**	**N/A**

7.1.2 Descriptions of Management Tools and Options

The Los Angeles County District conducts water resource management activities and programs that are designed to protect, maintain, and monitor the efficient use of supply sources and the finished product water. These measures include managing water resources from both the supply and demand side. The Los Angeles County District will maximize its supply by reducing water losses, working with neighboring agencies, wholesale suppliers and basin watermasters to coordinate response to shortages, and continuing to implement demand management measures. Details on the Los Angeles County District's water loss efforts are provided in **Chapter 4**, the response plan for short- and long-term shortages is provided in **Chapter 8**, and conservation programs are provided in **Chapter 9**. The Los Angeles County District is committed to ensuring safe and reliable water is provided to both current customers and future generations.

In addition to the Los Angeles County District's efforts to maximize and manage local supplies, DWR, MWD, WBMWD, and Upper District are implementing several water supply strategies to ensure that sufficient wholesale supply is available in drought conditions as described in the MWD Draft 2020 UWMP (Metropolitan Water District of Southern California, 2021). These strategies include investments in: conservation; water recycling; transfer agreements; storage; and supply. Based on these investments DWR, MWD, WBMWD, and Upper District anticipate that there will be sufficient supply available to meet forecasted purveyor demands as described in the MWD Draft 2020 UWMP (Metropolitan Water District of Southern California, 2021).

7.2 Drought Risk Assessment

New to the 2020 UWMP, CWC Section 10635 (b) now requires a drought risk assessment (DRA). The DRA provides a quick snapshot of the anticipated surplus or deficit if a five-consecutive year drought were to occur in the next five years. The DRA can be modified or updated outside of the UWMP five-year plan cycle, so a description of the data, methodology, and basis for shortage conditions must be included in this 2020 UWMP. The DRA evaluates each water supply's reliability and compares available water supplies and projected demands during a five-consecutive dry years scenario. This short-term analysis can help water suppliers foresee undesired risks, such as upcoming shortages, and provide time to evaluate and implement the necessary response actions needed to mitigate shortages in a less impactful manner to the community and environment. If demands cannot be met by the

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expected available supply, shortage response actions from the Los Angeles County District's WSCP may be implemented. Details on the Los Angeles County District's WSCP are provided in **Chapter 8**.

7.2.1 Data, Methods, and Basis for Water Shortage Condition

The DRA builds on the water service reliability analysis from **Section 7.1**, which incorporated assessment of historical consumption data by customer class, populated from billing records, and historical supply data by source from production reports. Based on this data, historical demand has never exceeded available supply. For this DRA analysis, normal year demand conditions and five-consecutive year drought supply conditions were considered for 2021-2025.

7.2.2 DRA Water Source Reliability

The Los Angeles County District anticipates using allocated groundwater and integrated right supplies to the maximum extent and supplementing local supplies as necessary with surface water and purchased or imported water. To support reliability of imported supplies, the Los Angeles County District will work with neighboring agencies, MWD, WBMWD, and Upper District to coordinate response to shortages and State standards for efficient water use. More details are provided in the WSCP in **Chapter 8** about how these factors are established, monitored, and used to make water resources management decisions. If certain criteria are met for these factors, shortage response actions from the Los Angeles County District's WSCP may be activated.

As discussed in **Chapter 6**, the San Marino system has two emergency interconnections with the City of Alhambra, and one emergency interconnection with the San Gabriel County Water District. The Duarte system has a single emergency interconnection with the City of Monrovia. The interties improve regional supply reliability by allowing the Los Angeles County District and partner agencies access to each other's sources in an emergency.

7.2.3 Total Water Supply and Use Comparison

The Los Angeles County District does not anticipate any supply shortages within the next five years as shown in **Table 7-7**.

Table 7-7. DWR 7-5 Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635(b) (AFY)

2021	Gross Water Use	19,878
	Total Supplies	19,878
	Surplus/Shortfall without WSCP Action	0
	PLANNED WSCP ACTIONS (USE REDUCTION AND SUPPLY AUGMENTATION)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%

*Table continues on the next page

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2022	Gross Water Use	20,305
	Total Supplies	20,305
	Surplus/Shortfall without WSCP Action	0
	PLANNED WSCP ACTIONS (USE REDUCTION AND SUPPLY AUGMENTATION)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
2023	Gross Water Use	20,733
	Total Supplies	20,733
	Surplus/Shortfall without WSCP Action	0
	PLANNED WSCP ACTIONS (USE REDUCTION AND SUPPLY AUGMENTATION)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
2024	Gross Water Use	21,163
	Total Supplies	21,163
	Surplus/Shortfall without WSCP Action	0
	PLANNED WSCP ACTIONS (USE REDUCTION AND SUPPLY AUGMENTATION)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
2025	Gross Water Use	21,595
	Total Supplies	21,595
	Surplus/Shortfall without WSCP Action	0
	PLANNED WSCP ACTIONS (USE REDUCTION AND SUPPLY AUGMENTATION)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%

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8 Water Shortage Contingency Plan

The WSCP is a detailed plan for how California American Water intends to respond to foreseeable and unforeseeable water shortages.

A water shortage occurs when the water supply is reduced to a level that cannot support typical demand at any given time. The WSCP is used to provide guidance to the Los Angeles County District's governing body, staff, and the public by identifying response actions to allow for efficient management of any water shortage with predictability and accountability. Preparation provides the tools to maintain reliable supplies and reduce the impacts of supply interruptions due to extended drought or catastrophic supply interruptions.

IN THIS SECTION

- Summary of the WSCP

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The WSCP describes the following:

Water Supply Reliability Analysis: Summarizes Monterey Main's water supply analysis and reliability and identifies any key issues that may trigger a shortage condition.

Annual Water Supply and Demand Assessment Procedures: Describes the key data inputs, evaluation criteria, and methodology for assessing the system's reliability for the coming year and the steps to formally declare any water shortage levels and response actions.

Six Standard Shortage Stages: Establishes water shortage levels to clearly identify and prepare for shortages.

Shortage Response Actions: Describes the response actions that may be implemented or considered for each stage to reduce gaps between supply and demand well as minimize social and economic impacts to the community.

Compliance and Enforcement: Defines compliance and enforcement actions available to administer demand reductions.

Legal Authority: Lists the legal documents that grant CAW the authority to declare a water shortage and implement and enforce response actions.

Financial Consequences of WSCP Implementation: Describes the anticipated financial impact of implementing water shortage stages and identifies mitigation strategies to offset financial burdens.

Monitoring and Reporting: Summarizes the monitoring and reporting techniques to evaluate the effectiveness of shortage response actions and overall WSCP implementation. Results are used to determine if additional shortage response actions should be activated or if efforts are successful and response actions should be reduced.

WSCP Refinement Procedures: Describes the factors that may trigger updates to the WSCP and outlines how to complete an update.

Special Water Features Distinctions: Identifies exemptions for ponds, lakes, fountains, pools, and spas, etc.

Plan Adoption, Submittal, and Availability: Describes the process for the WSCP adoption, submittal, and availability after each revision.

The WSCP is a standalone document that can be modified as needed and is included as **Appendix H**.

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URBAN WATER MANAGEMENT PLAN

9 Demand Management Measures

This section provides a comprehensive description of the water conservation programs that the Los Angles County District has implemented for the past five years, is currently implementing, and plans to implement in order to meet the 2020 urban water use reduction targets.

IN THIS SECTION

- Existing DMMs
- Reporting Implementation
- Future Requirements

The section of the CWC addressing Demand Management Measures (DMMs) was significantly modified in 2014, based on recommendations from the Independent Technical Panel (ITP) to the legislature. The ITP was formed by DWR to provide information and recommendations to DWR and the Legislature on new DMMs, technologies and approaches to water use efficiency. The ITP recommended, and the legislature enacted, streamlining the requirements from the 14 specific measures reported on in the 2010 UWMP to six more general requirements plus an "other" category for measures agencies implemented in addition to the required elements.

The required measures are summarized in **Table 9-1**.

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Table 9-1. Demand Management Measures

	DEMAND MANAGEMENT MEASURES
1	Water waste prevention ordinances
2	Metering
3	Conservation pricing
4	Public education and outreach
5	Programs to assess and manage distribution system real loss
6	Water conservation program coordination and staffing
7	Other demand management measures

Additional DMM implementation information is provided in the following sections.

9.1 Existing Demand Management Measures for Retail

Demand management is an integral part of sustainably managing water resources in California. Implementing water use DMMs that help lower demands can improve the water service reliability and help meet state and regional water conservation goals. Consistent with the requirements of the CWC, this section describes the demand measurement measures from Table 9-1that have been implemented in the past five years and will continued to be implemented into the future to meet the Los Angeles County District's 2020 water use targets pursuant to Section 10608.20 of the CWC.

9.1.1 Water Waste Prevention Ordinances

According to the DWR 2020 UWMP Guidebook, a water waste ordinance explicitly states the waste of water is to be prohibited. The ordinance may prohibit specific actions that waste water, such as excessive runoff from landscape irrigation, or use of a hose outdoors with a without a shut off nozzle.

The Los Angeles County District does not have legal authority or ordinances as a public utility company and must obtain approval from the CPUC to implement water conservation programs, including voluntary and/or mandatory measures. California American Water submits Advice Letters for Rule 14.1 to the CPUC to define water conservation measures and the approval process that California American Water must follow to implement mandatory water conservation. California American Water must also follow this process in order to declare a water shortage emergency. California American Water will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.

Section D of Rule 14.1 (**Appendix G**) defines water conservation requirements that are effective at all times until deactivated by the CPUC. These conservation requirements define non-essential uses of water and limit the water waste from new developments and existing customers. Although these are considered requirements, they are voluntary and serve as the Los Angeles County District's Voluntary Water Conservation Program.

Sections E through H of Rule 14.1 (**Appendix G**) list the specific requirements of the Los Angeles County District's 3 mandatory conservation stages. The Los Angeles County District must receive authorization from the CPUC before implementing mandatory conservation measures.

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The mandatory conservation stages listed in Rule 14.1 shall remain dormant until the Los Angeles County District submits a letter to the CPUC and receives authorization to declare mandatory conservation. The mandatory conservation request letter to the CPUC shall include justification for activating the particular mandatory conservation stage, as well as the expected duration the mandatory conservation will be in effect. In 2015, the Los Angeles County District was in Stage 2 of the Water Shortage Contingency Plan. On the approval of Advice Letter No. 1175, the Los Angeles County District was authorized to return to Stage 1, voluntary conservation starting on September 1, 2017. Currently the Los Angeles County District is still in Stage 1, voluntary conservation, of Rule 14.1.

9.1.2 Metering

The Los Angeles County District is 100% metered. The Los Angeles County District performs meter reading on a monthly basis and consequently bills customers on a monthly basis. All customers, with the exception of private fire connections, are billed a service charge and a usage rate/commodity charge for each unit of water consumed. More details on rate structures are provided under **Section 9.1.3**.

The Los Angeles County District maintains a database to track meters and record years in service. The Los Angeles County District follows a program to test, repair, and replace water meters. The Los Angeles County District replaces 5/8-inch and 1-inch meters on a 15-year cycle. The Los Angeles County District tests 1 ½-inch and 2-inch meters on a four-year cycle; meters that do not pass testing requirements are replaced. The number of meters replaced each year varies due to varying installation dates (California American Water, 2011).

9.1.3 Conservation Pricing

Conservation pricing sends a signal to customers regarding their water use.

The rate structure used by the Los Angeles County District for each connection type is shown in Table 9-2 and is described here:

- **Residential Connections:** The Los Angeles County District's water rate structure encourages residential customers to conserve water by using seasonally tiered rates where summer rates are higher to encourage conservation during the irrigation season. Each service area in the Los Angeles County District has a four-tiered rate structure, but the tiers and rates differ by service area (California American Water, April 2015). Winter rates are in place from November through April, summer rates from May through October. The tiered rate structure establishes volumetric rates; that is the more water a customer consumes, the more expensive the water becomes. In addition, the Los Angeles County District's rates include a monthly service charge per meter depending on the size of the connection.
- **Non-Residential Connections (except private fire):** The Los Angeles County District uses a seasonally adjusted uniform rate for commercial, public authority, and industrial customers, in which the volumetric rate is constant regardless of the amount of water consumed. As with residential rates, summer rates, which are in place from May through October, are higher. In addition, the Los Angeles County District's rates include a monthly service charge per meter depending on the size of the connection.
- **Measured Irrigation Service Connections:** Measured irrigation service is available in certain areas in the Los Angeles County District. The Los Angeles County District uses a seasonally adjusted uniform volumetric rate structure, with different rates for pressure service and gravity service. As with residential rates, summer rates, which are in place from May through October, are

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higher. In addition, the Los Angeles County District's rates include a monthly service charge per meter depending on the size of the connection.

- **Private Fire Connections:** Private fire protection systems and private fire hydrants are charged a fixed monthly fee per hydrant or connection.

Table 9-2. Water Rate Structures

CUSTOMER TYPE	WATER RATE STRUCTURE
Residential	Four Tier Volumetric Rate
Commercial	Single Tier Volumetric Rate
Industrial	Single Tier Volumetric Rate
Institutional/Government	Single Tier Volumetric Rate
Irrigation	Single Tier Volumetric Rate
Private Fire	Fixed

9.1.4 Public Education and Outreach

California American Water's Los Angeles County District participated in a combination of community events, public meetings, outreach campaigns, bill messaging and inserts to reach out to customers and promote water use efficiency and conservation.

In 2019 California American Water hosted a company booth at 14 Los Angeles area community events, including the City of Rosemead Public Works Day, San Marino Chamber of Commerce Evening at the Huntington, City of Duarte Green Home Awards, City of Duarte Concerts in the Park, City of Bradbury Night Out, and City of San Marino National Night Out. The Los Angeles County District also sponsored a booth at the Upper San Gabriel Valley Municipal Water District's "WaterFest 2019," the largest community event of the year with 1000's of attendees being educated and entertained while promoting specific conservation programs to our customers (**Figure 9-1**).

Figure 9-1. California American Water Event Booth

In addition to the community outreach events, the Los Angeles County District sent 26 bill inserts, 12 customer emails and 24 direct mailings, posted five print ads in local news outlets, and utilized 26 other types of communication in 2019 that focused on BeWaterWise/SoCalWatersmart Rebate Programs, upcoming community events, partner agency updates, general water-use efficiency tips, and reminders of the permanent water use restrictions and State mandates. Working in conjunction with the External Affairs team, conservation outreach and education continues to be expanded online, and, on the company's social media platforms. The Los Angeles County District also offers informational and educational classes to residents within the district either directly through California American Water or in partnership with Member Agencies. These classes include topics such as "Fix a Leak" and "Landscape Transformation and Design" and are presented by experts from organizations such as Green Media Creations, Inc. In addition to class related literature, attendants are provided with

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resources on rebate incentive information. Average class attendance for these programs ranges from 53 to 74 attendees.

Beginning September 2019, the Los Angeles County District supported the West Basin Municipal Water District's promotion of their increased incentive to the Metropolitan Water District's Landscape Transformation Program. No costs were incurred to promote this program as California American Water bills include for bill messaging without the additional cost of a bill insert. West Basin reported a slight increase in call inquiries, however, no new rebate payments through EGIA/SoCalWaterSmart were reported for the last 4 months of 2019.

The Los Angeles County District Conservation Department collaborated with the Operations Department to develop a means to continue to improve our customer interactions and designed a Field Service Representative (FSR) bag to address on-the-spot customer concerns, questions, and general inquiries at the time of a Field Service appointment. The bags give the FSR the opportunity to immediately provide minor leak repair devices such as toilet flappers and toilet tablets and to provide educational information on current rebates, giveaways, upcoming customer class schedules and incentives. This program has been very well received by customers. Expenses for the conservation devices and materials are included in the Residential Plumbing Retrofit section of this report.

Public Outreach and events are funded through California American Water's conservation surcharge, as well as through general rates collection as part of the operations budget. Those expenses under the conservation surcharge include educational and water saving materials, displays and informative giveaways, conservation related bill inserts and mailers, and special outreach letters to customers on water conservation. California American Water tracks costs related to discouraging excessive water use by customers during normal climate conditions as well as during a drought emergency. Other expenses for events and activities such as event sponsorship, Company booth fees, room fees, etc. are funded under the general operations budget under Community Relations.

9.1.5 School Education Program

A key component of the Public Outreach Program is the School Education Program. The Los Angeles County District contracts with two educational providers to include a conservation addendum to our local school districts class schedules. The Los Angeles County District partnered with the National Theater for Children to sponsor performances of "The Aqua League", an educational assembly highlighting the importance of water and water conservation for elementary school children in the 2019 school year. A total of five schools participated in the program, reaching 849 students within the Los Angeles Service District. The Los Angeles County District has also partnered with Resource Action Programs ("RAP") and Sothern California Gas to provide school education programs through RAP's LivingWise Program, which is co-funded by a number of Gas and Electricity Utilities. In 2019, the program was able to reach 473 students and 12 Teachers. Participants received as part of the program, interactive, hands-on conservation education, targeting elementary school children, expert-designed lesson plans with easy-to-install energy efficiency and water conservation products, and are provided with app-based educational games and online education options.

The school education program is funded through the conservation surcharge one-way balancing account.

9.1.6 Programs to Assess and Manage Distribution System Real Losses

The Los Angeles County District maintains production and delivery records. The Los Angeles County District records well production and meters the amount of water entering the Los Angeles County District's system from each wholesaler, which gives a measure of total production. All customer

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connections are metered, which allows the Los Angeles County District to measure the total customer deliveries. With the total production and the total deliveries, the Los Angeles County District is able to calculate the NRW. In 2020, the Los Angeles County District had approximately 2,642 AF of NRW.

The Los Angeles County District completed training in the AWWA Water Audit Method and the Component Analysis Process (California American Water, 2010). In 2010, the Los Angeles County District began using the AWWA Water Loss software to analyze water losses.

The Los Angeles County District repairs all reported leaks and locates and repairs unreported leaks (California American Water, 2010). The Los Angeles County District tracks all leaks and these records become a part of the Conditional Based Assessment, which is used to identify frequent leak areas within the system. The Los Angeles County District also maintains an aggressive valve and hydrant inspection program. Production meters are also tested annually and repaired or replaced as needed. Between 2014 and 2018, the Los Angeles County District replaced 7,003 feet of 4-inch, 6-inch, 8-inch, 10-inch, 12-inch, 14-inch and 30-inch AC, Cast Iron, Steel and Concrete pipe due to age and leak history.

In 2018, the Los Angeles County District, working under a grant from the California Energy Commission, conducted a pilot project aimed at locating subsurface leaks in its Duarte distribution system. “Correlating Continuous Acoustic Monitoring” (CCAM) and Satellite Imagery Leak Detection (SILD) strategies were used. The findings showed that the CCAM strategy generated 77 Points of Interest (POI’s). Of the 77, 49 were investigated, resulting in the detection of 20 subsurface leaks. This represents a 41% leak found per investigated POI. The average flow for these leaks was 17 gpm. The SILD strategy generated 504 POI’s. Of the 504, 146 were investigated, resulting in the detection of 117 subsurface leaks. This represents an 80% leak found per investigated POI. The average flow for these leaks was 7 gpm.

The Los Angeles County District provides leak detection information and assistance to its customers through providing educational tools and giveaways, such as dye tablets, to detect leaks. This is discussed under Section 9.1.8.1.

9.1.7 Water Conservation Program Coordination and Staffing Support

In 2019, the Los Angeles County District funded one full-time Conservation Representative position. The conservation representative manages customer consumption concerns through conducting residential water surveys. This representative works with the administration in creating an innovative conservation program detailed for the specific needs of the district. This position fulfills these needs by responding to customer inquiries, conducting conservation patrols, staffing public outreach conservation events and classes, tracking equipment inventory, assisting customers with rebate applications, and reaching out to customers to publicize all the programs available to them.

The conservation position was funded out of the conservation surcharge one-way balancing account.

9.1.8 Other Demand Management Measures

The Los Angeles County District is committed to implementing cost effective programs that will increase water efficiency district wide. Though not required, the Los Angeles County District has implemented the following demand management measures during the past five years and will continue implementation into the future in order to increase the overall water efficiency of the Los Angeles County District’s customers.

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9.1.8.1 Residential Water Audits

California American Water's Los Angeles County District performed 209 residential water surveys in 2019. The surveys were conducted by both in-house representatives and through two contracted vendors: WaterWise Consulting Services, Inc. for the majority of the Los Angeles County District's residential water audits and BluewatchDog Conservation, Inc. for the majority of the Commercial and Large Landscape Audits. All residential audits included a detailed assessment of the indoor and outdoor usage, an individualized water budget, recommended irrigation schedule, a check of the current irrigation controller settings, as well as a comprehensive audit package with applicable water saving devices, rebate application forms, and educational material. The Los Angeles County District's in-house conservation representative performed 49 Residential audits to help customers with water-use efficiency and conservation education. Customers received a comprehensive property survey to identify areas to improve efficiency, offer rebate information to upgrade outdated appliances, and provide immediate water saving devices such as faucet aerators, positive pressure hose nozzles, and low flow showerheads. Customers with high bill or leak concerns were provided a comprehensive "Water-Wise House Call" for a more in-depth evaluation to identify the possible source of concern, which included testing of toilets, irrigation systems, and pools. All audit data and information are collected and maintained in a database to allow for easy tracking of water saving opportunities and to obtain a district profile for the most common high-consumption water using devices and appliances.

The costs for the survey vendors were funded out of the conservation surcharge one-way balancing account. Expenses for the conservation devices and materials are included in the Residential Plumbing Retrofit section of this report.

