



CITY OF
POWAY

2020 **URBAN WATER
MANAGEMENT PLAN**

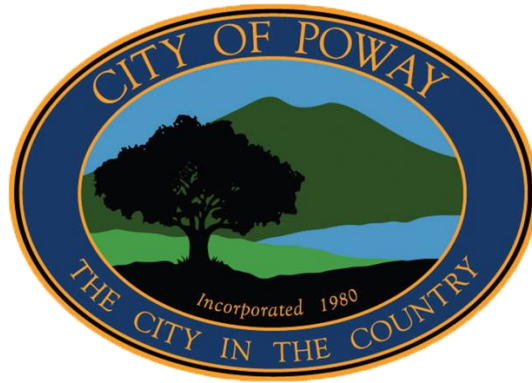
F I N A L

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Prepared By





City of Poway 2020 Urban Water Management Plan

Final

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List of Abbreviations

Act	Urban Water Management Planning Act
AF	acre-feet
AFY	acre-feet per year
AWWA	American Water Works Association
BMP	Best management practices
CDP	Census designated place
CEQA	California Environmental Quality Act
CII	Commercial, Industrial, and Institutional
CIP	Capital improvement program
City	City of Poway
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
DMM	Demand Management Measure
DWR	California Department of Water Resources
ESP	Emergency Storage Project
GIS	Geographic Information System
GPCD	Gallons per capita per day
gpf	gallons per flush
Guidebook	2020 Urban Water Management Plans Guidebook for Urban Water Suppliers
HARRF	Hale Avenue Resource Recovery Facility
IID	Imperial Irrigation District
IPR	Indirect potable reuse
IRWM	Integrated Regional Water Management
LAFCO	San Diego County Local Agency Formation Commission
MAF	Million acre-feet
MG	million gallons
MGD	million gallons per day
MWD	Metropolitan Water District of Southern California
NCWRP	North City Water Reclamation Plant
NOAA	National Oceanic and Atmospheric Administration
PMC	Poway Municipal Code
Poway	City of Poway
QSA	Quantification Settlement Agreement
Ramona MWD	Ramona Municipal Water District
SANDAG	San Diego Association of Governments
SB X7-7	Senate Bill X7-7 (The Water Conservation Act of 2009)
SCADA	Supervisory control and data acquisition
SDCWA	San Diego County Water Authority
SWP	State Water Project
TAF	Thousand acre-feet
TDS	Total Dissolved Solids
UWMP	Urban Water Management Plan
WSCP	Water Shortage Contingency Plan
WWTP	Wastewater Treatment Plant
WTP	Water Treatment Plant

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Executive Summary

The City of Poway (City or Poway) has prepared this 2020 Urban Water Management Plan (2020 UWMP or Plan) in accordance and compliance with the Urban Water Management Planning Act (UWMP Act). Poway's 2020 UWMP serves as the long-term planning document that will help to ensure the City can provide its customers with reliable water supplies through 2045. Pursuant to the requirements of CWC §10630.5, this Executive Summary (ES) provides a simple lay description of the information needed to provide a general understanding of this Plan and includes a description of the City's reliable water supplies, anticipated challenges, and strategies for managing system reliability risks.

Each of the chapters included in this Plan are summarized in the subsequent sections, with key findings highlighted.

ES 1. Introduction and Overview

Poway strives to continue to provide a safe and reliable supply of water to the customers within its service area through 14,195 municipal service connections (as of 2020). Under the UWMP Act, Poway is required to prepare an UWMP to provide a framework for long-term water planning and to develop a long-term water resource plan to ensure that enough water will be available to meet both current and planned customer water uses, also known as demands. This UWMP discusses the following components as related to the supplier: water demands and system uses, water use baselines and targets (to measure water conservation), water supplies, water supply reliability, water shortage contingency planning, and demand management measures.

Poway is one of 24 member agencies of the San Diego County Water Authority (SDCWA), a water supply wholesaler. The City is known as a retail water supplier because it supplies water directly to customers. The City purchases all of its potable (or safe to drink) water supplies from the SDCWA in the form of raw, untreated water and treats the imported water to drinking water standards at the City's Lester J. Berglund Water Treatment Plant (WTP). Therefore, the City has coordinated this Plan with the SDCWA to accurately estimate its future water supplies.