9.1.8.2 Residential Plumbing Retrofit

California American Water provides customers various water saving devices including showerheads, faucet aerators (kitchen and bathroom), toilet leak detection tablets, garden hose spray nozzles, soil probes, and educational pamphlets. These devices and informative materials are designed to help residential customers upgrade their indoor water use fixtures, identify leaks, and improve outdoor water usage for car washing and irrigation. The devices and material are provided to customers upon request at community events and meetings, office walk-ins, customer call-ins, and through the home water survey program.

The residential plumbing retrofit program was funded out of the conservation surcharge one-way balancing account. The devices provided to customers in 2019 are summarized in **Table 9-3**.

Table 9-3. Residential Plumbing Retrofits

NAME OF MEASURE, AS LISTED IN DECISION OR SETTLEMENT	# OF UNITS / ACTIVITIES BOUGHT	$ PER UNIT, ACTIVITY, ETC.	TOTAL $ SPENT 2019	ESTIMATED WATER SAVINGS PER UNIT PER YEAR	UNIT LIFESPAN	ESTIMATED ANNUAL MEASURE SAVINGS (AFY)	ESTIMATED LIFETIME MEASURE SAVINGS (AF)
Showerheads (incl. RAP)	150	$4.98		0.012	5	1.73	8.63
Handheld Showerheads	50	$15.98		0.006	5	1.24	6.20
Faucet Aerators	300	$0.54		0.028	5	8.39	41.93
Kitchen Aerators	0	$1.75		0.0017	5	-	-
Toilet Flappers	400	$1.88		0.005	5	1.88	9.40

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NAME OF MEASURE, AS LISTED IN DECISION OR SETTLEMENT	# OF UNITS / ACTIVITIES BOUGHT	$ PER UNIT, ACTIVITY, ETC.	TOTAL $ SPENT 2019	ESTIMATED WATER SAVINGS PER UNIT PER YEAR	UNIT LIFESPAN	ESTIMATED ANNUAL MEASURE SAVINGS (AFY)	ESTIMATED LIFETIME MEASURE SAVINGS (AF)
Tank Banks	0	$1.25		Unknown	5	Unknown	Unknown
Drip Gauge	0	$0.28		Unknown	5	Unknown	Unknown
Leak Detection tablets	4000	$0.14		0.001	5	2.80	14.00
Hose Timers	0	$7.88		Unknown	5	Unknown	Unknown
Shower Timer	0	$1.69		Unknown	-	Unknown	Unknown
Water Efficiency Measurer Bag	0	$0.12		Unknown	-	Unknown	Unknown
Shower Pause Valve	0	$1.94		Unknown	-	Unknown	Unknown
Hose spray nozzle	450	$3.88		Unknown	5	Unknown	Unknown
Soil Probe	0	$2.23		Unknown	5	Unknown	Unknown
TOTAL	**5,350**		**$4,686**	**-**		**16.03**	**80.15**

Total spent $ represents purchased items during 2019 – this does not equal total of items provided during the year

9.1.8.3 Low-Income Water/Energy Direct Installation Program

The Los Angeles County District partnered with Sempra Energy (Southern California Gas Company) for an Inter-Utility Agreement referred to as the Resource Savings Program. SoCalGas offers no-cost energy savings measures for its income qualifying residential customers pursuant to its Energy Savings Assistance Program. California American Water offers low or no-cost water efficiency measures and incentives, including rebates, for its qualifying residential customers pursuant to its water conservation program. Measures that the customers may qualify for include clothes washers, faucet aerators (kitchen & bath), low flow showerheads, thermostatic shower valves, and thermostatic tub spouts. Collectively, the Resource Savings Program has assisted 145 customers in the Los Angeles and Ventura County Districts to reduce their water and energy usage up to 2019.

In 2019, the Los Angeles County District provided the Tiki Atoll apartment complex, which is located within a section of the Los Angeles County District's disadvantage community, with 14 High Efficiency Toilets to upgrade the current outdated high consumption toilets.

The water/energy direct install program was funded out of the conservation surcharge one-way balancing account.

9.1.8.4 CII & Landscape Water Survey

The Los Angeles County District contracted with WaterWise Consulting, Inc, Aquasave and BluewatchDog Conservation to offer free CII and large landscape ("LL") audits to non-residential customers. CII audits include a detailed onsite audit evaluating the facility, water use patterns, indoor water use, and summary of recommendations specific to the property. LL audits include a detailed outdoor audit and the creation of a site-specific water budget and irrigation schedule. In 2019, the Los Angeles County District completed 14 CII audits and 1 LL audits.

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The water audit program was funded out of the conservation surcharge one-way balancing account.

9.1.8.5 Water Bottle Filling Station Program

In 2019, the Los Angeles County District partnered with the Upper San Gabriel Valley Municipal Water District to provide the Duarte School of the Arts with two water bottle filling stations. This partnership provided every student and teacher with a co-branded California American Water and Upper San Gabriel Valley Municipal Water District logo stainless steel water bottle to replace single use containers and bottled water on the campus. Additionally, school committed to removing bottled water from vending machines and encouraged students, staff, faculty and administrators to use the filling stations, which provides clean, safe and reliable water from California American Water's Duarte water system. The newly installed water stations also include a running counter that indicates the number of plastic water bottles that are saved from the landfill when someone fills a re-usable water bottle.

The water bottle fill station program was funded out of the conservation surcharge one-way balancing account.

9.1.8.6 Residential and Commercial Rebates (MWD's SoCal Water Smart, California American Water in-house rebates)

In the Los Angeles County District, all residential rebates in 2019 were provided to customers through MWD's BeWaterWise/ SoCalWaterSmart rebate program. All non-residential and commercial rebates in 2019 were provided through the Los Angeles County District's in-house rebate program and the MWD's BeWaterWise/ SoCalWaterSmart rebate program.

The Los Angeles County District's non-residential rebates include high-efficiency clothes washers, dishwashers and pool covers and our program is funded through the conservation surcharge one-way balancing account. The MWD rebate programs (residential and nonresidential) are funded by MWD through its member agencies' purchased water rates.

9.1.8.7 Memberships

In 2017, the California Urban Water Conservation Council (CUWCC) dissolved. In its place, the California Water Efficiency Partnership (CALWEP) was formed. As a former member of the CUWCC and current partner of CALWEP, the Los Angeles County District is a committed to continuing its partnership with CALWEP. This partnership is ongoing and provides vital information, tools, resources, and contacts by means of updates and data-sharing for California's Water utilities and other member organizations. Membership program is funded through the conservation surcharge one-way balancing account.

9.1.8.8 Wholesale Supplier Assistance Programs

California American Water continued to strengthen its partnerships with water wholesalers such as the Upper San Gabriel Valley Municipal Water District and the West Basin Municipal Water District in order to participate and partner in joint conservation programs and to offer a greater variety and level of incentives to California American Water customers. This also allowed California American Water's conservation staff to participate in training and education programs offered through these agencies at zero or much reduced costs.

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9.2 Reporting Implementation

The Los Angeles County District is required to submit an annual conservation summary report (the Water Conservation Program Annual Summary Report) to the CPUC in order to document annual conservation program activity and provide the CPUC with estimated water savings associated with conservation efforts. This information provides the CPUC with a comprehensive, statewide understanding of California American Water's conservation programs and activities each year. All districts are required to provide the following information about each program: a brief description of the type of program and length of time it was offered, how the program was funded, the cost of the program, and the degree of participation in the district by customer group. Additionally, California American Water is required to provide the CPUC with data on its water conservation and low-income programs, which is provided in attachments to the annual report. The most recently available Water Conservation Program Annual Summary Report available at the time of preparation of this UWMP was for 2019.

9.2.1 Implementation Over the Past Five Years

The following table (**Table 9-4)** provide a summary of the conservation efforts the Los Angeles County District has implemented between 2016 and 2019.

Table 9-4. DMM Implementation in 2016-2020

		# OF UNITS/ACTIVITIES			
DMM ACTIVITIES	DESCRIPTION	2016	2017	2018	2019
Conservation Staff	Staffing	1 Rep	1 Rep	1 Rep	1 Rep
Public Information Programs	Advertising, PSAs, Community Events	14	50	35	110
School Education Programs	Resource Action Programs/National Theater for Children	16	7	various	10
Residential Water Audits	In-house and Vendor	77	123	67	160
Residential Plumbing Retrofit	Conservation Devices, Low Flow Fixtures	3,737	1,416	1,400	5,350
Residential Rebates	HECW, HEDW, ULFT, Rain Barrel, Turf Removal, Pool Cover	71	21	100	37
Low Income Water/Energy Direct Install	UHET Parking Lot event	0	0	0	1
Landscape Upgrade Grant Program	Public Landscape Retrofit	0	1	2	0
CII & Large Landscape Conservation Audits	CII & LL Audits by WaterWise and BWD	15	6	15	15
CII Rebates and Direct Installations		0	0	-	-
Non-Residential Rebates	Various	-	-	0	0

9.2.2 Implementation Achieve Water Use Targets

For decades, CAW has valued and promoted conservation and will continue to do so. As a result, CAW water use is below target objectives set by the State of California. Despite meeting the targets,

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CAW will continue to implement existing conservation programs and explore additional programs to avoid substantial increases in demands.

9.3 Water Use Objectives (Future Requirements)

CAW customers are efficient and have reduced their GPCD consumption to less than the State target. CAW continues to promote conservation and will evaluate additional measures if and when future requirements are established.

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Appendix A. DWR Checklist

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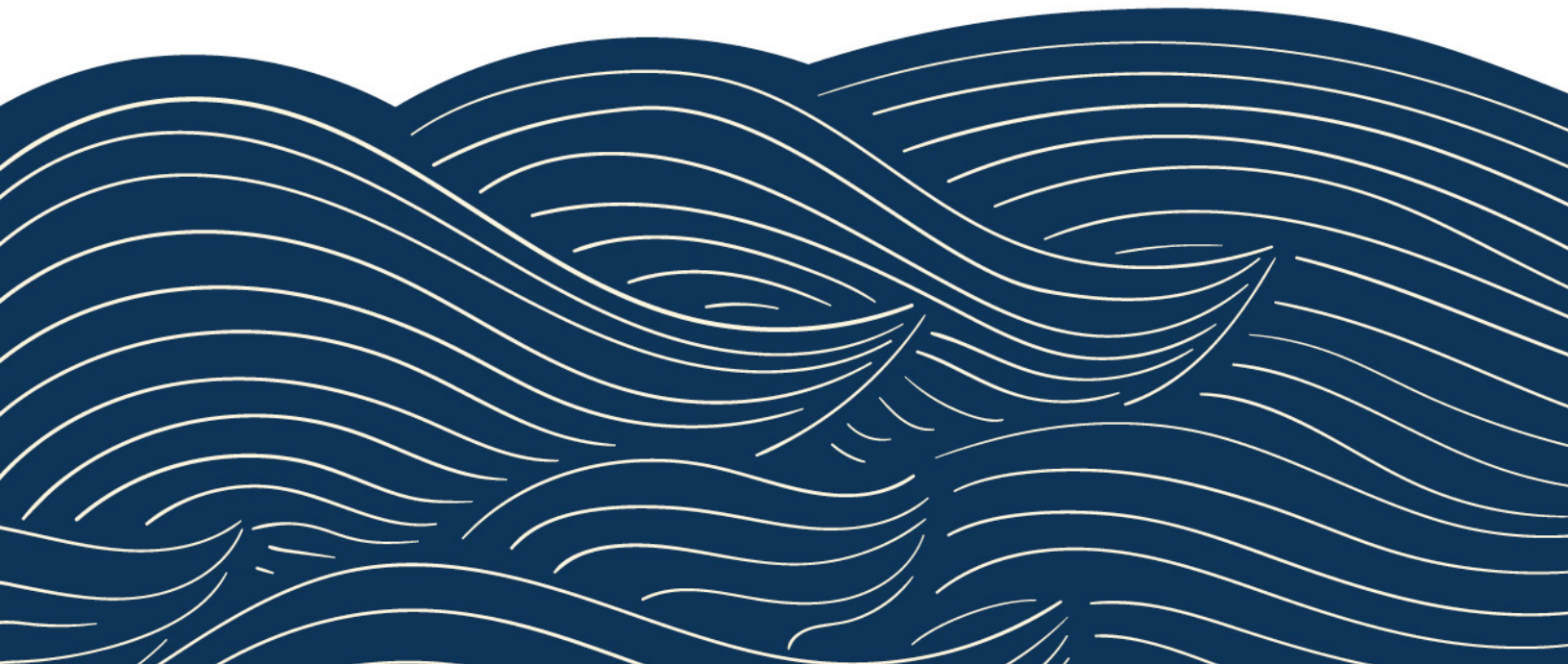

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Chapter 1
Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Chapter 1
Section 2.2	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	Not Applicable
Section 2.6	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	Chapter 2, Section 2.3
Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	Chapter 2, Section 2.3
Section 2.6, Section 6.1	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	Chapter 2, Section 2.3
Section 2.6	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	Not Applicable
Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Chapter 3
Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Chapter 3, Section 3.3
Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Chapter 3, Section 3.4.1
Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Chapter 3, Section 3.4.2
Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Chapter 3, Section 3.4.1
Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Chapter 3, Section 3.5
Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Chapter 4, Section 4.2
Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Chapter 4, Section 4.2.2
Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans and other policies or laws.	System Water Use	Chapter 4, Section 4.2.3
Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Chapter 4, Section 4.2.3
Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Chapter 4, Section 4.2.2
Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Chapter 4, Section 4.3
Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Chapter 4, Section 4.4, Chapter 6, Section 6.3, & Chapter 7, Section 7.2
Chapter 5	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	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Chapter 5
Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Not Applicable
Section 5.5	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	Chapter 5

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2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Baselines and Targets	Chapter 5 & Appendix E
Sections 6.1 and 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	Chapter 6, Section 6.2 & Chapter 7
Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, *including changes in supply due to climate change.*	System Supplies	Chapter 6 & Chapter 7
Section 6.1	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	Chapter 6, Section 6.2
Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Chapter 6, Section 6.2
Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Chapter 6, Section 6.2
Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Chapter 6, Section 6.1 & 6.2
Section 6.2.2	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	Chapter 6, Section 6.2.1
Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Chapter 6, Section 6.2.1
Section 6.2.2	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	Chapter 6, Section 6.2.1
Section 6.2.2.1	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	No Applicable
Section 6.2.2.4	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	Chapter 6, Section 6.2.1
Section 6.2.2	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	Chapter 6, Section 6.2.1
Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long- term basis.	System Supplies	Chapter 6, Section 6.2.7
Section 6.2.5	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)	Chapter 6, Section 6.2.5
Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Chapter 6, Section 6.2.5
Section 6.2.5	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)	Chapter 6, Section 6.2.5
Section 6.2.5	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)	Not Applicable
Section 6.2.5	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)	Chapter 6, Section 6.2.5
Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Chapter 6, Section 6.2.5
Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Chapter 6, Section 6.2.6
Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	Chapter 6, Section 6.2.5
Section 6.2.8, Section 6.3.7	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	Chapter 6, Section 6.2, Chapter 7, Section 7.1.1 & 7.1.3
Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	Chapter 6, Section 6.4

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2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
Section 7.2	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, Section 7.1.1
Section 7.2.4	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	Chapter 7, Section 7.1.4
Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Chapter 7, Section 7.1
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	Chapter 7, Section 7.2
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	Chapter 7, Section 7.2.1
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	Chapter 7
Section 7.3	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	Chapter 7
Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Chapter 7, Section 7.1
Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Appendix H
Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Appendix H, Section 1.1
Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Appendix H, Section 1.2
Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Appendix H, Section 1.2
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	Appendix H, Section 1.2
Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Appendix H, Section 1.3
Section 8.3	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	Not Applicable
Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Appendix H, Section 1.4
Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Appendix H, Section 1.4.1
Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix H, Section 1.4.3
Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Appendix H, Section 1.3, Section 1.4.1
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	Appendix H, Section 1.4.1
Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Appendix H, Section 1.4.5

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2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Appendix H, Section 1.5
Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Appendix H, Section 1.5
Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Appendix H, Section 1.6
Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix H, Section 1.7
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	Chapter 9, Section 9.1.1, Appendix H, Section 1.7
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	Chapter 9, Section 9.1.1, Appendix H, Section 1.7
Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix H, Section 1.8
Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix H, Section 1.8
Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Chapter 9, Section 9.1.4, Appendix H, Section 1.8
Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Appendix H, Section 1.9
Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Appendix H, Section 1.11
Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Appendix H, Section 1.12
Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Appendix H, Section 1.12
Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Chapter 9
Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	Chapter 2, Section 2.4.2
Section 10.2.1	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	Chapter 2, Section 2.4.1
Section 10.4	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	Chapter 2, Section 2.4.3
Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Plan Adoption, Submittal, and Implementation	Appendix B
Section 10.2.2	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	Chapter 2, Section 2.4.1 & Appendix B
Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Chapter 2, Section 2.4 & Appendix H
Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	To be completed per Chapter 2, Section 2.4.3
Section 10.4	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	To be completed per Chapter 2, Section 2.4.3

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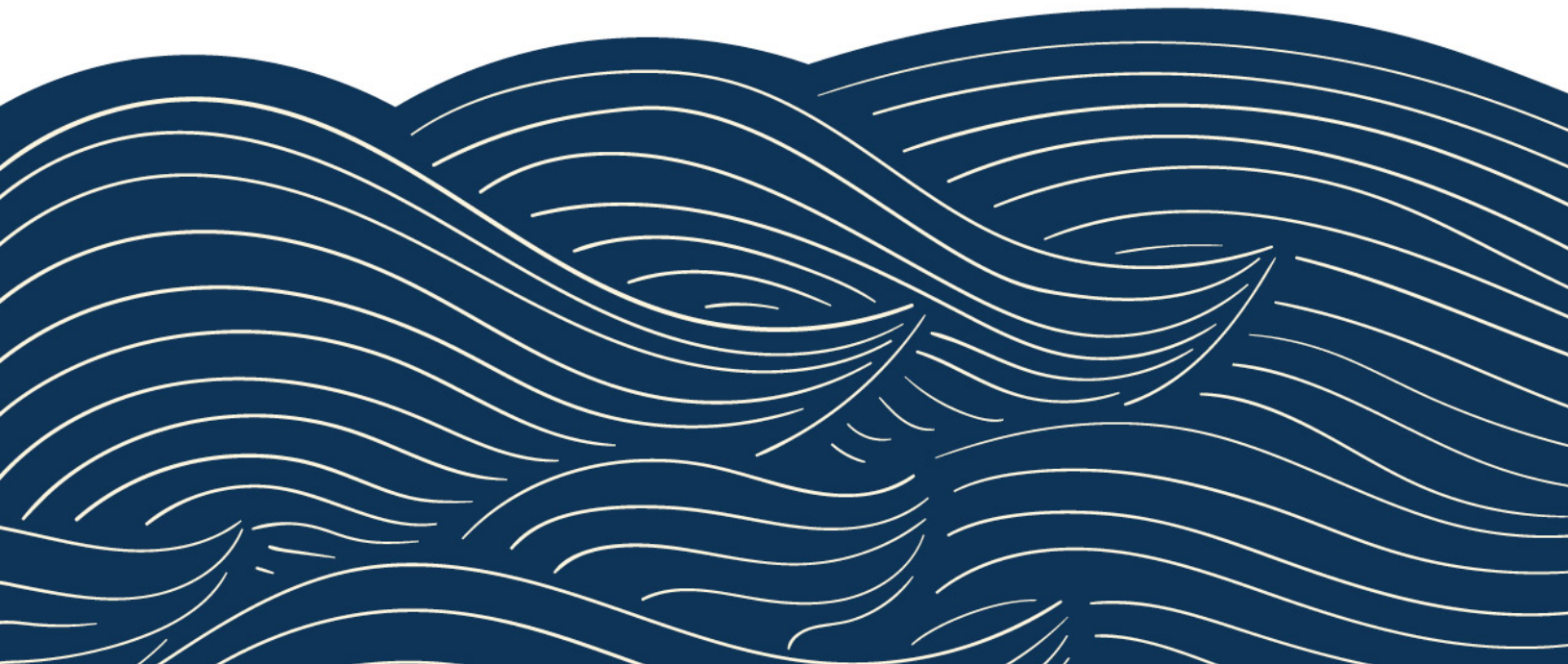
2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	To be completed per Chapter 2, Section 2.4.3 & 2.4.5
Section 10.5	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	To be completed per Chapter 2, Section 2.4.4
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	To be completed per Chapter 2, Section 2.4.4
Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	To be completed per Chapter 2, Section 2.4.3
Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	To be completed per Chapter 2, Section 2.4.4 & Appendix H

Public Draft

B

Appendix B. Notification and Outreach

ublic Draft



Nina Miller

From: Nina Miller
Sent: Friday, April 16, 2021 5:02 PM
To: Nina Miller
Cc: Ian C Crooks; Brian A Barreto
Subject: California American Water, Los Angeles County District – Notice of Preparation of the 2020 Urban Water Management Plan, 2020 Water Shortage Contingency Plan and an Appendix to the 2015 Urban Water Management Plan

Bcc: rdelgadillo@AzusaCa.gov; kkearney@cityofbradbury.org; djordan@accessduarte.com; salmendez@elmonteca.gov; wtam@irwindaleca.gov; citymanageroffice@cityofsanmarino.org; dfeik@ci.monrovia.ca.us; mlazzaretto@sgch.org; LAtwell@Cityofinglewood.org; bcook@templecity.us; info@dpw.lacounty.gov; tony@watermaster.org; engineeringsubstructures@mwdh2o.com; patricks@westbasin.org; info@usgvmwd.org; info@lacsd.org; cdaste@cityofrosemead.org; mjones@cityofrosemead.org

California American Water is in the process of preparing its Los Angeles County District 2020 Urban Water Management Plan (UWMP) and 2020 Water Shortage Contingency Plan (WSCP) as required by the Urban Water Management Planning Act (Act). In addition, California American Water is preparing an appendix to both the 2020 UWMP and the 2015 UWMP to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (California Code Reg., title 23, §5003). The 2015 UWMP is being amended only to report reduced reliance on the Delta and this action is separate from adoption of the 2020 UWMP and adoption of the 2020 WSCP.

California American Water is required to notify cities and counties within its service areas that it is preparing its 2020 UWMP, 2020 WSCP and Reduced Delta Reliance Appendix 60 days prior to holding a public hearing thereby encouraging public involvement and agency coordination. California American Water will notify you of the specific date, time, and location of this public hearing when finalized.

This email serves as your official notice of preparation and intent to adopt the 2020 UWMP, 2020 WSCP, and Delta Plan Policy WR P1 Appendix before the July 1, 2021 deadline. A draft of the 2020 UWMP, 2020 WSCP, and Delta Plan Policy WR P1 Appendix will be available for review in June 2021. Until that time, if you have any questions or comments regarding these documents please contact Water Systems Consulting, Inc., the consultant responsible for their preparation at:

Water Systems Consulting, Inc.
Attn. Spencer Waterman
805 Aerovista Place. Suite 201
San Luis Obispo, California 93401
(805) 457-8833 ext. 102
swaterman@wsc-inc.com

Sincerely,

Nina Miller
Manager, Capital Program and Asset Planning
California American Water
#

Public Draft

Southern

NOTICE OF PUBLIC HEARING

On California American Water's
Urban Water Management Plan

California American Water will hold a public hearing on Wednesday, June 16, 2021, on the final draft of the 2020 Urban Water Management Plan and Water Shortage Contingency Plans for its Los Angeles County District service area. **This service area includes the cities of Bradbury, Duarte, and San Marino, and portions of El Monte, Irwindale, Monrovia, Rosemead, San Gabriel, and Temple City, as well as unincorporated portions of Los Angeles County and the Baldwin Hills area.** Copies of the plan will be available for public review, and public comment will be accepted. The hearing will be held online at 4:00 p.m., Wednesday, June 16, 2021.

The link for this meeting is as follows:
https://bit.ly/3uhsBD2
Or call in (audio only)
+1 213-607-0501
Phone Conference ID: 670 587 726#

Public Draft

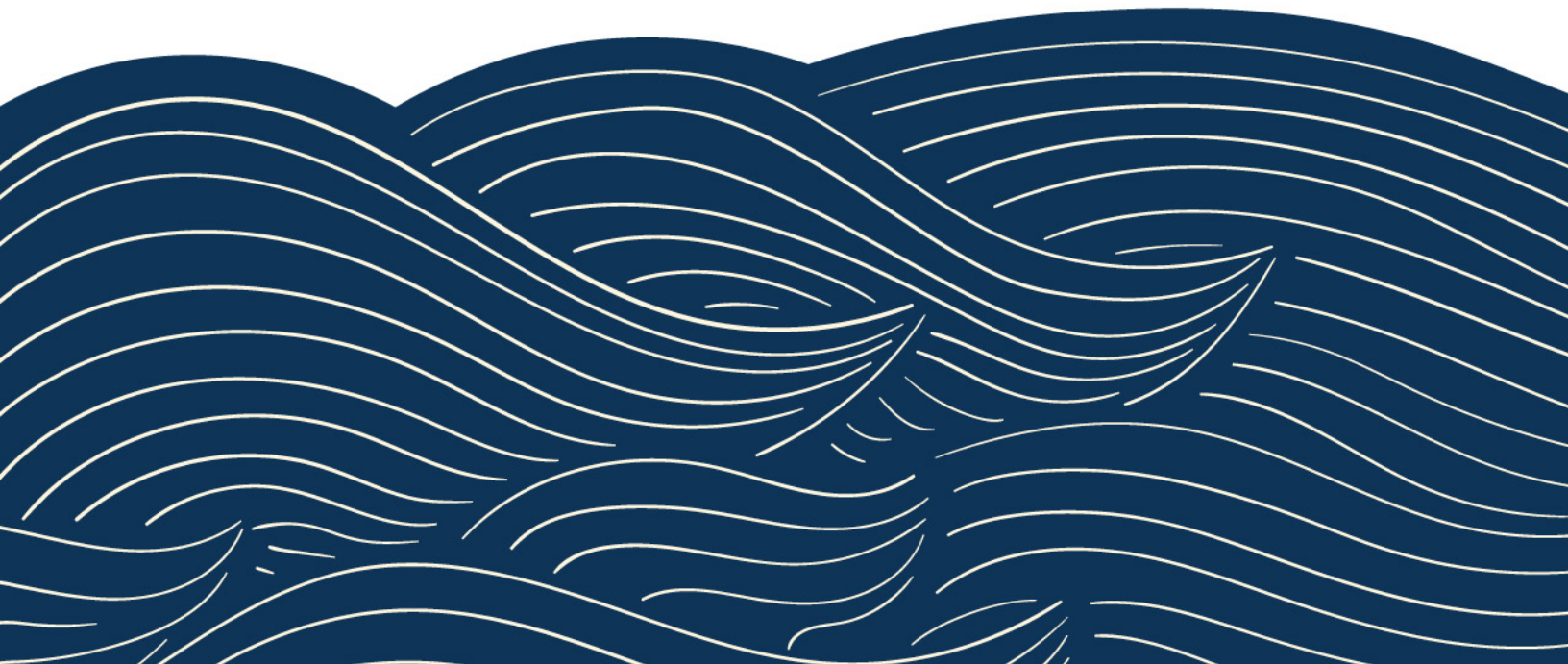
Final Public Hearing Notifications and Final Newspaper Postings to be Incorporated Upon Adoption and Finalization of the UWMP

Public Draft

C

Appendix C. Adoption Documentation

ublic Draft



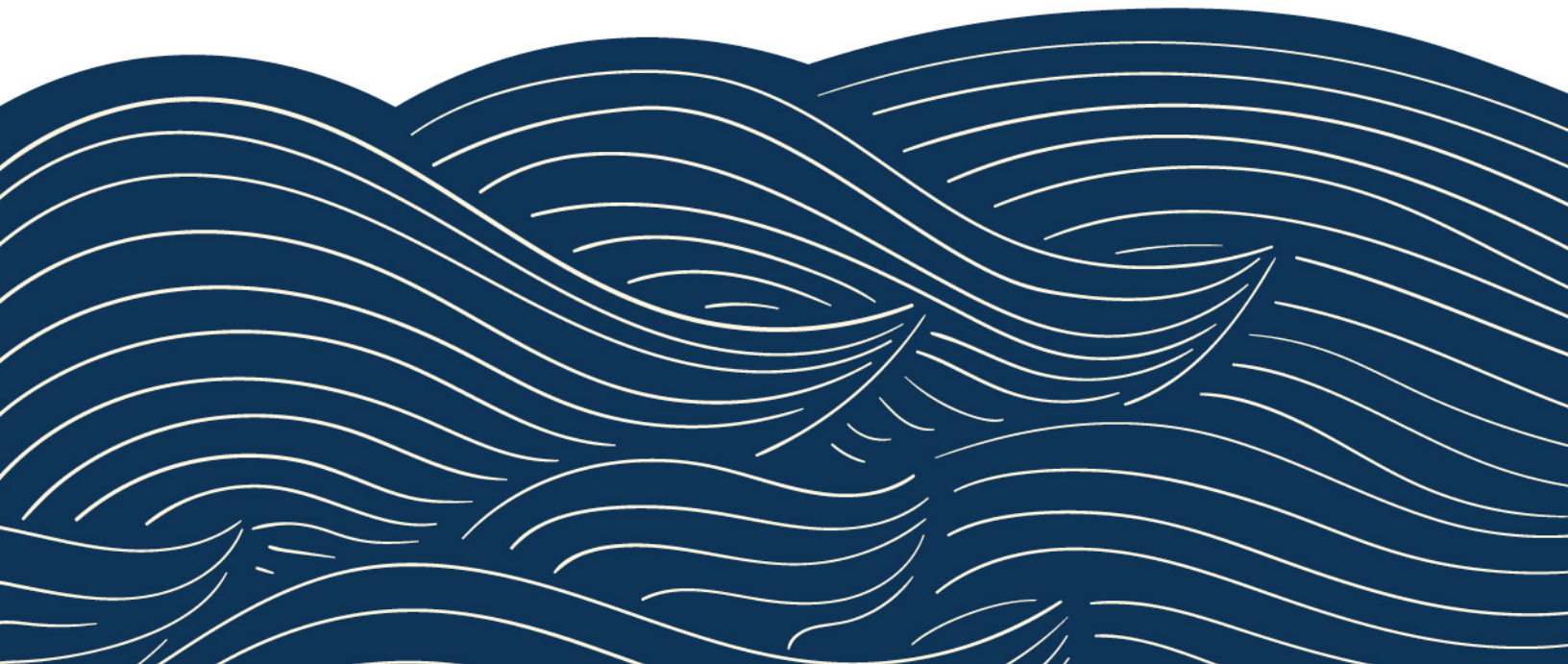
To Be Incorporated Upon Adoption and Finalization of the UWMP

Public Draft

D

Appendix D. AWWA Water Loss Audits

ublic Draft



AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

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Water Audit Report for: California American Water Los Angeles District - Baldwin Hills (1910052)
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 input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

			Pcnt:	Value:	
Volume from own sources:	7	380.580 MG/Yr		-9.100	MG/Yr
Water imported:	7	526.420 MG/Yr		-4.360	MG/Yr
Water exported:		0.000 MG/Yr			MG/Yr

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

WATER SUPPLIED: **920.460** MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	7	768.710 MG/Yr			
Billed unmetered:	n/a	0.000 MG/Yr			
Unbilled metered:	8	0.220 MG/Yr			
Unbilled unmetered:	7	1.420 MG/Yr		1.420	MG/Yr

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

AUTHORIZED CONSUMPTION: **770.350** MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

150.110 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		2.301 MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	7	14.660 MG/Yr		14.660	MG/Yr
Systematic data handling errors:		1.922 MG/Yr	0.25%		MG/Yr

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

Apparent Losses: **18.883** MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **131.227** MG/Yr

WATER LOSSES: **150.110** MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: **151.750** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	68.5	miles
Number of active AND inactive service connections:	7	6,674	
Service connection density:		98	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:	6	73.7	psi

COST DATA

Total annual cost of operating water system:	10	$5,086,725	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$6.61	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	6	$3,318.92	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 73 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: Volume from own sources
3: Billed metered

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Water Audit Report for: California American Water Los Angeles County District - Baldwin Hills (1910052)
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: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	7	553.250	MG/Yr	5		18.930	MG/Yr
Water imported:	7	441.340	MG/Yr	5		0.820	MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 974.840 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	885.940	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	0.270	MG/Yr			
Unbilled unmetered:	7	1.420	MG/Yr		1.420	MG/Yr

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

AUTHORIZED CONSUMPTION: 887.630 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 87.210 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		2.437	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	11.520	MG/Yr		11.520	MG/Yr
Systematic data handling errors:		2.215	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 16.172 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 71.038 MG/Yr

WATER LOSSES: 87.210 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 88.900 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	69.8	miles
Number of active AND inactive service connections:	7	6,484	
Service connection density:		93	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:	6	75.1	psi

COST DATA

Total annual cost of operating water system:	10	$4,781,205	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$6.12	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	6	$2,867.24	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

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

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Water imported
3: Billed metered

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Reporting Worksheet

WAS v5.0

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Water Audit Report for: California American Water Los Angeles County District - Baldwin Hills (1910052)
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: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	7	630.260	MG/Yr	5		-4.210	MG/Yr
Water imported:	5	322.140	MG/Yr	5			MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 956.610 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	872.870	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	1.150	MG/Yr			
Unbilled unmetered:	5	1.420	MG/Yr		1.420	MG/Yr

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

AUTHORIZED CONSUMPTION: 875.440 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 81.170 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		2.392	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	8.880	MG/Yr		8.880	MG/Yr
Systematic data handling errors:		2.182	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 13.454 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 67.716 MG/Yr

WATER LOSSES: 81.170 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 83.740 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	69.9	miles
Number of active AND inactive service connections:	7	6,535	
Service connection density:		94	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:	6	76.3	psi	

COST DATA

Total annual cost of operating water system:	10	$4,518,336	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$5.53	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	6	$2,518.29	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

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

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Water imported
3: Billed metered

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Water Audit Report for: California American Water Los Angeles County District - Baldwin Hills (1910052)
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: MILLION GALLONS (US) PER YEAR

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

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

WATER SUPPLIED

					Master Meter and Supply Error Adjustments			
					Pcnt:		Value:	
Volume from own sources:	7	757.730	MG/Yr	3			-2.610	MG/Yr
Water imported:	5	147.880	MG/Yr	3				MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr

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

WATER SUPPLIED: 908.220 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	846.440	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	9.830	MG/Yr			
Unbilled unmetered:	5	1.420	MG/Yr		1.420	MG/Yr

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

AUTHORIZED CONSUMPTION: 857.690 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 50.530 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	2.271	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	8.640	MG/Yr	8.640	MG/Yr
Systematic data handling errors:		2.116	MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 13.027 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 37.503 MG/Yr

WATER LOSSES: 50.530 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 61.780 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	69.8	miles
Number of active AND inactive service connections:	7	6,650	
Service connection density:		95	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: 6 75.9 psi

COST DATA

Total annual cost of operating water system:	10	$3,573,371	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$4.84	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	6	$2,037.43	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 71 out of 100 *****

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

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Water Audit Report for: California American Water - Los Angeles Co Baldwin Hills System (1910052)
Reporting Year: 2015 1/2015 - 12/2015

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	8	833.680	MG/Yr	n/a			MG/Yr
Water imported:	8	70.190	MG/Yr	n/a			MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 903.870 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	7	847.370	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	1.460	MG/Yr			
Unbilled unmetered:		11.298	MG/Yr	1.25%		MG/Yr

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

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

AUTHORIZED CONSUMPTION: 860.128 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 43.742 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		2.260	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	8.574	MG/Yr	1.00%	MG/Yr
Systematic data handling errors:		2.118	MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 12.952 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 30.789 MG/Yr

WATER LOSSES: 43.742 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 56.500 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	69.0	miles
Number of active AND inactive service connections:	7	6,238	
Service connection density:		90	conn./mile main

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

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

Average operating pressure:	8	91.0	psi

COST DATA

Total annual cost of operating water system:	7	$17,510,538	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$5.15	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	7	$973.52	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 73 out of 100 *****

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

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Water Audit Report for: California American Water Los Angeles District - Duarte (1910186)
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 input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

	Grading	Volume		Pcnt	Value	
Volume from own sources:	5	1,821.250	MG/Yr	5	-9.650	MG/Yr
Water imported:	n/a	0.000	MG/Yr			MG/Yr
Water exported:	n/a	0.000	MG/Yr			MG/Yr

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

WATER SUPPLIED: 1,830.900 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

	Grading	Volume		Pcnt	Value	
Billed metered:	7	1,467.550	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	0.830	MG/Yr			
Unbilled unmetered:	7	3.970	MG/Yr		3.970	MG/Yr

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

AUTHORIZED CONSUMPTION: 1,472.350 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 358.550 MG/Yr

Apparent Losses

	Grading	Volume		Pcnt	Value	
Unauthorized consumption:		4.577	MG/Yr	0.25%		MG/Yr

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

	Grading	Volume		Pcnt	Value	
Customer metering inaccuracies:	7	24.580	MG/Yr		24.580	MG/Yr
Systematic data handling errors:		3.669	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 32.826 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 325.724 MG/Yr

WATER LOSSES: 358.550 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 363.350 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

	Grading	Value	
Length of mains:	8	101.0	miles
Number of active AND inactive service connections:	7	7,996	
Service connection density:		79	conn./mile main

	Value	
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

	Grading	Value	
Average operating pressure:	6	74.6	psi

COST DATA

	Grading	Value	
Total annual cost of operating water system:	10	$5,180,199	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$5.81	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	6	$1,499.68	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

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: Volume from own sources
2: Billed metered
3: Variable production cost (applied to Real Losses)

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Water Audit Report for: California American Water Los Angeles County District - Duarte (1910186)
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: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	5	1,906.910	MG/Yr	5		-72.290	MG/Yr
Water imported:	n/a	0.000	MG/Yr				MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 1,979.200 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	1,617.300	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	1.970	MG/Yr			
Unbilled unmetered:	7	3.970	MG/Yr		3.970	MG/Yr

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

AUTHORIZED CONSUMPTION: ? 1,623.240 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 355.960 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		4.948 MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	19.550 MG/Yr		19.550	MG/Yr
Systematic data handling errors:		4.043 MG/Yr	0.25%		MG/Yr

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

Apparent Losses: ? 28.541 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 327.419 MG/Yr

WATER LOSSES: 355.960 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: ? 361.900 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	103.6	miles
Number of active AND inactive service connections:	7	7,772	
Service connection density:		75	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: 6 74.2 psi

COST DATA

Total annual cost of operating water system:	10	$5,196,115	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$5.07	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	6	$1,512.15	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

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

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

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Water Audit Report for: California American Water Los Angeles County District - Duarte (1910186)
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: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:		Value:	
Volume from own sources:	5	1,828.790	MG/Yr	5		○ ◉	13.920	MG/Yr
Water imported:	n/a	0.000	MG/Yr			◉ ○		MG/Yr
Water exported:	n/a	0.000	MG/Yr			◉ ○		MG/Yr

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

WATER SUPPLIED: 1,814.870 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:		Value:	
Billed metered:	7	1,529.910	MG/Yr				
Billed unmetered:	n/a	0.000	MG/Yr				
Unbilled metered:	8	1.350	MG/Yr				
Unbilled unmetered:	5	3.970	MG/Yr		○ ◉	3.970	MG/Yr

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

AUTHORIZED CONSUMPTION: 1,535.230 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 279.640 MG/Yr

Apparent Losses

				Pcnt:		Value:	
Unauthorized consumption:		4.537	MG/Yr	0.25%	◉ ○		MG/Yr

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

Customer metering inaccuracies:	6	16.830	MG/Yr		○ ◉	16.830	MG/Yr
Systematic data handling errors:		3.825	MG/Yr	0.25%	◉ ○		MG/Yr

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

Apparent Losses: 25.192 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 254.448 MG/Yr

WATER LOSSES: 279.640 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 284.960 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	95.6	miles
Number of active AND inactive service connections:	7	7,809	
Service connection density:		82	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: 6 76.8 psi

COST DATA

Total annual cost of operating water system:	10	$4,646,762	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$4.07	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	6	$435.93	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

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

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

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Water Audit Report for: California American Water Los Angeles County District - Duarte (1910186)
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: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

						Pcnt:		Value:	
Volume from own sources:	7	1,647.060	MG/Yr	3		○ ◉	18.130	MG/Yr
Water imported:	n/a	0.000	MG/Yr			◉ ○		MG/Yr
Water exported:	n/a	0.000	MG/Yr			◉ ○		MG/Yr

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

WATER SUPPLIED: 1,628.930 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:		Value:	
Billed metered:	7	1,444.000	MG/Yr				
Billed unmetered:	n/a	0.000	MG/Yr				
Unbilled metered:	8	2.360	MG/Yr				
Unbilled unmetered:	5	3.970	MG/Yr		○ ◉	3.970	MG/Yr

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

AUTHORIZED CONSUMPTION: 1,450.330 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 178.600 MG/Yr

Apparent Losses

			Pcnt:		Value:	
Unauthorized consumption:	4.072	MG/Yr	0.25%	◉ ○		MG/Yr

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

Customer metering inaccuracies:	6	16.000	MG/Yr		○ ◉	16.000	MG/Yr
Systematic data handling errors:		3.610	MG/Yr	0.25%	◉ ○		MG/Yr

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

Apparent Losses: 23.682 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 154.918 MG/Yr

WATER LOSSES: 178.600 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 184.930 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	97.3	miles
Number of active AND inactive service connections:	7	7,915	
Service connection density:		81	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: 6 79.6 psi

COST DATA

Total annual cost of operating water system:	10	$3,633,756	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$3.71	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	6	$957.34	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

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

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

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Water Audit Report for: California American Water - Los Angeles Co Duarte System (1910186)
Reporting Year: 2015 | 1/2015 - 12/2015

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	8	1,630.020	MG/Yr	n/a			MG/Yr
Water imported:	8	138.870	MG/Yr	n/a			MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 1,768.890 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	1,555.820	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	12.790	MG/Yr			
Unbilled unmetered:		22.111	MG/Yr	1.25%		MG/Yr

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

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

AUTHORIZED CONSUMPTION: 1,590.721 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 178.169 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		4.422	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	15.845	MG/Yr	1.00%		MG/Yr
Systematic data handling errors:		3.890	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 24.156 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 154.013 MG/Yr

WATER LOSSES: 178.169 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 213.070 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	98.2	miles
Number of active AND inactive service connections:	7	7,464	
Service connection density:		76	conn./mile main

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

(length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line:

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

Average operating pressure: 8 | 81.0 psi

COST DATA

Total annual cost of operating water system:	7	$17,510,538	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$5.15	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	7	$973.52	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 73 out of 100 *****

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

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Water Audit Report for: California American Water Los Angeles District - San Marino (1910139)
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 input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

	Grading	Volume		Pcnt:	Value:	
Volume from own sources:	5	2,776.520	MG/Yr		-4.490	MG/Yr
Water imported:	6	314.460	MG/Yr		0.450	MG/Yr
Water exported:	n/a	0.000	MG/Yr			MG/Yr

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

WATER SUPPLIED: 3,095.020 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

	Grading	Volume		Pcnt:	Value:	
Billed metered:	7	2,693.550	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	0.160	MG/Yr			
Unbilled unmetered:	7	3.230	MG/Yr		3.230	MG/Yr

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

AUTHORIZED CONSUMPTION: 2,696.940 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 398.080 MG/Yr

Apparent Losses

	Grading	Volume		Pcnt:	Value:	
Unauthorized consumption:		7.738	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	50.040	MG/Yr		50.040	MG/Yr
Systematic data handling errors:		6.734	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 64.511 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 333.569 MG/Yr

WATER LOSSES: 398.080 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 401.470 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

	Grading		
Length of mains:	8	181.3	miles
Number of active AND inactive service connections:	7	15,366	
Service connection density:		85	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: 6 71.9 psi

COST DATA

	Grading		
Total annual cost of operating water system:	10	$8,686,745	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$5.39	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	6	$1,295.12	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

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: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

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Water Audit Report for: California American Water Los Angeles County District - San Marino (1910139)
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: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:		Value:	
Volume from own sources:	5	2,990.710	MG/Yr	5		○ ◉	2.430	MG/Yr
Water imported:	6	311.460	MG/Yr	5		○ ◉	0.450	MG/Yr
Water exported:	n/a	0.000	MG/Yr			◉ ○		MG/Yr

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

WATER SUPPLIED: **3,299.290** MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:		Value:	
Billed metered:	7	3,116.050	MG/Yr				
Billed unmetered:	n/a	0.000	MG/Yr				
Unbilled metered:	8	7.750	MG/Yr				
Unbilled unmetered:	5	3.230	MG/Yr		○ ◉	3.230	MG/Yr

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

AUTHORIZED CONSUMPTION: **3,127.030** MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) **172.260** MG/Yr

Apparent Losses

				Pcnt:		Value:	
Unauthorized consumption:		8.248	MG/Yr	0.25%	◉ ○		MG/Yr

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

Customer metering inaccuracies:	6	31.930	MG/Yr		○ ◉	31.930	MG/Yr
Systematic data handling errors:		7.790	MG/Yr	0.25%	◉ ○		MG/Yr

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

Apparent Losses: **47.968** MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **124.292** MG/Yr

WATER LOSSES: **172.260** MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: **183.240** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	184.6	miles
Number of active AND inactive service connections:	7	14,940	
Service connection density:		81	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:	6	76.3	psi

COST DATA

Total annual cost of operating water system:	10	$8,594,693	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$4.80	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	6	$1,256.40	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

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

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

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Water Audit Report for: California American Water Los Angeles County District - San Marino (1910139)
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: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:		Value:	
Volume from own sources:	5	2,865.610	MG/Yr	5		○ ◉	44.660	MG/Yr
Water imported:	5	324.480	MG/Yr	5		○ ◉		MG/Yr
Water exported:	n/a	0.000	MG/Yr			◉ ○		MG/Yr

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

WATER SUPPLIED: 3,145.430 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:		Value:	
Billed metered:	7	2,970.490	MG/Yr				
Billed unmetered:	n/a	0.000	MG/Yr				
Unbilled metered:	8	0.390	MG/Yr				
Unbilled unmetered:	5	3.230	MG/Yr		○ ◉	3.230	MG/Yr

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

AUTHORIZED CONSUMPTION: 2,974.110 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 171.320 MG/Yr

Apparent Losses

				Pcnt:		Value:	
Unauthorized consumption:		7.864	MG/Yr	0.25%	◉ ○		MG/Yr

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

Customer metering inaccuracies:	6	30.640	MG/Yr		○ ◉	30.640	MG/Yr
Systematic data handling errors:		7.426	MG/Yr	0.25%	◉ ○		MG/Yr

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

Apparent Losses: 45.930 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 125.390 MG/Yr

WATER LOSSES: 171.320 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 174.940 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	179.6	miles
Number of active AND inactive service connections:	7	15,045	
Service connection density:		84	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: 6 75.5 psi

COST DATA

Total annual cost of operating water system:	10	$8,651,664	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$4.40	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	6	$1,182.18	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

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

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

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Water Audit Report for: California American Water Los Angeles County District - San Marino (1910139)
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: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

					Pcnt:	Value:	
Volume from own sources:	7	2,591.850	MG/Yr	3		46.240	MG/Yr
Water imported:	5	318.340	MG/Yr	3			MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: **2,863.950** MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	2,609.770	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	7.700	MG/Yr			
Unbilled unmetered:	5	3.230	MG/Yr		3.230	MG/Yr

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

AUTHORIZED CONSUMPTION: **2,620.700** MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) **243.250** MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		7.160	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	27.300	MG/Yr		27.300	MG/Yr
Systematic data handling errors:		6.524	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: **40.984** MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **202.266** MG/Yr

WATER LOSSES: **243.250** MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: **254.180** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	178.9	miles
Number of active AND inactive service connections:	7	15,271	
Service connection density:		85	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: 6 76.9 psi

COST DATA

Total annual cost of operating water system:	10	$6,699,246	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$3.85	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	6	$938.28	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 71 out of 100 *****

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

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Water Audit Report for: California American Water - Los Angeles Co San Marino System (1910139)
Reporting Year: 2015 1/2015 - 12/2015

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	8	2,605.920	MG/Yr	n/a			MG/Yr
Water imported:	8	316.680	MG/Yr	n/a			MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 2,922.600 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	2,792.100	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	0.370	MG/Yr			
Unbilled unmetered:		36.533	MG/Yr	1.25%		MG/Yr

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

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

AUTHORIZED CONSUMPTION: 2,829.003 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 93.598 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		7.307	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	28.207	MG/Yr	1.00%	MG/Yr
Systematic data handling errors:		6.980	MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 42.494 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 51.104 MG/Yr

WATER LOSSES: 93.598 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 130.500 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	173.2	miles
Number of active AND inactive service connections:	7	14,120	
Service connection density:		82	conn./mile main

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

(length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line:

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

Average operating pressure: 8 64.0 psi

COST DATA

Total annual cost of operating water system:	7	$17,510,538	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$5.15	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	7	$973.52	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 73 out of 100 *****

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

PRIORITY AREAS FOR ATTENTION:

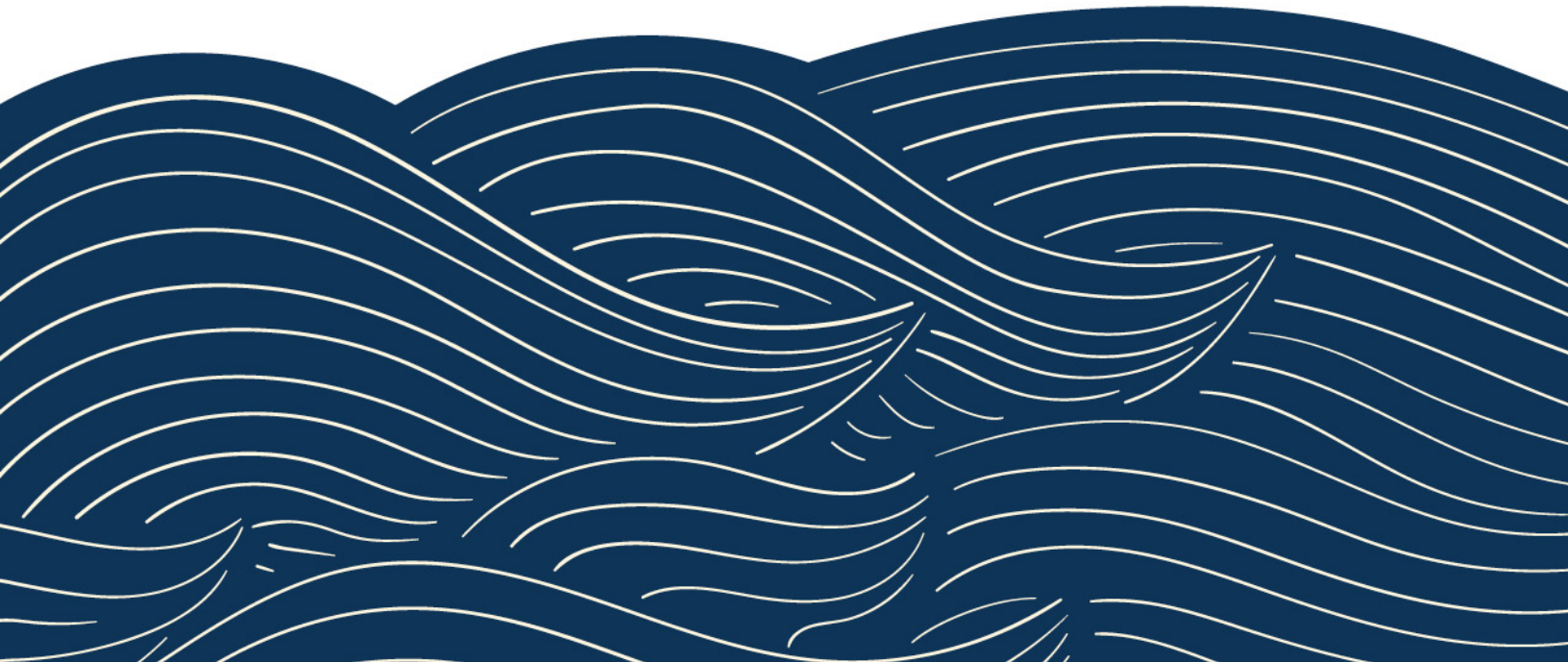
Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

E

Appendix E. SBX7-7 Verification and Compliance Forms

ublic Draft



SB X7-7 Table 0: Units of Measure Used in UWMP* *(select one from the drop down list)*
Acre Feet
**The unit of measure must be consistent with Submittal Table 2-3*
NOTES:

Public Draft

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	23,851	Acre Feet
	2008 total volume of delivered recycled water	-	Acre Feet
	2008 recycled water as a percent of total deliveries	0%	**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:

Public Draft

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) or **American Community Survey** (ACS)
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

Public Draft

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	1999	100,382
Year 2	2000	100,603
Year 3	2001	100,724
Year 4	2002	100,845
Year 5	2003	100,966
Year 6	2004	101,087
Year 7	2005	101,208
Year 8	2006	101,328
Year 9	2007	101,449
Year 10	2008	101,570
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2004	101,087
Year 2	2005	101,208
Year 3	2006	101,328
Year 4	2007	101,449
Year 5	2008	101,570
NOTES:		

Public Draft

SB X7-7 Table 4: Annual Gross Water Use *								
			Deductions					Acre Feet
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.*	**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.*	**Annual Gross Water Use**
10 to 15 Year Baseline - Gross Water Use								
Year 1	1999	24,044			-		-	24,044
Year 2	2000	25,000			-		-	25,000
Year 3	2001	23,913			-		-	23,913
Year 4	2002	24,926			-		-	24,926
Year 5	2003	23,090			-		-	23,090
Year 6	2004	24,264			-		-	24,264
Year 7	2005	23,450			-		-	23,450
Year 8	2006	25,303			-		-	25,303
Year 9	2007	26,270			-		-	26,270
Year 10	2008	23,851			-		-	23,851
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**24,411**
5 Year Baseline - Gross Water Use								
Year 1	2004	24,264			-		-	24,264
Year 2	2005	23,450			-		-	23,450
Year 3	2006	25,303			-		-	25,303
Year 4	2007	26,270			-		-	26,270
Year 5	2008	23,851			-		-	23,851
5 year baseline average gross water use								**24,628**

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

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SB X7-7 Table 4-A: Volume Entering the Distribution System(s)
Complete one table for each source.

Name of Source	CAW LA County District Own Source
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[1]	Meter Error Adjustment[2] *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1999	24,044		24,044
Year 2	2000	25,000		25,000
Year 3	2001	23,913		23,913
Year 4	2002	24,926		24,926
Year 5	2003	23,090		23,090
Year 6	2004	24,264		24,264
Year 7	2005	20,499		20,499
Year 8	2006	20,957		20,957
Year 9	2007	22,265		22,265
Year 10	2008	19,661		19,661
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	24,264		24,264
Year 2	2005	20,499		20,499
Year 3	2006	20,957		20,957
Year 4	2007	22,265		22,265
Year 5	2008	19,661		19,661

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

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

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)
Complete one table for each source.

Name of Source	CAW LA County District Imported Source
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[1]	Meter Error Adjustment[2] *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1999	0		0
Year 2	2000	0		0
Year 3	2001	0		0
Year 4	2002	0		0
Year 5	2003	0		0
Year 6	2004	0		0
Year 7	2005	2951.44		2,951
Year 8	2006	4346		4,346
Year 9	2007	4005		4,005
Year 10	2008	4190		4,190
Year 11	0			0
Year 12	0			0
Year 13	0			0
Year 14	0			0
Year 15	0			0
5 Year Baseline - Water into Distribution System				
Year 1	2004	0		0
Year 2	2005	2951.44		2,951
Year 3	2006	4346		4,346
Year 4	2007	4005		4,005
Year 5	2008	4190		4,190

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

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

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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 [1]	Percent Recycled Water	Recycled Water Delivered to Treatment Plant	Transmission/ Treatment Loss [1]	Recycled Volume Entering Distribution System from Surface Reservoir Augmentation	Recycled Water Pumped by Utility [1, 2]	Transmission/ Treatment Losses [1]	Recycled Volume Entering Distribution System from Groundwater Recharge	
10-15 Year Baseline - Indirect Recycled Water Use										
Year 1	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			-		-			-	-

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

[2] *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.*

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SB X7-7 Table 5: Baseline 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	100,382	24,044	214
Year 2	2000	100,603	25,000	222
Year 3	2001	100,724	23,913	212
Year 4	2002	100,845	24,926	221
Year 5	2003	100,966	23,090	204
Year 6	2004	101,087	24,264	214
Year 7	2005	101,208	23,450	207
Year 8	2006	101,328	25,303	223
Year 9	2007	101,449	26,270	231
Year 10	2008	101,570	23,851	210
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**216**
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	101,087	24,264	214
Year 2	2005	101,208	23,450	207
Year 3	2006	101,328	25,303	223
Year 4	2007	101,449	26,270	231
Year 5	2008	101,570	23,851	210
5 Year Average Baseline GPCD				**217**
NOTES:				

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SB X7-7 Table 6: Baseline GPCD *From Table SB X7-7 Table 5*	*Summary*
10-15 Year Baseline GPCD	216
5 Year Baseline GPCD	217
NOTES:	

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SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		**Supporting Tables**
☐	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D
☐	Method 3	SB X7-7 Table 7-E
☑	Method 4	Method 4 Calculator *Located in the WUE Data Portal at wuedata.water.ca.gov* Resources *button*
NOTES:		

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SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
216	**173**
NOTES:	

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SB X7-7 Table 7-E: Target Method 3				
Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
☐		North Coast	137	130
☐		North Lahontan	173	164
☐		Sacramento River	176	167
☐		San Francisco Bay	131	124
☐		San Joaquin River	174	165
☐		Central Coast	123	117
☐		Tulare Lake	188	179
☐		South Lahontan	170	162
☑	100%	South Coast	149	142
☐		Colorado River	211	200
			2020 Target *(If more than one region is selected, this value is calculated.)*	**142**
NOTES:				

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Target Calculation -- Provisional Method 4 Target

Step 1. Calculation of Landscape Water Use and System Water Loss

Urban Supplier	1999-2008 Baseline GPCD	—	Assumed Indoor Residential per Capita Water Use GPCD	—	CII per Capita Water Use GPCD	=	Estimated Landscape Water Use and System Water Loss GPCD
California American Water	214.7		70.0		26.4		118.3

Step 2. Calculation of Savings Using BMP Calculators

Urban Supplier	Indoor Residential Savings Calculators					+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	Total Savings GPCD
	Single Family Toilets	Multi Family Toilets	Resi-dential Washers	Resi-dential Showers	Total IR Savings								
California American Water			0.0	0.0	0.0		0.0		2.6		25.6		28.2

(Alternate) Step 2. Calculation of Savings Using Default Indoor Residential Savings

(Alternate) STEP 2 NOT BEING USED TO CALCULATE TARGET

Urban Supplier	Default Resi-dential Indoor Savings	+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	(alt) Total Savings GPCD
California American Water	15.0		XXXX		XXXX		XXXX		XXXX

Step 3. Calculation of Urban Water Use Targets

Urban Supplier	1999-2008 Baseline GPCD	—	Total Savings GPCD	=	**Computed 2020 Target GPCD**	⇒	**Less Than 95% of 5-Year Baseline**	⇒	**Final 2020 Target**	⇒	**Final 2015 Target**
California American Water	214.7		28.2		**186.5**		**TRUE**		**186.5**		**200.6**

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SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target					
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	**Calculated 2020 Target [2]**			**Confirmed 2020 Target[4]**
		As calculated by supplier in this SB X7-7 Verification Form	**Special Situations[3]**		
			Prorated 2020 Target	Population Weighted Average 2020 Target	
217	206	187			**187**

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

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

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

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

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SB X7-7 Table 0: Units of Measure Used in 2020 UWMP* *(select one from the drop down list)*
Acre Feet
**The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.*
NOTES:

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SB X7-7 Table 2: Method for 2020 Population Estimate	
Method Used to Determine 2020 Population (may check more than one)	
☐	**1. Department of Finance** (DOF) or **American Community Survey** (ACS)
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

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SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	101,670
NOTES:	

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SB X7-7 Table 4: 2020 Gross Water Use							
Compliance Year 2020	**2020 Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**2020 Deductions**					**2020 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.*	
	19,453			-		-	**19,453**
*** Units of measure (AF, MG , or CCF)** must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.							
NOTES:							

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SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	CAW LA County District Supply
This water source is *(check one)* **:**	
☑	The supplier's own water source
☑	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	19,453	-	19,453

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.* [2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

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SB X7-7 Table 4-B: 2020 Indirect Recycled Water Use Deduction *(For use only by agencies that are deducting indirect recycled water)*

2020 Compliance Year	2020 Surface Reservoir Augmentation					2020 Groundwater Recharge			Total Deductible Volume of Indirect Recycled Water Entering the Distribution System
	Volume Discharged from Reservoir for Distribution System Delivery[1]	Percent Recycled Water	Recycled Water Delivered to Treatment Plant	Transmission/ Treatment Loss[1]	Recycled Volume Entering Distribution System from Surface Reservoir Augmentation	Recycled Water Pumped by Utility[1,2]	Transmission/ Treatment Losses[1]	Recycled Volume Entering Distribution System from Groundwater Recharge	
			-		-			-	-

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.*

[2] *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.*

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SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water *Fm SB X7-7 Table 4*	**2020 Population** *Fm SB X7-7 Table 3*	**2020 GPCD**
19,453	101,670	**171**
NOTES:		

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SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD[1]	Optional Adjustments to 2020 GPCD (Enter "0" if Adjustment Not Used)			TOTAL Adjustments[1]	Adjusted 2020 GPCD [1] *(Adjusted if applicable)*	2020 Confirmed Target GPCD [1, 2]	**Did Supplier Achieve Targeted Reduction for 2020?**
	Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]				
171	-	-	-	-	171	187	**YES**

[1] *All values are reported in GPCD*

[2] ***2020 Confirmed Target GPCD*** *is taken from the Supplier's SB X7-7 Verification Form Table SB X7-7, 7-F.*

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Appendix F. Consistency with Delta Plan

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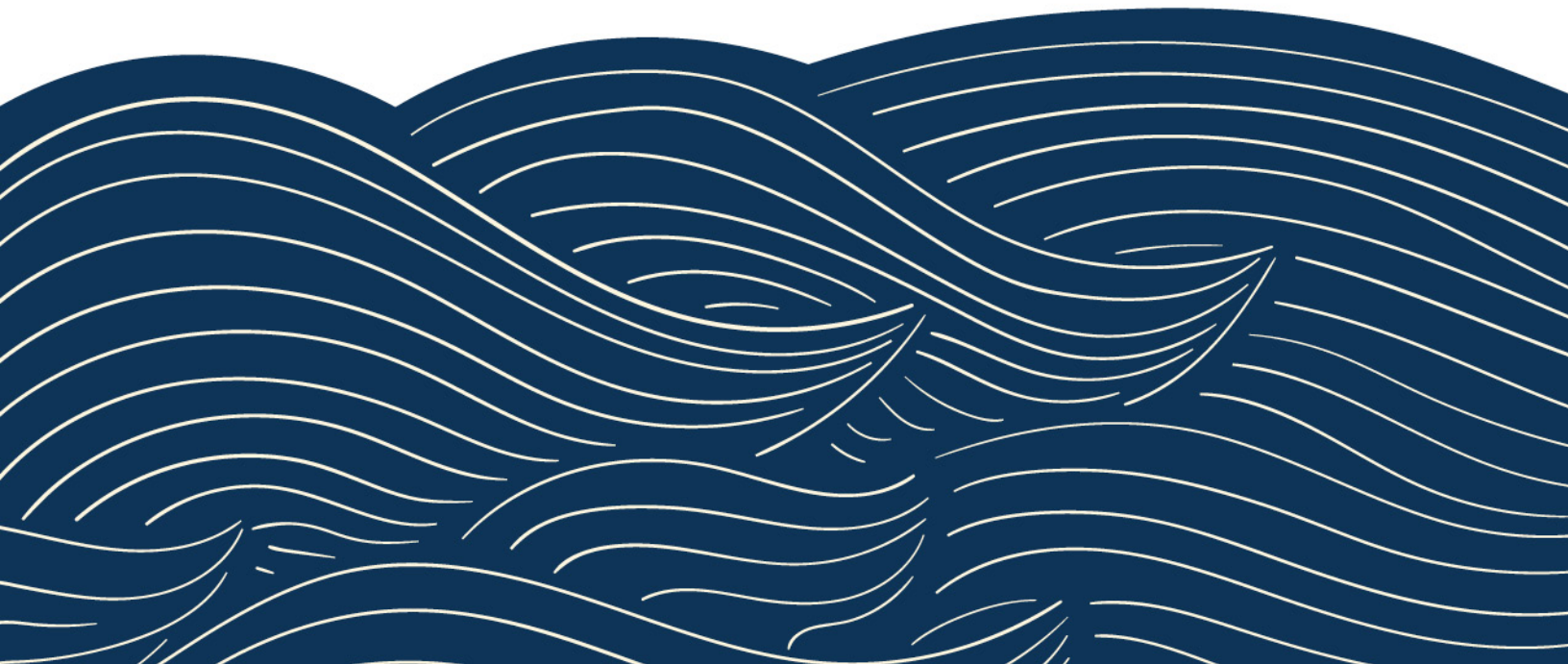

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Appendix F: Demonstration of Reduced Delta Reliance

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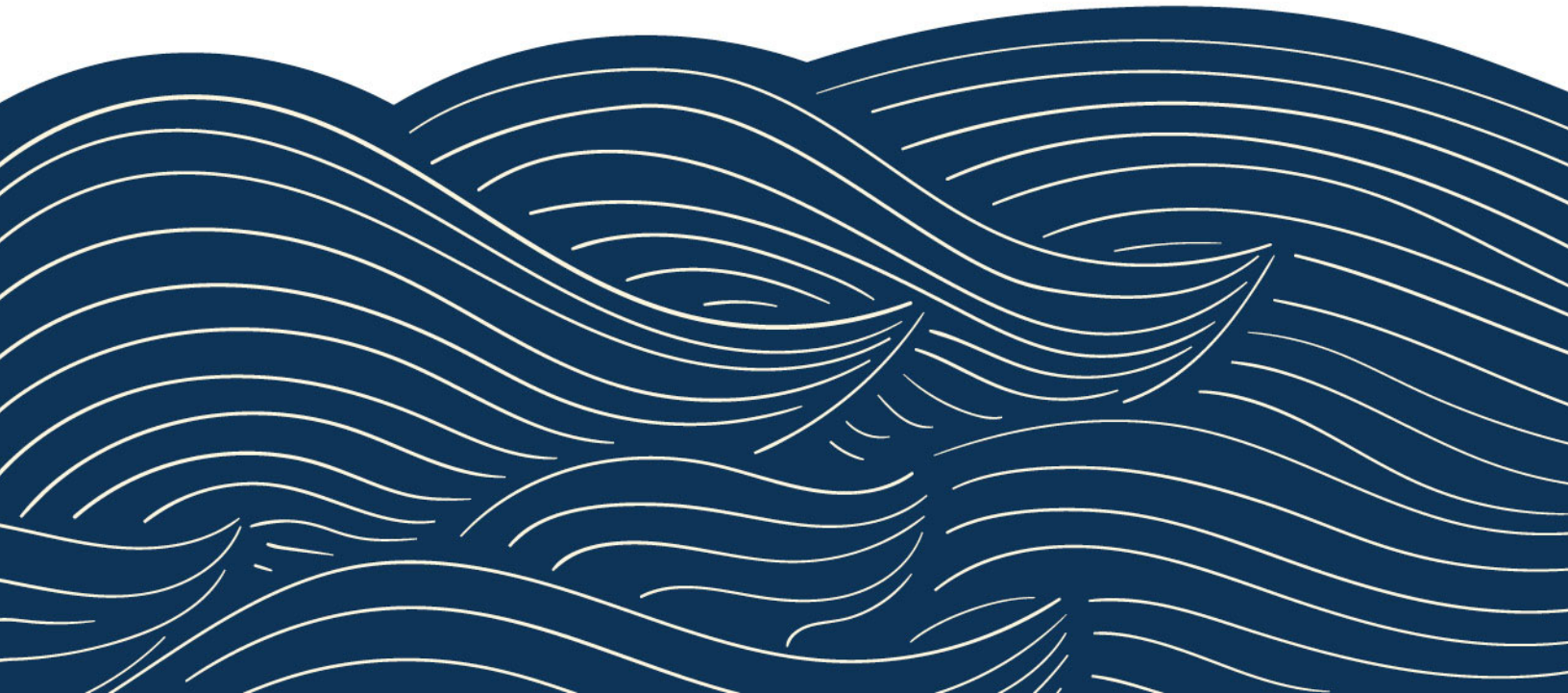

Quantifying Regional Self-Reliance and Reduced Reliance on Water Supplies from the Delta

1. 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 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;*
> >
> > *(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*

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> *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 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. Demonstration of Regional Self-Reliance

The methodology used to determine the California American Water Southern Division Los Angeles County District's (Los Angeles County District) improved regional self-reliance is consistent with the approach detailed in DWR's UWMP Guidebook Appendix C (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 the Los Angeles District's demonstration of reduced reliance 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 Los Angeles County District and its customers.

Baseline and Expected Outcomes

To calculate the expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance, a baseline is needed to compare against. This analysis uses a normal water year representation of 2010 as the baseline, which is consistent with the approach described in the Guidebook Appendix C. Data for the 2010 baseline were taken from the Los Angeles County District's 2005 UWMP as UWMPs generally do not provide normal water year data for the year that they are adopted (i.e., 2005 UWMP forecasts begin in 2010, 2010 UWMP forecasts begin in 2015, and so on).

Consistent with the 2010 baseline data approach, the expected outcomes for reduced Delta reliance and improved regional self-reliance for 2015 and 2020 were taken from the Los Angeles County District's 2010 and 2015 UWMPs, respectively. Expected outcomes for 2025-2045 are from the current 2020 UWMP. Documentation of the specific data sources and assumptions are included in the discussions below.

Service Area Demands without Water Use Efficiency

In alignment with the Guidebook Appendix C, this analysis uses normal water year demands, rather than normal water year supplies to calculate expected outcomes in terms of the percentage of water used. Normal water year demands serve as a proxy for the amount of supplies that would be used in a normal water year, which helps alleviate issues associated with how supply capability is presented to fulfill requirements of the UWMP Act versus how supplies might be accounted for to demonstrate consistency with WR P1.

Because WR P1 considers water use efficiency savings a source of water supply, water suppliers can calculate their embedded water use efficiency savings based on changes in forecasted per capita water use since the baseline. As explained in the Guidebook Appendix C, water use efficiency savings must be added back to the normal year demands to represent demands without water use efficiency savings accounted for; otherwise, the effect of water use efficiency savings on regional self-reliance would be overestimated. Table C-1 shows the results of this adjustment for the Los Angeles County District. Supporting narratives and documentation for all the data shown in Table C-1 are provided below.

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Service Area Demands with Water Use Efficiency

The service area demands shown in Table C-1 represent the total water demands for the Los Angeles County District's service area. The demand data shown in Table C-1 were collected from the following sources:

- Baseline (2010): Los Angeles County District's 2005 UWMP, Table 15
- 2015: Los Angeles County District's 2010 UWMP, Table 3-12
- 2020: Los Angeles County District's 2015 UWMP, Table 4-12
- 2025-2045: Los Angeles County District's 2020 UWMP, Table 4-5

Non-Potable Water Demands

Los Angeles County District only provides potable water to it's customers.

Potable Service Area Demands with Water Use Efficiency

The "Potable Service Area Demands with Water Use Efficiency" was calculated by subtracting the "Non-Potable Water Demands" from "Service Area Demands with Water Use Efficiency."

Service Area Population

The population data shown in Table C-1 were collected from the following sources:

- Baseline (2010): Los Angeles County District's 2010 UWMP, Table 2-3
- 2015: Los Angeles County District's 2015 UWMP, Table 3-3
- 2020-2045: Los Angeles County District's 2020 UWMP, Table 3-2

Estimated Water Use Efficiency Since Baseline

The "Estimated Water Use Efficiency Since Baseline" was calculated using "Potable Service Area Demands with Water Use Efficiency" divided by "Service Area Population" and then comparing with 2010 Per Capita Water Use.

Service Area Water Demands without Water Use Efficiency

In Table C-2, the "Service Area Demands with Water Use Efficiency" was added to the "Estimated Water Use Efficiency Since Baseline" to obtain the "Service Area Water Demands without Water Use Efficiency Accounted For".

Supplies Contributing to Regional Self-Reliance

For a covered action to demonstrate consistency with the Delta Plan, WR P1 subsection (c)(1)(C) states that water suppliers must report the expected outcomes for measurable improvement in regional self-reliance. Table C-3 shows expected outcomes for supplies contributing to regional self-reliance both in the amount and as a percentage. The numbers shown in Table C-3 represent efforts to improve regional self-reliance for the Los Angeles County District's service area and include the total contributions of Los Angeles County District and its customers. Supporting narratives and documentation for all the data shown in Table C-3 are provided below.

Water Use Efficiency

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

3. Reliance on Water Supplies from the Delta Watershed

Metropolitan Water District of Southern California's (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

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wholesale water service to its 26 member agencies, which includes the wholesale water agencies that provide service to the Los Angeles County District. The Los Angeles County District purchases imported water from Metropolitan through the City of San Marino; Upper District via the Main San Gabriel Basin Watermaster, and West Basin Municipal Water District (WBMWD). The City of San Marino, Upper District and WBMWD are member agencies to Metropolitan. 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, except for 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. 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' and their subsequent customers' 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, Los Angeles County District and other 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 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.

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.

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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.

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.

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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**

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

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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.

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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.

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.

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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

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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.

4. Programs Implemented by Metropolitan to Reduce Delta Reliance

As mentioned above, Metropolitan, it's member agencies, Los Angeles County District, and other local agencies invest in local sources to reduce reliance on the Delta. However, Los Angeles County District purchases imported water from several wholesale entities: Metropolitan via the City of San Marino, Upper District, and WBMWD. Because of the intricacies in these large systems and the blend of supplies, the various programs Metropolitan has invested in to decrease reliance on the Delta is summarized above and detailed in Metropolitan's UWMP.

Since it is not feasible to separate out individual member agency's or their customer's reduced reliance on the Delta, Metropolitan has completed the analysis to demonstrate a regional wide reduction which is shown in Table C-4.

5. Summary of Expected Outcomes for Reduced Reliance on the Delta

As stated in WR P1(c)(1)(C), the policy requires that UWMPs include expected outcomes for measurable reduction in Delta reliance and improved regional self- reliance, commencing in 2015. 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.

The expected outcomes for Los Angeles County District's Delta reliance and regional self-reliance were developed using the approach and guidance described in Guidebook Appendix C issued in March 2021.

Regional Self-Reliance

The data used to demonstrate increased regional self-reliance in this analysis represent the total regional efforts of Los Angeles County District and its customers and was developed in conjunction with Calleguas and Metropolitan as part of the UWMP coordination process.

The Los Angeles County District relies on groundwater, an integrated right for the San Gabriel River, and wholesale purchases to meet demands. Demand that cannot be met by local sources is met using imported water. The Los Angeles County District strives to utilize local sources prior to imported water. To reduce imported water needs, the Los Angeles County District continues to promote conservation and efficient water use. The following provides a summary of the near-term (2025) and long-term (2045) expected outcomes for Los Angeles County District's regional self-reliance.

- Near-term (2025) – Normal water year regional self-reliance is expected to increase by about 2,000 AFY from the 2010 baseline; this represents an increase of about 8 percent of 2025 normal water year retail demands based on water use efficiency (Table C-3).
- Long-term (2045) – Normal water year regional self-reliance is expected to increase by nearly 2,000 AFY from the 2010 baseline, this represents an increase of about 8 percent of 2045 normal water year retail demands and is based on water use efficiency (Table C-3).

The results show that through sustained water conservation efforts, the Los Angeles County District is reducing reliance on the Delta and improving regional self-reliance.

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Reduced Reliance on Supplies from the Delta Watershed

For reduced reliance on supplies from the Delta Watershed, the data used in this analysis represent the total regional efforts of Metropolitan and its member agencies and customers (including Los Angeles County District) and were developed in conjunction with Los Angeles County District and other Metropolitan member agencies as part of the UWMP coordination process (as described in Section 5 of Metropolitan's 2020 UWMP). In accordance with UWMP requirements, Metropolitan's member agencies and their customers (many of them retail agencies) also report demands and supplies for their service areas in their respective UWMPs. The data reported by those agencies are not additive to the regional totals shown in Metropolitan's UWMP, rather their reporting represents subtotals of the regional total and should be considered as such for the purposes of determining reduced reliance on the Delta.

While the demands that Metropolitan's member agencies and their customers report in their UWMP's are a good reflection of the demands in their respective service areas, they do not adequately represent each water suppliers' individual contributions to reduced reliance on the Delta. To calculate and report their reliance on water supplies from the Delta watershed, water suppliers that receive water from the Delta through other regional or wholesale water suppliers would need to determine the amount of Delta water that they receive from the regional or wholesale supplier. Two specific pieces of information are needed to accomplish this, first is the quantity of demands on the regional or wholesale water supplier that accurately reflect a supplier's contributions to reduced reliance on the Delta and second is the quantity of a supplier's demands on the regional or wholesale water supplier that are met by supplies from the Delta watershed.

For water suppliers that make investments in regional projects or programs it may be infeasible to quantify their demands on the regional or wholesale water supplier in a way that accurately reflects their individual contributions to reduced reliance on the Delta. Due to the extensive, long-standing, and successful implementation of regional demand management and local resource incentive programs in Metropolitan's service area, this infeasibility holds true for Metropolitan's members as well as their customers. For Metropolitan's service area, reduced reliance on supplies from the Delta watershed can only be accurately accounted for at the regional level.

The results show that as a region, Metropolitan and its members (including Los Angeles County District) as well as their customers are measurably reducing reliance on the Delta and improving regional self-reliance.

6. 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:

> *(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[.]*

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.

Chapter 6 of Los Angeles County District's 2020 UWMP summarizes the implementation plan and continued progress in developing a diversified water portfolio to meet the region's water needs.

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7. Public Notification and Adoption

Los Angeles County District provided notice of the availability of the draft 2020 UWMP and 2020 WSCP and held a public hearing to consider adoption of the documents in accordance with CWC Sections 10621(b) and 10642, and Government Code Section 6066, and Chapter 17.5 (starting with Section 7290) of Division 7 of Title 1 of the Government Code. The public review drafts of the 2020 UWMP and the 2020 WSCP were posted in the customer notifications section of California American Water's website (www.californiaamwater.com) in advance of the public hearing on June 16, 2021. The notice of availability of the documents was sent to the County of Los Angeles and other local agencies within the area. Copies of the notification letters are included in the 2020 UWMP Appendix B. Appendix F to Los Angeles County District's 2020 UWMP, which was adopted with Los Angeles County District's 2020 UWMP, will also be recognized and treated as Appendix P to Los Angeles County District's 2015 UWMP.

The Los Angeles County District held a public hearing for the draft 2020 UWMP and draft 2020 WSCP on June 16, 2021. The public hearing was held online due to COVID-19 concerns. California American Water determined that the 2020 UWMP and the 2020 WSCP accurately represent the water resources plan for Los Angeles County District's service area. In addition, California American Water determined that Appendix P of the 2020 UWMP includes all the elements described in Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (Cal. Code Regs. tit. 23, § 5003), which need to be included in a water supplier's UWMP to support a certification of consistency for a future covered action. California American Water adopted the 2020 UWMP and the 2020 WSCP on dates to be determined and authorized their submittal to the State of California. A copy of the 2020 UWMP and 2020 WSCP adoption is included in the 2020 UWMP Appendix C.

8. 2015 UWMP Appendix P

The information contained in this appendix is also intended to be a new Appendix P to Los Angeles County District's 2015 UWMP consistent with WR P1 subsection (c)(1)(C) (Cal. Code Regs. tit. 23, § 5003). Notification and adoption of Appendix P to the 2015 UWMP will take place separately form the 2020 UWMP and 2020 WSCP.

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Table C-1: Optional 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	23,400	23,776	21,943	21,595	21,894	22,193	22,405	22,618
Non-Potable Water Demands								
Potable Service Area Demands with Water Use Efficiency Accounted For	23,400	23,776	21,943	21,595	21,894	22,193	22,405	22,618

Total Service Area Population	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Population	102,889	101,777	101,670	103,096	104,523	105,948	106,963	107,978

Water Use Efficiency Since Baseline (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Per Capita Water Use (GPCD)	203	209	193	187	187	187	187	187
Change in Per Capita Water Use from Baseline (GPCD)		6	(10)	(16)	(16)	(16)	(16)	(16)
Estimated Water Use Efficiency Since Baseline		(629)	1,180	1,852	1,878	1,903	1,922	1,939

Table C-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	23,400	23,776	21,943	21,595	21,894	22,193	22,405	22,618
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline		(629)	1,180	1,852	1,878	1,903	1,922	1,939
Service Area Water Demands without Water Use Efficiency Accounted For	23,400	23,147	23,123	23,447	23,772	24,096	24,327	24,557

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Table C-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		-	1,180	1,852	1,878	1,903	1,922	1,939
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	-	-	1,180	1,852	1,878	1,903	1,922	1,939

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	23,400	23,147	23,123	23,447	23,772	24,096	24,327	24,557

Change in Regional Self Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Supplies Contributing to Regional Self-Reliance	-	-	1,180	1,852	1,878	1,903	1,922	1,939
Change in Water Supplies Contributing to Regional Self-Reliance		-	1,180	1,852	1,878	1,903	1,922	1,939

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%	0.0%	5.1%	7.9%	7.9%	7.9%	7.9%	7.9%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance		0.0%	5.1%	7.9%	7.9%	7.9%	7.9%	7.9%

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Table C-4: Calculation of Reliance on Water Supplies from the Delta Watershed

Water Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
CVP/SWP Contract Supplies	1,472,000	1,029,000	984,000	1,133,000	1,130,000	1,128,000	1,126,000	1,126,000
Delta/Delta Tributary Diversions								
Transfers and Exchanges	20,000	44,000	91,000	58,000	52,000	52,000	52,000	52,000
Other Water Supplies from the Delta Watershed								
Total Water Supplies from the Delta Watershed	1,492,000	1,073,000	1,075,000	1,191,000	1,182,000	1,180,000	1,178,000	1,178,000

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	5,493,000	5,499,000	5,219,000	4,925,000	5,032,000	5,156,000	5,261,000	5,374,000

Change in Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Supplies from the Delta Watershed	1,492,000	1,073,000	1,075,000	1,191,000	1,182,000	1,180,000	1,178,000	1,178,000
Change in Water Supplies from the Delta Watershed		(419,000)	(417,000)	(301,000)	(310,000)	(312,000)	(314,000)	(314,000)

Percent Change in Supplies from the Delta Watershed (As a Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Percent of Water Supplies from the Delta Watershed	27.2%	19.5%	20.6%	24.2%	23.5%	22.9%	22.4%	21.9%
Change in Percent of Water Supplies from the Delta Watershed		-7.6%	-6.6%	-3.0%	-3.7%	-4.3%	-4.8%	-5.2%

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Appendix G. Rule 14.1

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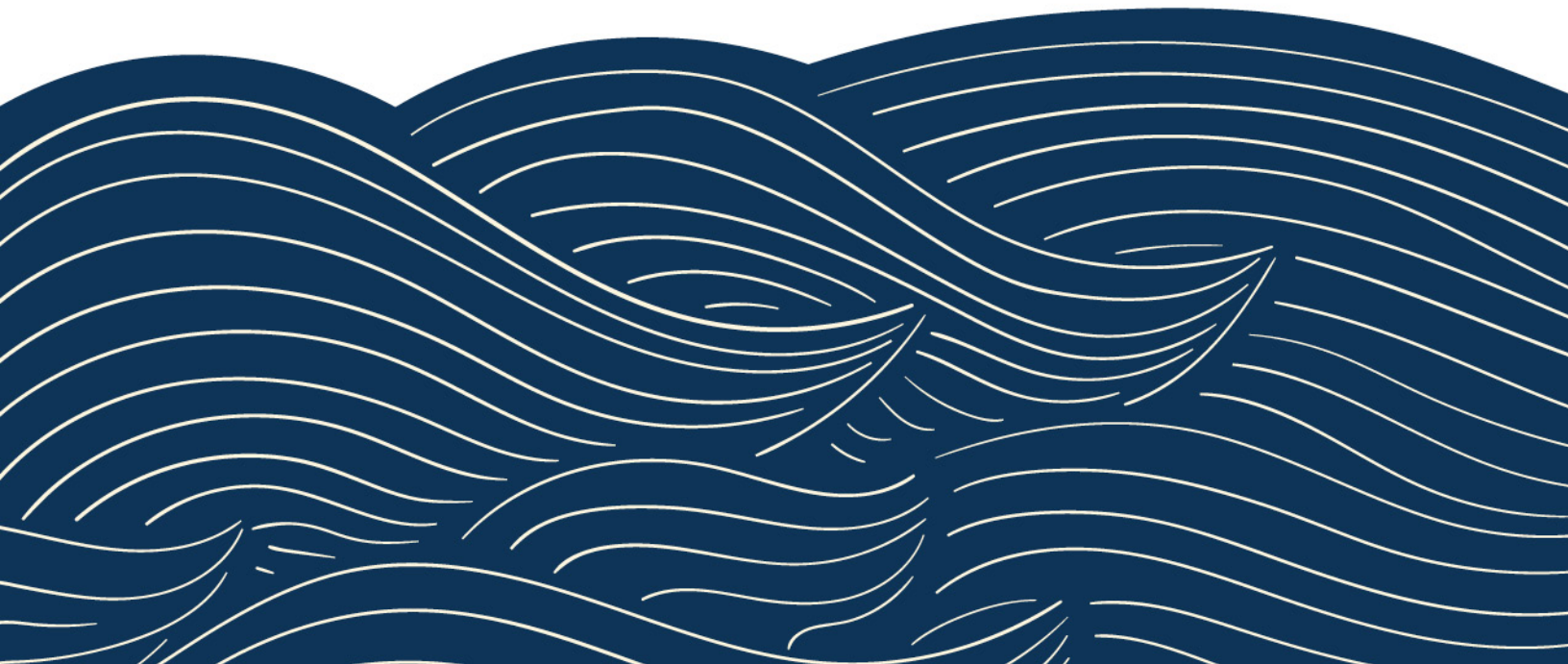

Schedule No. 14.1. – BH (Continued)
WATER SHORTAGE CONTINGENCY PLAN
BALDWIN HILLS DISTRICT

A. APPLICABILITY

1. This schedule applies to all water customers served under all tariff schedules authorized by the Commission for Baldwin Hills District. It is only effective in times of implementation of the Water Shortage Contingency Plan enforcement stages, as required by Rule No. 14.1, and only for the period noted in the Special Conditions section below.

2. This Schedule shall remain dormant until activated by Commission authorization via a Tier 2 advice letter.

3. Once the Schedule is activated, utility can implement Stages of the Schedule by filing a Tier 2 advice letter

4. When this schedule is activated, it shall remain in effect until the utility files a Tier 1 advice letter to deactivate a specific stage of the Water Shortage Contingency Plan and such is authorized by the Commission.

B. TERRITORY

1. This Schedule applies to all customers in the Baldwin Hills district. All other customers served by California-American Water Company are excluded from this particular tariff, but are included in separate and distinct Water Shortage Contingency Plans.

C. STAGES

1. Stage 1 of the Water Shortage Contingency Plan enacts water conservation requirements established in Rule 14.1 Section D. The non-essential or unauthorized water uses in Section D are in effect at all times.

2. Stage 2 First Enforcement Stage of the Water Shortage Contingency Plan - A Stage 2 Water Shortage Contingency Plan condition exists when it is determined that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a further consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Stage 2 of the Water Shortage Contingency Plan will be enacted upon a determination that water usage should be further reduced from current levels, that a temporary water emergency exists necessitating implementation or that the requirements of Stage 1 are ineffective in complying with the necessary reduction.

3. Stage 3 Second Enforcement Stage of the Water Shortage Contingency Plan - A Stage 3 Water Shortage Contingency Plan Condition exists when it is determined that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a further consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Stage 3 will be enacted upon a determination that water usage should be reduced further from current levels, that a temporary water emergency exists necessitating implementation or that the requirements in Stages 1 and 2 are ineffective in complying with the necessary reduction.

(Continued)

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Schedule No. 14.1. – BH (Continued)
WATER SHORTAGE CONTINGENCY PLAN
Baldwin Hills DISTRICT

C. STAGES

4. Stage 4 Third Enforcement Stage of the Water Shortage Contingency Plan - A Stage 4 Water Shortage Contingency Plan condition is also referred to as an "Emergency" condition. A Stage 4 condition exists when it is determined that a critical water shortage emergency exists, or that the measures in Stages 1 through 3 are ineffective in complying with a necessary reduction.

5. Stage 5 Mandatory Rationing. A rationing plan will be implemented when it is determined that the efforts in Stage 4 are insufficient to meet the regulatory or physical limitations of the available water supply.

D. WATER USE VIOLATION FINE

1. When an Enforcement Stage of the Water Shortage Contingency Plan has been activated by Commission authorization, the water use restrictions of Stage 1 in the Water Shortage Contingency Plan in Section D of Rule 14.1 become subject to fines and penalties imposed by the utility. The utility will first work closely with local law enforcement and public agencies charged with enforcing the mandatory water use restrictions. However, should the utility find that the local agency is not effectively enforcing the mandatory use restrictions, the utility, after written warnings, such as door hangers and letters, may begin to issue fines. If a customer is seen violating the water use restrictions, as outlined in Rule No. 14.1 and the Special Conditions below, the customer will be subject to the following fine structure:

    a. First offense: Written warning, including explanation of penalty for subsequent offense.

    b. Second offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and $100 fine.

    c. Third offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and a $250 fine.

    d. Fourth offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and a $500 fine.

    e. Fifth offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and service termination pursuant to Rule 11 and a $500 fine.

    f. Sixth offense within 1 year. (of the same restriction): Installation of a flow restricting device on customer's water meter for duration of enforcement stage of the Water Contingency Plan.

2. Offenses for separate water use restrictions will each start at the warning stage.

3. The water use violation fine is in addition to the regular rate schedule charges and any applicable drought surcharge rates.

(Continued)

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Schedule No. 14.1. – BH (Continued)
WATER SHORTAGE CONTINGENCY PLAN
BALDWIN HILLS DISTRICT

E. APPLICABLE DROUGHT SURCHARGE RATES

1. When in Stage 3 of the Water Shortage Contingency Plan - a surcharge rate be will be added to all residential water usage in excess of 11 CCF. The surcharge rate will be equal to the Tier 3 residential rate for the Baldwin Hills, San Marino, and Duarte District in effect at the time Stage 3 is enacted. The surcharge rate for low income customers will be 50% of the Stage 3 surcharge rate. For all other customers there will be no surcharge imposed at Stage 3.

2. When in Stage 4 of the Water Shortage Contingency Plan – The Stage 3 residential drought surcharge rates will be tripled for all usage in excess of 11 CCF in Stage 4. The surcharge rate for low income customers will be 50% of the residential Stage 4 surcharge rate. All other customers will pay a drought surcharge rate of 25% of the regular rate on all usage in Stage 4.

3. Rule 14.1 includes provisions to allow customers to seek a variance to the drought surcharge rates. Those residential customers who prevail in their request for a variance will receive a 50% increase in the amount of usage not subject to the surcharge rate. The usage not subject to the surcharge rate would be increased from 11 CCF to 17 CCF.

F. ENFORCEMENT

1. Letter/Fine: From second violation of the same restriction within a one year period and onwards, a violation letter will be posted on property and sent to billing address, if different.

2. Aging of violation: Violations will accrue for the period of one year and be considered corrected and expunged one year after the violation occurs. The purpose of this rule is to prevent discrete violations from accruing in the event of a multi-year enforcement of the Water Contingency Plan.

(Continued)

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Schedule No. 14.1. – BH (Continued)
WATER SHORTAGE CONTINGENCY PLAN
BALDWIN HILLS DISTRICT

3. Applies to all Enforcement Stages of Water Shortage Contingency Plan.

	Violation 1	Violation 2 (of the same restriction)	Violation 3 (of the same restriction)	Violation 4 (of the same restriction)	Violation 5/6 [2] (of the same restriction)
Proof of violation	Employee or Customer reports, with no additional verification required	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW
Letter/fine	Warning letter mailed to premise and billing address	Violation letter posted and mailed with $100 penalty on next bill	Violation letter posted and mailed with $250 penalty on next bill	Violation letter posted and mailed with $500 penalty on next bill	Violation letter posted and mailed, shut off per Rule 11 and $500 penalty on next bill
Fixing leaks **Stage 1** **Stage 2** **Stage 3** **Stage 4**	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate
Time to correct violation	5 days	5 days	5 days	5 days	5 days
Time customer has to request variance of the alleged violation	14 days to contact CAW in writing	14 days to contact CAW in writing	10 days to file an appeal with CAW in writing	10 days to file an appeal with CAW in writing	10 days to file an appeal with CAW in writing
If the customer does not agree with CAW's resolution [1] **Reference Section K of Rule 14.1**	Further reported violations of the same restricted use will not be counted in the determination of further action until one week after the variance request is resolved	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC

[1] If a customer has appealed the receipt of the penalty, the penalty will continue to be posted on the customer's account, but will not result in further service action, until at least 14 days after the resolution of appeals. Once resolved, if in the customers favor, the penalty will be immediately removed from the account. If not resolved in the customers favor, then the penalty will be due and payable as part of the next billing cycle and subject to all such further actions as with any other billed charge.

[2] For violation 6 instead of shut-off per Rule 11 and $500 penalty, a flow restrictor will be installed for duration of enforcement.

(Continued)

Public Draft

Schedule No. 14.1. – BH (Continued)
WATER SHORTAGE CONTINGENCY PLAN
BALDWIN HILLS DISTRICT

G. FLOW RESTRICTOR REMOVAL CHARGE
The charge for removal of a flow-restricting device and/or reconnecting water service shall be:

Connection Size	Removal Charges
5/8" to 1"	$150.00
1-1/2" to 2"	$200
3" and larger	Actual Cost

H. SPECIAL CONDITIONS

1. The Tier 2 advice letter requesting activation of any Enforcement Stage of Schedule 14.1 shall include documentation of the overall water shortage justifying activation of that particular stage.

2. This tariff schedule shall remain in effect until the utility files a Tier 1 advice letter to deactivate specific stage of Water Shortage Contingency Plan and such is authorized by the Commission.

3. Water use violation fines must be separately identified on each bill.

4. Water penalty surcharges must be separately identified on each bill.

5. All bills are subject to the reimbursement fee set forth on Schedule No. UF.

6. All monies collected by the utility through drought surcharges or penalties or fees for water use violations shall be booked to the Water Revenue Adjustment Mechanism (WRAM) or a memorandum account to offs recovery of lost revenues. All flow restrictor removal charges collected by the utility and all expenses incurred by the utility to implement Rule 14.1 and Schedule 14.1, and the requirements of the California State Water Board Resources Control Board ("SWRCB"), or other agencies, that have not been considere in a General Rate Case or other proceeding, shall be tracked in a memorandum account for disposition as directed or authorized from time to time by the Commission and shall be recoverable by the utility if determined to be reasonable by the Commission.

(Continued)

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Schedule No. 14.1. – DU (Continued)
WATER SHORTAGE CONTINGENCY PLAN
DUARTE DISTRICT

A. APPLICABILITY

1. This schedule applies to all water customers served under all tariff schedules authorized by the Commission for Duarte District. It is only effective in times of implementation of the Water Shortage Contingency Plan enforcement stages, as required by Rule No. 14.1, and only for the period noted in the Special Conditions section below.

2. This Schedule shall remain dormant until activated by Commission authorization via a Tier 2 advice letter.

3. Once the Schedule is activated, utility can implement Stages of the Schedule by filing a Tier 2 advice letter

4. When this schedule is activated, it shall remain in effect until the utility files a Tier 1 advice letter to deactivate a specific stage of the Water Shortage Contingency Plan and such is authorized by the Commission.

B. TERRITORY

1. This Schedule applies to all customers in the Duarte district. All other customers served by California-American Water Company are excluded from this particular tariff, but are included in separate and distinct Water Shortage Contingency Plans.

C. STAGES

1. Stage 1 of the Water Shortage Contingency Plan enacts water conservation requirements established in Rule 14.1 Section D. The non-essential or unauthorized water uses in Section D are in effect at all times.

2. Stage 2 First Enforcement Stage of the Water Shortage Contingency Plan - A Stage 2 Water Shortage Contingency Plan condition exists when it is determined that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a further consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Stage 2 of the Water Shortage Contingency Plan will be enacted upon a determination that water usage should be further reduced from current levels, that a temporary water emergency exists necessitating implementation or that the requirements of Stage 1 are ineffective in complying with the necessary reduction.

3. Stage 3 Second Enforcement Stage of the Water Shortage Contingency Plan - A Stage 3 Water Shortage Contingency Plan Condition exists when it is determined that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a further consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Stage 3 will be enacted upon a determination that water usage should be reduced further from current levels, that a temporary water emergency exists necessitating implementation or that the requirements in Stages 1 and 2 are ineffective in complying with the necessary reduction.

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Public Draft

Schedule No. 14.1. – DU (Continued)
WATER SHORTAGE CONTINGENCY PLAN
DUARTE DISTRICT

C. STAGES

4. Stage 4 Third Enforcement Stage of the Water Shortage Contingency Plan - A Stage 4 Water Shortage Contingency Plan condition is also referred to as an "Emergency" condition. A Stage 4 condition exists when it is determined that a critical water shortage emergency exists, or that the measures in Stages 1 through 3 are ineffective in complying with a necessary reduction.

5. Stage 5 Mandatory Rationing. A rationing plan will be implemented when it is determined that the efforts in Stage 4 are insufficient to meet the regulatory or physical limitations of the available water supply.

D. WATER USE VIOLATION FINE

1. When an Enforcement Stage of the Water Shortage Contingency Plan has been activated by Commission authorization, the water use restrictions of Stage 1 in the Water Shortage Contingency Plan in Section D of Rule 14.1 become subject to fines and penalties imposed by the utility. The utility will first work closely with local law enforcement and public agencies charged with enforcing the mandatory water use restrictions. However, should the utility find that the local agency is not effectively enforcing the mandatory use restrictions, the utility, after written warnings, such as door hangers and letters, may begin to issue fines. If a customer is seen violating the water use restrictions, as outlined in Rule No. 14.1 and the Special Conditions below, the customer will be subject to the following fine structure:

    a. First offense: Written warning, including explanation of penalty for subsequent offense.

    b. Second offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and $100 fine.

    c. Third offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and a $250 fine.

    d. Fourth offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and a $500 fine.

    e. Fifth offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and service termination pursuant to Rule 11 and a $500 fine.

    f. Sixth offense within 1 year. (of the same restriction): Installation of a flow restricting device on customer's water meter for duration of enforcement stage of the Water Contingency Plan.

2. Offenses for separate water use restrictions will each start at the warning stage.

3. The water use violation fine is in addition to the regular rate schedule charges and any applicable drought surcharge rates.

(Continued)

Public Draft

Schedule No. 14.1. – DU (Continued)
WATER SHORTAGE CONTINGENCY PLAN
DUARTE DISTRICT

E. APPLICABLE PENALTY RATES

1. When in Stage 3 of the Water Shortage Contingency Plan - a surcharge rate be will be added to all residential water usage in excess of 11 CCF. The surcharge rate will be equal to the Tier 3 residential rate for the Baldwin Hills, San Marino, and Duarte districts in effect at the time Stage 3 is enacted. The surcharge rate for low income customers will be 50% of the Stage 3 surcharge rate. For all other customers there will be no surcharge imposed at Stage 3.

2. When in Stage 4 of the Water Shortage Contingency Plan – The Stage 3 residential drought surcharge rates will be tripled for all usage in excess of 11 CCF in Stage 4. The surcharge rate for low income customers will be 50% of the residential Stage 4 surcharge rate. All other customers will pay a drought surcharge rate of 25% of the regular rate on all usage in Stage 4.

3. Rule 14.1 includes provisions to allow customers to seek a variance to the drought surcharge rates. Those residential customers who prevail in their request for a variance will receive a 50% increase in the amount of usage not subject to the surcharge rate. The usage not subject to the surcharge rate would be increased from 11 CCF to 17 CCF.

F. ENFORCEMENT

1. Letter/Fine: From second violation of the same restriction within a one year period and onwards, a violation letter will be posted on property and sent to billing address, if different.

2. Aging of violation: Violations will accrue for the period of one year and be considered corrected and expunged one year after the violation occurs. The purpose of this rule is to prevent discrete violations from accruing in the event of a multi-year enforcement of the Water Contingency Plan.

(Continued)

Public Draft

Schedule No. 14.1. – DU (Continued)
WATER SHORTAGE CONTINGENCY PLAN
DUARTE DISTRICT

3. Applies to all Enforcement Stages of Water Shortage Contingency Plan.

	Violation 1	Violation 2 (of the same restriction)	Violation 3 (of the same restriction)	Violation 4 (of the same restriction)	Violation 5/6 [2] (of the same restriction)
Proof of violation	Employee or Customer reports, with no additional verification required	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW
Letter/fine	Warning letter mailed to premise and billing address	Violation letter posted and mailed with $100 penalty on next bill	Violation letter posted and mailed with $250 penalty on next bill	Violation letter posted and mailed with $500 penalty on next bill	Violation letter posted and mailed, shut off per Rule 11 and $500 penalty on next bill
Fixing leaks **Stage 1** **Stage 2** **Stage 3** **Stage 4**	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate
Time to correct violation	5 days	5 days	5 days	5 days	5 days
Time customer has to request variance of the alleged violation	14 days to contact CAW in writing	14 days to contact CAW in writing	10 days to file an appeal with CAW in writing	10 days to file an appeal with CAW in writing	10 days to file an appeal with CAW in writing
If the customer does not agree with CAW's resolution [1] **Reference Section K of Rule 14.1**	Further reported violations of the same restricted use will not be counted in the determination of further action until one week after the variance request is resolved	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC

[1] If a customer has appealed the receipt of the penalty, the penalty will continue to be posted on the customer's account, but will not result in further service action, until at least 14 days after the resolution of appeals. Once resolved, if in the customers favor, the penalty will be immediately removed from the account. If not resolved in the customers favor, then the penalty will be due and payable as part of the next billing cycle and subject to all such further actions as with any other billed charge.

[2] For violation 6 instead of shut-off per Rule 11 and $500 penalty, a flow restrictor will be installed for duration of enforcement.

(Continued)

Public Draft

Schedule No. 14.1. – DU (Continued)
WATER SHORTAGE CONTINGENCY PLAN
DUARTE DISTRICT

G. FLOW RESTRICTOR REMOVAL CHARGE
The charge for removal of a flow-restricting device and/or reconnecting water service shall be:

Connection Size	Removal Charges
5/8" to 1"	$150.00
1-1/2" to 2"	$200
3" and larger	Actual Cost

H. SPECIAL CONDITIONS

1. The Tier 2 advice letter requesting activation of any Enforcement Stage of Schedule 14.1 shall include documentation of the overall water shortage justifying activation of that particular stage.

2. This tariff schedule shall remain in effect until the utility files a Tier 1 advice letter to deactivate specific stage of Water Shortage Contingency Plan and such is authorized by the Commission.

3. Water use violation fines must be separately identified on each bill.

4. Water penalty surcharges must be separately identified on each bill.

5. All bills are subject to the reimbursement fee set forth on Schedule No. UF.

6. All monies collected by the utility through drought surcharges or penalties or fees for water use violations shall be booked to the Water Revenue Adjustment Mechanism (WRAM) or a memorandum account to offs recovery of lost revenues. All flow restrictor removal charges collected by the utility and all expenses incurred by the utility to implement Rule 14.1 and Schedule 14.1, and the requirements of the California State Water Board Resources Control Board ("SWRCB"), or other agencies, that have not been considere in a General Rate Case or other proceeding, shall be tracked in a memorandum account for disposition as directed or authorized from time to time by the Commission and shall be recoverable by the utility if determined to be reasonable by the Commission.

(Continued)

Public Draft

Schedule No. 14.1. – SM (Continued)
WATER SHORTAGE CONTINGENCY PLAN
SAN MARINO DISTRICT

A. APPLICABILITY

1. This schedule applies to all water customers served under all tariff schedules authorized by the Commission for San Marino District. It is only effective in times of implementation of the Water Shortage Contingency Plan enforcement stages, as required by Rule No. 14.1, and only for the period noted in the Special Conditions section below.

2. This Schedule shall remain dormant until activated by Commission authorization via a Tier 2 advice letter.

3. Once the Schedule is activated, utility can implement Stages of the Schedule by filing a Tier 2 advice letter

4. When this schedule is activated, it shall remain in effect until the utility files a Tier 1 advice letter to deactivate a specific stage of the Water Shortage Contingency Plan and such is authorized by the Commission.

B. TERRITORY

1. This Schedule applies to all customers in the San Marino district. All other customers served by California-American Water Company are excluded from this particular tariff, but are included in separate and distinct Water Shortage Contingency Plans.

C. STAGES

1. Stage 1 of the Water Shortage Contingency Plan enacts water conservation requirements established in Rule 14.1 Section D. The non-essential or unauthorized water uses in Section D are in effect at all times.

2. Stage 2 First Enforcement Stage of the Water Shortage Contingency Plan - A Stage 2 Water Shortage Contingency Plan condition exists when it is determined that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a further consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Stage 2 of the Water Shortage Contingency Plan will be enacted upon a determination that water usage should be further reduced from current levels, that a temporary water emergency exists necessitating implementation or that the requirements of Stage 1 are ineffective in complying with the necessary reduction.

3. Stage 3 Second Enforcement Stage of the Water Shortage Contingency Plan - A Stage 3 Water Shortage Contingency Plan Condition exists when it is determined that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a further consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Stage 3 will be enacted upon a determination that water usage should be reduced further from current levels, that a temporary water emergency exists necessitating implementation or that the requirements in Stages 1 and 2 are ineffective in complying with the necessary reduction.

(Continued)

Public Draft

Schedule No. 14.1. – SM (Continued)
WATER SHORTAGE CONTINGENCY PLAN
SAN MARINA DISTRICT

C. STAGES

4. Stage 4 Third Enforcement Stage of the Water Shortage Contingency Plan - A Stage 4 Water Shortage Contingency Plan condition is also referred to as an "Emergency" condition. A Stage 4 condition exists when it is determined that a critical water shortage emergency exists, or that the measures in Stages 1 through 3 are ineffective in complying with a necessary reduction.

5. Stage 5 Mandatory Rationing. A rationing plan will be implemented when it is determined that the efforts in Stage 4 are insufficient to meet the regulatory or physical limitations of the available water supply.

D. WATER USE VIOLATION FINE

1. When an Enforcement Stage of the Water Shortage Contingency Plan has been activated by Commission authorization, the water use restrictions of Stage 1 in the Water Shortage Contingency Plan in Section D of Rule 14.1 become subject to fines and penalties imposed by the utility. The utility will first work closely with local law enforcement and public agencies charged with enforcing the mandatory water use restrictions. However, should the utility find that the local agency is not effectively enforcing the mandatory use restrictions, the utility, after written warnings, such as door hangers and letters, may begin to issue fines. If a customer is seen violating the water use restrictions, as outlined in Rule No. 14.1 and the Special Conditions below, the customer will be subject to the following fine structure:

    a. First offense: Written warning, including explanation of penalty for subsequent offense.

    b. Second offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and $100 fine.

    c. Third offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and a $250 fine.

    d. Fourth offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and a $500 fine.

    e. Fifth offense within 1 year (of the same restriction): Written warning, including explanation of penalty for subsequent offense and service termination pursuant to Rule 11 and a $500 fine.

    f. Sixth offense within 1 year. (of the same restriction): Installation of a flow restricting device on customer's water meter for duration of enforcement stage of the Water Contingency Plan.

2. Offenses for separate water use restrictions will each start at the warning stage.

3. The water use violation fine is in addition to the regular rate schedule charges and any applicable drought surcharge rates.

(Continued)

Public Draft

Schedule No. 14.1. – SM (Continued)
WATER SHORTAGE CONTINGENCY PLAN
SAN MARINO DISTRICT

E. APPLICABLE DROUGHT SURCHARGE RATES

1. When in Stage 3 of the Water Shortage Contingency Plan - a surcharge rate be will be added to all residential water usage in excess of 13 CCF. The surcharge rate will be equal to the Tier 3 residential rate for Baldwin Hills, Duarte and San Marina Districts in effect at the time Stage 3 is enacted. The surcharge rate for low income customers will be 50% of the Stage 3 surcharge rate. For all other customers there will be no surcharge imposed at Stage 3.

2. When in Stage 4 of the Water Shortage Contingency Plan – The Stage 3 residential drought surcharge rates will be tripled for all usage in excess of 13 CCF in Stage 4. The surcharge rate for low income customers will be 50% of the residential Stage 4 surcharge rate. All other customers will pay a drought surcharge rate of 25% of the regular rate on all usage in Stage 4.

3. Rule 14.1 includes provisions to allow customers to seek a variance to the drought surcharge rates. Those residential customers who prevail in their request for a variance will receive a 50% increase in the amount of usage not subject to the surcharge rate. The usage not subject to the surcharge rate would be increased from 13 CCF to 19 CCF.

F. ENFORCEMENT

1. Letter/Fine: From second violation of the same restriction within a one year period and onwards, a violation letter will be posted on property and sent to billing address, if different.

2. Aging of violation: Violations will accrue for the period of one year and be considered corrected and expunged one year after the violation occurs. The purpose of this rule is to prevent discrete violations from accruing in the event of a multi-year enforcement of the Water Contingency Plan.

(Continued)

Public Draft

Schedule No. 14.1. – SM (Continued)
WATER SHORTAGE CONTINGENCY PLAN
SAN MARINO DISTRICT

3. Applies to all Enforcement Stages of Water Shortage Contingency Plan.

	Violation 1	Violation 2 (of the same restriction)	Violation 3 (of the same restriction)	Violation 4 (of the same restriction)	Violation 5/6 [2] (of the same restriction)
Proof of violation	Employee or Customer reports, with no additional verification required	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW
Letter/fine	Warning letter mailed to premise and billing address	Violation letter posted and mailed with $100 penalty on next bill	Violation letter posted and mailed with $250 penalty on next bill	Violation letter posted and mailed with $500 penalty on next bill	Violation letter posted and mailed, shut off per Rule 11 and $500 penalty on next bill
Fixing leaks **Stage 1** **Stage 2** **Stage 3** **Stage 4**	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate
Time to correct violation	5 days	5 days	5 days	5 days	5 days
Time customer has to request variance of the alleged violation	14 days to contact CAW in writing	14 days to contact CAW in writing	10 days to file an appeal with CAW in writing	10 days to file an appeal with CAW in writing	10 days to file an appeal with CAW in writing
If the customer does not agree with CAW's resolution [1] **Reference Section K of Rule 14.1**	Further reported violations of the same restricted use will not be counted in the determination of further action until one week after the variance request is resolved	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC

[1] If a customer has appealed the receipt of the penalty, the penalty will continue to be posted on the customer's account, but will not result in further service action, until at least 14 days after the resolution of appeals. Once resolved, if in the customers favor, the penalty will be immediately removed from the account. If not resolved in the customers favor, then the penalty will be due and payable as part of the next billing cycle and subject to all such further actions as with any other billed charge.

[2] For violation 6 instead of shut-off per Rule 11 and $500 penalty, a flow restrictor will be installed for duration of enforcement.

(Continued)

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Schedule No. 14.1. – SM (Continued)
WATER SHORTAGE CONTINGENCY PLAN
SAN MARINO DISTRICT

G. FLOW RESTRICTOR REMOVAL CHARGE
The charge for removal of a flow-restricting device and/or reconnecting water service shall be:

Connection Size	Removal Charges
5/8" to 1"	$150.00
1-1/2" to 2"	$200
3" and larger	Actual Cost

H. SPECIAL CONDITIONS

1. The Tier 2 advice letter requesting activation of any Enforcement Stage of Schedule 14.1 shall include documentation of the overall water shortage justifying activation of that particular stage.

2. This tariff schedule shall remain in effect until the utility files a Tier 1 advice letter to deactivate specific stage of Water Shortage Contingency Plan and such is authorized by the Commission.

3. Water use violation fines must be separately identified on each bill.

4. Water penalty surcharges must be separately identified on each bill.

5. All bills are subject to the reimbursement fee set forth on Schedule No. UF.

6. All monies collected by the utility through drought surcharges or penalties or fees for water use violations shall be booked to the Water Revenue Adjustment Mechanism (WRAM) or a memorandum account to offs recovery of lost revenues. All flow restrictor removal charges collected by the utility and all expenses incurred by the utility to implement Rule 14.1 and Schedule 14.1, and the requirements of the California State Water Board Resources Control Board ("SWRCB"), or other agencies, that have not been considere in a General Rate Case or other proceeding, shall be tracked in a memorandum account for disposition as directed or authorized from time to time by the Commission and shall be recoverable by the utility if determined to be reasonable by the Commission.

(Continued)

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Appendix H. Water Shortage Contingency Plan

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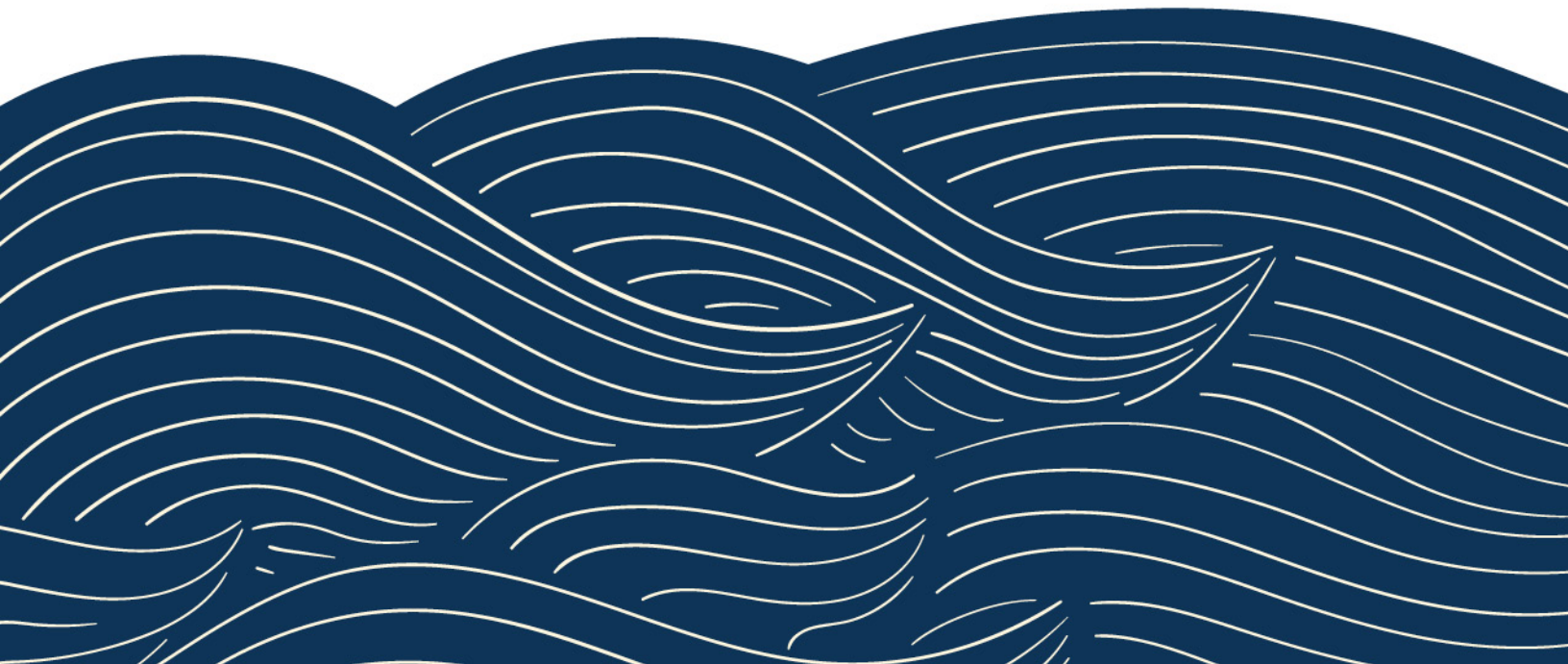

Water Shortage Contingency Plan

A water shortage occurs when the water supply is reduced to a level that cannot support typical demand at any given time. The WSCP is used to provide guidance to California American Water's (CAW's) Los Angeles District – local government, staff, and the public by identifying response actions to allow for efficient management of any water shortage with predictability and accountability. Preparation provides the tools to maintain reliable supplies and reduce the impacts of supply interruptions due to extended drought or catastrophic supply interruptions. This WSCP addresses such potential water shortage conditions resulting from future droughts as well as other causes such as impacts to distribution system infrastructure, regulatory imposed shortage restrictions, catastrophic events, etc. The WSCP describes the following:

1. **Water Supply Reliability Analysis:** Summarizes CAW's Los Angeles water supply analysis and reliability and identifies any key issues that may trigger a shortage condition.
2. **Annual Water Supply and Demand Assessment Procedures:** Describes the key data inputs, evaluation criteria, and methodology for assessing the system's reliability for the coming year and the steps to formally declare any water shortage levels and response actions.
3. **Six Standard Shortage Stages:** Establishes water shortage levels to clearly identify and prepare for shortages.
4. **Shortage Response Actions:** Describes the response actions that may be implemented or considered for each stage to reduce gaps between supply and demand as well as minimize social and economic impacts to the community.
5. **Compliance and Enforcement:** Defines compliance and enforcement actions available to administer demand reductions
6. **Legal Authority:** Lists the legal documents that grant CAW the authority to declare a water shortage and implement and enforce response actions.
7. **Financial Consequences of WSCP Implementation:** Describes the anticipated financial impact of implementing water shortage stages and identifies mitigation strategies to offset financial burdens.
8. **Monitoring and Reporting:** Summarizes the monitoring and reporting techniques to evaluate the effectiveness of shortage response actions and overall WSCP implementation. Results are used to determine if additional shortage response actions should be activated or if efforts are successful and response actions should be reduced.
9. **WSCP Refinement Procedures:** Describes the factors that may trigger updates to the WSCP and outlines how to complete an update.
10. **Special Water Features Distinctions:** Identifies exemptions for ponds, lakes, fountains, pools, and spas, etc.
11. **Plan Adoption, Submittal, and Availability:** Describes the process for the WSCP adoption, submittal, and availability after each revision.

This WSCP was prepared in conjunction with CAW's 2020 Los Angeles UWMP and is a standalone document that can be modified as needed. The current Water Shortage Contingency Plan is detailed in Rule 14.1 (Attachment 1) which CAW intends to revise and adopt the updated version that meets the requirements set forth by DWR. Each section within this chapter discusses the planned changes the Los Angeles district intends to include in the revised Rule 14.1 in order to create a complete Water Shortage Contingency Plan.

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This Plan (Rule 14.1) shall remain dormant until activated by Commission authorization via a Tier 2 advice letter. Once activated, CAW can implement Stages of the Plan by filing a Tier 2 advice letter to the Commission. This Plan will remain in effect until CAW files a Tier 1 advice letter to deactivate a specific stage of the Water Shortage Contingency Plan and such is authorized by the Commission.

This document is compliant with the California Water Code (CWC) Section 10632 and incorporated guidance from the State of California Department of Water Resources (DWR) UWMP Guidebook (Department of Water Resources, 2020) and the American Water Works Association (AWWA) Manual of Water Supply Practices (M60) Drought Preparedness and Response (American Water Works Association (AWWA), 2019). Water purveyor planning for possible water supply shortages has become an increasingly important subject considering the drought conditions over the last several years. The plan is intended to provide guidance, rather than absolute direction, for CAW action in response to water shortages and provide the CAW's Los Angeles district with options to responsibly manage water shortages.

1.1 Water Supply Reliability Analysis

Chapter 7 of the Los Angeles district UWMP discusses the potential of future water supply shortages in single-dry and multiple-dry years.

1.2 Annual Water Supply and Demand Assessment

As established by CWC Section 10632.1, urban water suppliers must conduct annual water supply and demand assessments and submit an annual water shortage assessment report to DWR. The Annual Assessment is an evaluation of the short-term outlook for supplies and demands to determine whether the potential for a supply shortage exists and whether there is a need to trigger a WSCP shortage level and response actions in the current fiscal year to maintain supply reliability. Beginning by July 1, 2022, CAW must prepare their annual water supply and demand assessment and submit an Annual Water Shortage Assessment Report to DWR. The preparation of this report will inform CAW's Los Angeles district, the public, and state and other local agencies about the water supply conditions and the likelihood of water shortages. The annual report should report the approved anticipated shortage level, triggered shortage response actions, compliance and enforcement actions, and communication actions that will be implemented to mitigate the shortage identified in the Annual Assessment. The Annual Water Shortage Assessment Report will be due by July 1 of every year. Per CWC, the annual assessment must include:

- The written decision-making process that CAW will use each year to determine its water supply reliability.
- The key data inputs and assessment methodology used to evaluate the supplier's water supply reliability for the current year and one dry year, including:
  - Current year unconstrained demand.
  - Current year available supply in the current year and one dry year.
  - Existing infrastructure capabilities and plausible constraints.
  - A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.
  - A description and quantification of each source of water supply.

CAW's Los Angeles district considers wholesale supply allocation reductions, reservoir levels, well pumping output, state or regulatory mandated reductions, infrastructure failures and other supply reductions or emergencies and determines the appropriate water supply percentage shortage.

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1.3 Six Standard Water Shortage Levels

Per the requirement of CWC § 10632(a)(3), this WSCP is based on six water shortage levels or stages shown in Table 1-1 (DWR 8-1) below. These shortage stages are intended to address shortage caused by any condition, including the catastrophic interruption of water supplies. California American Water's currently approved Water Shortage Contingency Plan per CPUC Resolution W-4976 and W-5034 is the Company's current Rule and Schedule 14.1 for its Los Angeles district attached as Attachment A, and in effect since September 2017. California American Water will update its current Rule and Schedule 14.1 to align with this proposed WSCP here once it receives CPUC approval to do so.

Table 1-1. Water Shortage Contingency Plan Levels (DWR Table 8-1)

Shortage Level	Percent Shortage Range	Shortage Response Actions
1	up to 10%	For Demand Reduction Actions (see Table 1-2 below)
2	up to 20%	For Demand Reduction Actions (see Table 1-2 below)
3	up to 30%	For Demand Reduction Actions (see Table 1-2 below)
4	up to 40%	For Demand Reduction Actions (see Table 1-2 below)
5	up to 50%	For Demand Reduction Actions (see Table 1-2 below)
6	>50%	For Demand Reduction Actions (see Table 1-2 below)

1.4 Shortage Response Actions

Water Code Section 10632 (a)(4) requires the WSCP to specify shortage response actions that align with the defined shortage levels. California American Water has defined specific shortage response actions that align with the defined shortage levels in Table 1-1 (DWR Table 8-1). These shortage response actions were developed with consideration to the system infrastructure and operations changes, supply augmentation responses, customer-class or water use-specific demand reduction initiatives, and increasingly stringent water use prohibitions.

1.4.1 Demand Reduction

The demand reduction measures that would be implemented to address shortage levels are described in Table 1-2 (DWR Table 8-2) below. This table indicates which actions align with specific defined shortage levels and estimates the extent to which that action will reduce the gap between supplies and demands to demonstrate that choose suite of shortage response actions can be expected to deliver the expected outcomes necessary to meet the requirements of a given shortage level. The table also identifies the enforcement action, if any, associated with each demand reduction measure. The listed demand reduction actions are a menu of options to be used in any combination when a revised Rule and Schedule 14.1 is proposed, approved by the CPUC and enacted. CAW will also work with neighboring agencies to coordinate demand reduction response actions as much as feasible.

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Table 1-2. Demand Reduction Actions (DWR 8-2)

DWR Table 8.2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions (drop down list)	How much is this going to reduce the shortage gap? (volume type or percentage)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
Stage 1 - Water Shortage up to 10%				
Restrictions				
1	Landscape - Limit landscape irrigation to specific days	0-5%	3 days per week max	YES
1	Landscape - Limit landscape irrigation to specific times	0-1%	no irrigation after 10am and before 5pm	YES
1	Landscape - Restrict or prohibit runoff from landscape irrigation	0-1%		YES
1	Landscape - Other landscape restriction or prohibition	0-1%	Prohibiting irrigation during rainfall and for 48 hours after measurable precipitation	YES
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0-1%	Leaks to be repaired within 5 days after customer is notified or discovers leak	YES
1	Other - Prohibit use of potable water for washing hard surfaces	0-1%	Including driveways, patios, parking lots, tennis courts, streets, or other hard surfaced areas	YES
1	CII - Lodging establishment must offer opt out of linen service	0-1%		YES
Other Demand Reduction Company Actions				
1	Expand Public Information Campaign	0-1%		NO

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1	Expand Rebates or Giveaways of Plumbing Fixtures and Devices	0-1%		NO
1	Promote online water waste reporting	0-1%		YES
1	Increase Water Waste Patrols	0-1%		YES
Stage 2 - Water Shortage up to 20%				
Restrictions				
All Restrictions of Stage 1 remain in place, addtl. restrictions below apply				
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0-1%	Violations to be corrected within 72 hours after customer is notified or discovers leak	YES
2	Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	0-1%		YES
2	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	0-1%	Vehicle-washing facilities must recycle and reuse at least 50% or 60% water depending on if constructed before or after January 1, 2014, respectively	YES
2	CII - Restaurants may only serve water upon request	0-1%	No restaurant, hotel, café, cafeteria, or other public place where food is sold is served or offered for sale, shall serve drinking water to any customer unless expressly requested	YES
2	Other - Require automatic shut of hoses	0-1%		YES
Other Demand Reduction Company Actions				

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2	Expand Public Information Campaign	0-1%	Community outreach that includes educational information and saving tips through multiple media channels	
2	Water Efficiency Awareness Workshops, Public Events	0-1%		
2	Expand Res Water Use Surveys	0-1%		
2	Expand CII Water Use Surveys	0-1%		
Stage 3 - Water Shortage up to 30%				
Restrictions				
All Restrictions of Stage 1 & 2 remain in place, addtl. restrictions below apply				
3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0-1%	Violations to be corrected within 24 hours after customer is notified or discovers leak	
3	Landscape - Limit landscape irrigation to specific days	0-5%	1-day per week max (drip excluded)	YES
3	Landscape - Prohibit irrigation of ornamental turf on public street medians with potable water	0-1%		YES
3	Implement Drought Rate Structure and Customer Water Budgets (Res)	3-5%	Implement Drought Surcharge	YES
3	Implement Drought Rate Structure and Customer Water Budgets (CII)	3-5%	Implement Drought Surcharge	YES
3	CII - Commercial kitchens required to use pre-rinse spray valves	0-1%		YES

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3	Other - Prohibit use of potable water for construction and dust control	0-1%	Prohibit use of potable water for construction, compaction, dust control, street or parking lot sweeping, building wash down where non-potable or recycled water is sufficient	YES
3	Other water feature or swimming pool restriction	0-1%	Prohibit draining or refilling of swimming pools and spas except to prevent or correct structural damage or to comply with public health regulations	YES
Other Demand Reduction Company Actions				
3	Decrease Frequency and Length of Line Flushing	0-1%		NO
3	Increase Water Waste Patrols/Enforcement	0-1%		NO
Stage 4 - Water Shortage up to 40%				
Restrictions				
All Restrictions of Stage 1, 2 & 3 remain in place, addtl. restrictions below apply				
4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0-1%	Violations to be corrected within 24 hours after customer is notified or discovers leak	YES
4	Landscape - Limit landscape irrigation to specific days	0-5%	1-days per week max (drip excluded)	YES
4	Prohibit vehicle washing except with recycled water	0-1%		YES
4	Prohibit use of water for recreational purposes (Prohibit filling of pools)	0-1%		YES
Other Demand Reduction Company Actions				

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4	Moratorium or Net Zero Demand Increase on New Connections	0-2%	Temporarily limit or ban new water service connections within the service area	YES
4	Implement Drought Rate Structure and Customer Water Budgets (Res)	>5%	Increase Drought Surcharge	YES
4	Implement Drought Rate Structure and Customer Water Budgets (CII)	>5%	Increase Drought Surcharge	YES
Stage 5 - Water Shortage up to 50%				
Restrictions				
All previous Stage Restrictions remain in place, addtl. restrictions below apply				
5	Prohibit single-pass cooling systems	0-1%		YES
5	Landscape - Prohibit all landscape irrigation (res and CII)	>10%		YES
Other Demand Reduction Company Actions				
5	Require Pool Covers	0-1%		YES
5	Landscape - Prohibit all landscape irrigation (res and CII)	0-5%	Increase Drought Surcharge	YES
Stage 6 - Water Shortage greater than 50%				
Restrictions				
All previous Stage Restrictions remain in place, addtl. restrictions below apply				
6	Implement residential and non residential rationing	>10%		YES
Notes: Reduction in the shortage gap is estimated and can vary significantly.				

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1.4.2 Supply Augmentation

California American Water has not identified any supply augmentation actions to help mitigate potential water shortages in its Los Angeles District.

1.4.3 Operational Changes

As highlighted in above Table 1-2 (DWR table 8-2), California American Water will make operational changes such as decreasing lengths and frequency of line flushing in Stages 3 and higher among other water savings measures. The district will evaluate additional operational measures to increase its system efficiency and minimize leaks by potentially expediting infrastructure repairs or altering maintenance cycles.

1.4.4 Emergency Response Plan

This section describes the response to emergency situations which interrupt water supply including earthquakes, regional power outages, system failures and other events specific to CAW's sources.

CAW has analyzed the nature and extent of likely catastrophes which could affect the ability to provide water supply for both consumptive and emergency use. Catastrophes are broadly classified as "naturally occurring" and "manmade". Natural catastrophes include such incidents as fire, flood, earthquake, and electrical supply failure. Manmade catastrophes include such incidents as chemical spill, vandalism, and sabotage, including terrorist attack, and mechanical failure. Manmade catastrophes can also have the same end result as those of natural disasters. As an example, a dam break regardless of the cause, could flood and damage or destroy facilities.

CAW has installed a broad range of systems, procedures, and facilities to reduce the potential of significant water supply interruptions regardless of cause. Some of these systems, procedures and facilities are summarized here:

- All production facilities are fenced and locked to prevent unauthorized entry.
- Emergency generators are located at critical facilities. The generators are equipped with automatic transfer switches which upon a power failure will automatically disconnect the facility from commercial power source, start the generator, and power up the facility. While some generators are stationary, most are trailer mounted thus allowing movement within the various service areas should that be required.
- System pressure, water production flow rate, and power status are monitored and reported at representative locations throughout the various water systems. Reports are sent to Monterey Main office where they are displayed, monitored, and recorded. Additionally, approximately twenty representative water supply and production sites are equipped with "mission controllers", a web-based monitoring system. The mission controllers alert both on-duty and on-call staff by cell phone when operational problems arise.
- CAW maintains on-call staff twenty-four hours a day for rapid response.
- CAW maintains a stockpile of service line repair parts and associated construction equipment for repair of small leaks and line breaks.
- CAW has blanket contracts local contractors to assist with larger emergency repairs caused by earthquake or other major events.
- CAW has completed an Emergency Operations Plan detailing procedures and contacts and outlining responses to several most probable catastrophic events and has filed it with the Department of Public Health.

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1.4.5 Seismic Risk Assessment and Mitigation Plan

A seismic risk assessment has been or is in the process of being completed as part of the America's Water Infrastructure Act of 2018 Risk and Resilience Assessment requirements. Additionally, the Los Angeles district maintains an emergency response plan that addresses seismic risk. It is currently being updated and will be completed in June 2021.

1.4.6 Shortage Response Action Effectiveness

In CAW's Los Angeles district, all accounts are metered. During a water shortage, a comparison of delivery records would be carried out to determine if water is being conserved. All purchased water sources are metered and have continuous recording equipment.

For each specific Shortage Level Response Action identified in the plan, the WSCP also estimates the extent to which that action will reduce the gap between supplies and demands identified in Table 1-2 (DWR 8-2) above. To the extent feasible, CAW's Los Angeles district has estimated percentage savings for the chosen suite of shortage response actions, which can be anticipated to deliver the expected outcomes necessary to meet the requirements of a given shortage level.

1.5 Communication Protocols

As discussed in Rule 14.1, Section G Water Conservation Plan triggers customers notifications through bill messaging or direct mail. Notifications must occur prior to rate changes or fines. Any change in stage level (up or down) shall be notified via press release and on the Company's website and in emails sent to customers when provided. Notification occurs prior to implementation of fines, drought surcharges, or rate changes. CAW will maintain communications and updates on supply conditions. Updates on supply status and results of the customers' conservation efforts will be included in customer bills as well. The following Communications Matrix summarizes the Company's Communication Tactic for each Shortage stage:

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Table 1-3. WSCP Communication Matrix

2021 Water Shortage Contingency Plan Communications Matrix							
	Stage 1	*Stage 2*	*Stage 3*	*Stage 4*	*Stage 5*	*Stage 6*	
Communication Tactic							**Notes**
Regulatory Notice			x	x	x	x	CPUC requires customer notice when mandatory conservation stages are activated or changed
Public Hearing			x	x	x	x	CPUC may require formal public hearings when mandatory conservation stages are activated or changed
Press Release		x	x	x	x	x	CAW conducts media outreach when conservation levels are activated or changed
Social Media	x	x	x	x	x	x	CAW regularly communicates information about water conservation and efficiency via social media channels. Message frequency and information will be appropriate for each stage
Website	x	x	x	x	x	x	CAW maintains a website with information to local conservation programs and services. Appropriate information about stages will be added to website as appropriate.
Television/Radio				x	x	x	CAW occasionally purchases advertising on broadcast and digital platforms as appropriate.
Water Waste Reporting on Website	x	x	x	x	x	x	CAW maintans a water waste reporting portal on its website and reports are followed on by local staff
Community Outreach	x	x	x	x	x	x	CAW regularly holds community meetings, attends community events and local government meetings. Conservation and efficiency information is shared as appropriate.
Direct mail, email and Bill Onserts	x	x	x	x	x	x	CAW regularly provides conservation and efficiency information through bill onserts and messages. CAW may also utilitize direct mail and email as needed.
Reverse 911 Messages				x	x	x	CAW may utilitize its emergency communications system to provide critical information via phone, text and email as appropriate in the event of a severe water shortage.
Customer Service	x	x	x	x	x	x	CAW Customer service center and local employees are provided relevant information for customers who call or visit our offices.

1.6 Compliance and Enforcement

When a shortage stage of the WSCP has been activated by Commission authorization, the water use restrictions of Stage 1 in Section D of Rule 14.1 become subject to fines and penalties imposed by CAW. CAW will first work closely with local law enforcement with enforcing the mandatory water use restrictions. CAW has penalties for violation of the water waste restrictions mentioned previously in Table 1-2 DWR Table 8-2)

The fines for CAW's Los Angeles district are listed in Table 1-4 below per Tarif Rule 14.1.

Table 1.4. Tarif Rule 14.1 – San Marino Service Area

Schedule No. 14.1. – SM (Continued)
WATER SHORTAGE CONTINGENCY PLAN
SAN MARINO DISTRICT
3. Applies to all Enforcement Stages of Water Shortage Contingency Plan.

	Violation 1	Violation 2 (of the same restriction)	Violation 3 (of the same restriction)	Violation 4 (of the same restriction)	Violation 5/6[2] (of the same restriction)
Proof of violation	Employee or Customer reports, with no additional verification required	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW
Letter/fine	Warning letter mailed to premise and billing address	Violation letter posted and mailed with $100 penalty on next bill	Violation letter posted and mailed with $250 penalty on next bill	Violation letter posted and mailed with $500 penalty on next bill	Violation letter posted and mailed, shut off per Rule 11 and $500 penalty on next bill
Fixing leaks **Stage 1** **Stage 2** **Stage 3** **Stage 4**	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate	Customer has: 5 days 72 hours 24 hours Immediate
Time to correct violation	5 days	5 days	5 days	5 days	5 days
Time customer has to request variance of the alleged violation	14 days to contact CAW in writing	14 days to contact CAW in writing	10 days to file an appeal with CAW in writing	10 days to file an appeal with CAW in writing	10 days to file an appeal with CAW in writing
If the customer does not agree with CAW's resolution[1] **Reference Section K of Rule 14.1**	Further reported violations of the same restricted use will not be counted in the determination of further action until one week after the variance request is resolved	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC

[1] If a customer has appealed the receipt of the penalty, the penalty will continue to be posted on the customer's account, but will not result in further service action, until at least 14 days after the resolution of appeals. Once resolved, if in the customers favor, the penalty will be immediately removed from the account. If not resolved in the customers favor, then the penalty will be due and payable as part of the next billing cycle and subject to all such further actions as with any other billed charge.
[2] For violation 6 instead of shut-off per Rule 11 and $500 penalty, a flow restrictor will be installed for duration of enforcement.(Continued)

***Plan for San Marino service area shown**

1.7 Legal Authorities

CAW does not have authority to adopt resolutions or ordinances as a public utility company. However, CAW can support local jurisdictions in developing ordinances or resolutions within its Los Angeles service areas that would be compatible with CAW's WSCP. For all intents and purposes of this UWMP, the Rule No. 14.1 (Attachment 1) serves as the WSCP resolution and anticipated course of action to achieve all necessary requirements of the WSCP if needed. California American Water must also adhere to Rule No. 14.1 to declare a water shortage emergency. California American Water will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.

1.8 Financial Consequences of WSCP

CAW develops a proposed rate structure on a three-year cycle and submits it to the CPUC for review and approval. To assist in revenue stabilization and provide an incentive to promote conservation, CAW requested a full decoupling Water Revenue Adjustment Mechanism (WRAM) in its General Rate Case. WRAM is the mechanism through which sales are decoupled from revenues, so that conservation is encouraged without having a negative financial impact. Currently, all of CAW's districts have received CPUC approval for a WRAM.

The WRAM tracks the differences between total quantity charge revenues authorized by CPUC ("Total Actual Quantity Revenues") and the total revenues actually recovered through the quantity charge based on actual sales ("Total Actual Quantity Revenues") during conservation rates, emergency rates or rationing rates. The revenue requirements are the same under conservation rates as they are under the current Commission "standard" rate structure. To recover any under collection or refund any over collection CAW implements a surcharge/ surcredit that considers the net balance of the WRAM balancing account. The WRAM will provide a cost accounting means to stabilize revenues and ensuring protection of revenue shortfalls.

In 2020, the CPUC ordered that regulated water utilities may not include the continuation of the WRAM and MCBA in their next general rate case filing but may propose the use of a Monterey-Style Revenue Adjustment Mechanism and Incremental Cost Balancing Account.

In the absence of a WRAM/MCBA, during a water shortage, California American Water will file for a Drought Memorandum Account, or similar, to track incremental shortage-related expenses to be reviewed by the CPUC for future recovery in rates. California American Water will also file for a Drought Lost Revenue Memorandum Account, or similar, to track reduced sales to be reviewed by the CPUC for future recovery in rates. California American Water tracks costs related to discouraging excessive water use by customers during normal climate conditions as well as during a drought emergency.

Both the Drought Memorandum Account and Drought Lost Revenue Memorandum Account are mechanisms that have been approved by the CPUC in previous droughts.

1.9 Monitoring and Reporting

As described in Section 1.2, CAW intends to track its supplies and project demands on an annual basis and, if supply conditions described in Table 1-1 (DWR Table 8-1) are projected, CAW will enact their WSCP through an advice letter sent to CPUC and communicate to the water service area of any relevant restrictions of water use. Monitoring demands is essential to ensure the WSCP response actions are adequately meeting reductions and decreasing the supply/demand gap. This will help to analyze the effectiveness of the WSCP or identify the need to activate additional response actions.

The water savings from implementation of the WSCP will be determined based on monthly production/sales reports which will be compared to the supply from prior months, the same period of the prior year, and/ or the allocation. At first, the cumulative consumption for the various sectors (e.g.,

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residential, commercial, etc.) will be evaluated for reaching the target demand reduction level. Then if needed, individual accounts can be monitored. Weather and other possible influences may be accounted for in the evaluation.

1.10 WSCP Refinement Procedures

CAW intends to use this WSCP as an adaptive management plan to respond to foreseeable and unforeseeable water shortages. The WSCP is used to provide guidance to CAW's Los Angeles district and its staff and the public by identifying response actions to allow for efficient management of any water shortage with predictability and accountability. To maintain a useful and efficient standard of practice in water shortage conditions, the requirements, criteria, and response actions need to be continually evaluated and improved upon to make sure it provides the tools to maintain reliable supplies and reduce the impacts of supply shortages.

1.11 Special Water Feature Distinction

Per Water Code Section 10632 (b), CAW has defined water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas. As listed in Table 1-2 (DWR 8-2) there are separate demand reduction actions for decorative water features, including decorative fountains, lakes, or ponds, and for pools and spas. Non-pool or non-spa water features may use or be able to use recycled water, whereas pools and spas must use potable water for health and safety considerations. Limitations to pools and spas may require different considerations compared to non-pool or non-spa water features.

1.12 Plan Adoption, Submittal, and Availability

Per Water Code Section 10632 (a)(c), CAW sent letters of notification of preparation of the 2020 UWMP to all cities and counties within its Los Angeles service areas 60 days prior to the public hearing. Copies of the 60-day notification letters are attached as Attachment 4. CAW made the draft 2021 WSCP available for public review and held a public hearing on June 16, 2021. The notice of the public review hearing (Attachment 5) was distributed June 2, 2021.

Once the 2021 WSCP has been adopted, a copy of the WSCP will be submitted to the California State Library, DWR, and all cities and the County of Los Angeles within 30 days of adoption. Based on DWR's review of the WSCP, CAW will make any amendments in its adopted WSCP, as required, and directed by DWR. If CAW revises its WSCP after approved by DWR, then an electronic copy of the revised WSCP will be submitted to DWR within 30 days of its adoption.

Public Draft

Attachment 1: CPUC Water Shortage Contingency Plan, Rule 14.1

Public Draft

Attachment 2: [District] Multi-Jurisdictional Hazard Mitigation Plan

(To Be Incorporated Upon Adoption and Finalization of the WSCP)

Public Draft

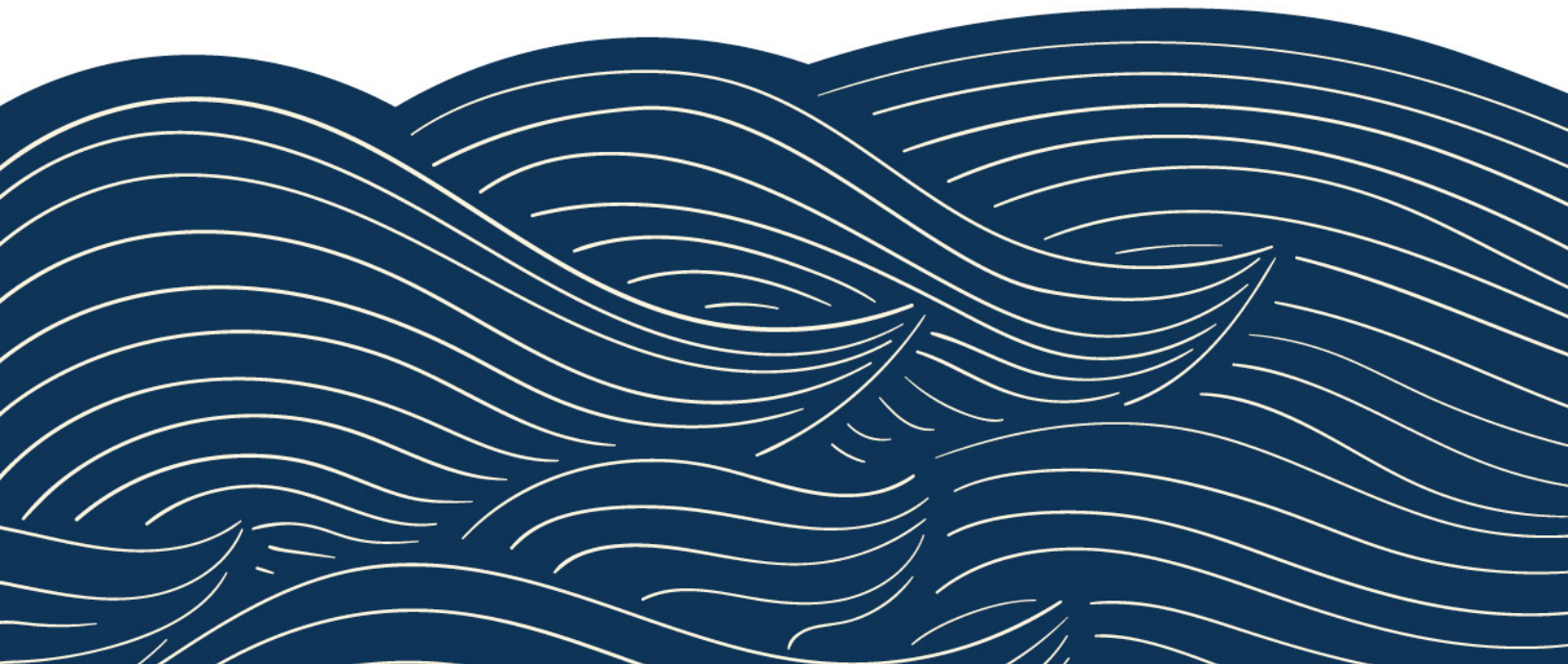
Attachment 3: Resolution Approving the WSCP

(To Be Incorporated Upon Adoption and Finalization of the WSCP)

Public Draft

Appendix I. Groundwater Management Plans

ublic Draft



Omitted from Final to reduce file size and total pages. A copy of the Central Basin Groundwater Monitoring Report can be found by following the link below:

https://www.wrd.org/sites/pr/files/2019_cb_watermaster_report_final.pdf

Public Draft

Omitted from Final to reduce file size and total pages. A copy of the Main San Gabriel Basin Five-Year Water Quality and Supply Plan can be found by following the link below:

https://955084b9-ee64-4728-a939-5db8ad0ab8ae.filesusr.com/ugd/af1ff8_a040fbf5e7f949cab2bc482c8a2783d4.pdf

Public Draft

Omitted from Final to reduce file size and total pages. A copy of the Raymond Basin Annual Report can be found by following the link below:

https://957df130-ddac-463e-87d0-3c9f15dbe48b.filesusr.com/ugd/d1b21e_f4278e85ba3e47abbe124aacf458c565.pdf

Public Draft

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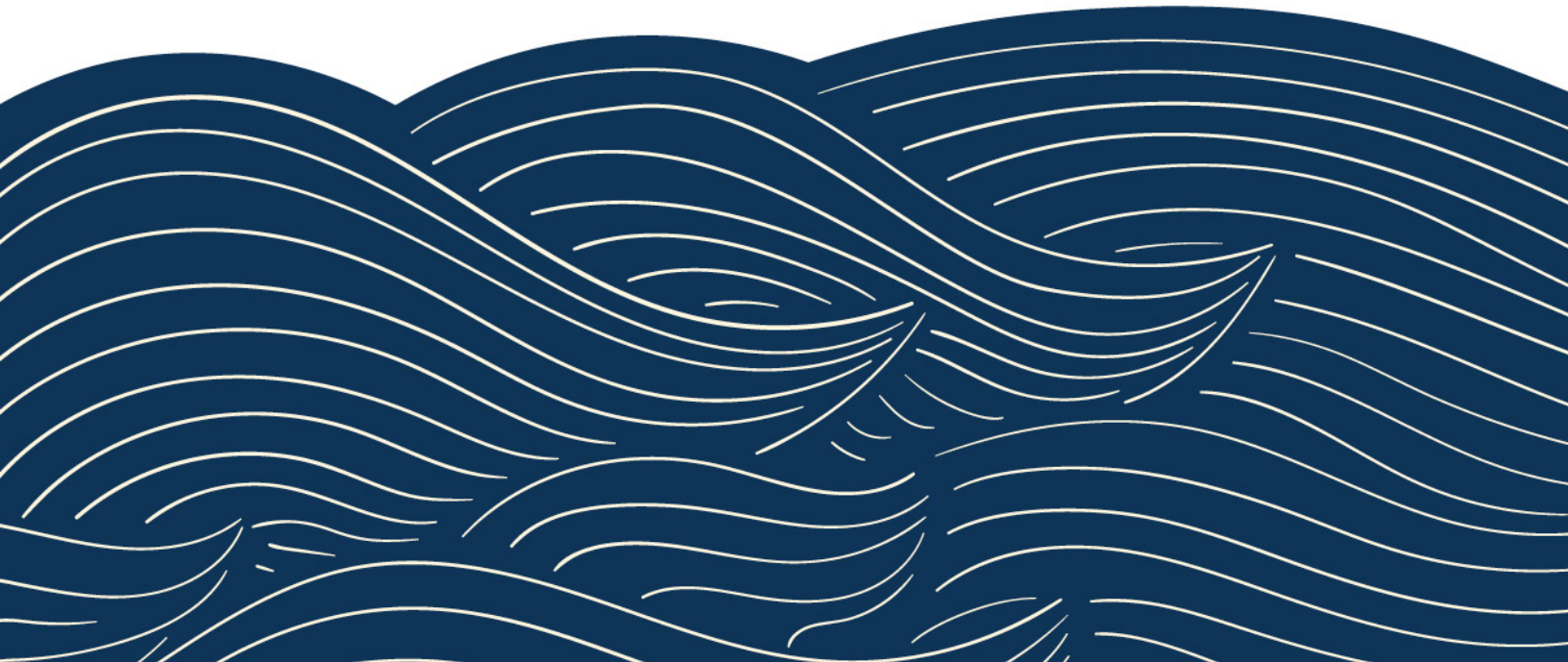
Appendix J. Adjudication Documents

ublic Draft



Omitted from Final to reduce file size and total pages. A copy of the Central Basin Adjudication can be found by following the link below:

http://www.cbwatermaster.org/assets/Central_Basin_Third_Amended_Judgment.pdf

Public Draft

Omitted from Final to reduce file size and total pages. A copy of the Main San Gabriel Basin Adjudication can be found by following the link below:

http://media.wix.com/ugd/af1ff8_18ccf3f1064f4c86a8f3453e0c13dc47.pdf

Public Draft

Omitted from Final to reduce file size and total pages. A copy of the Raymond Basin Adjudication can be found by following the link below:

http://media.wix.com/ugd/d1b21e_e7652bc3210142689891d96337670dce.pdf

Public Draft