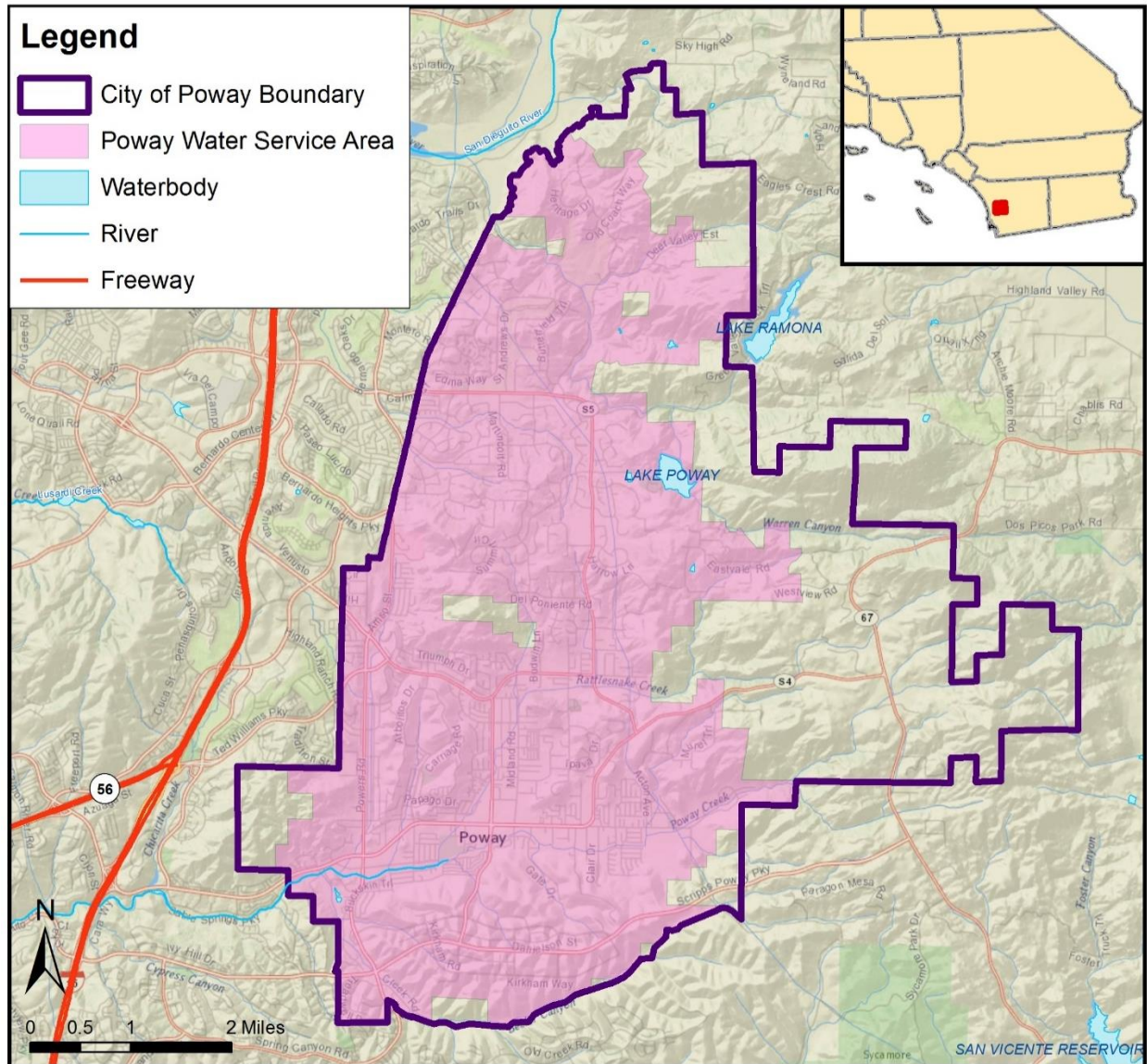
The City selected to report its data for this UWMP on a fiscal year basis as opposed to a calendar year basis, with fiscal year 2020 being the period between July 1, 2019 and June 30, 2020. The City chose to report water volumes in units of acre-feet (AF). One AF equals about 326,000 gallons, or enough water to cover an acre of land, about the size of a football field, one foot deep.

ES 2. System Description

The City of Poway encompasses approximately 39 square miles within San Diego County and is situated roughly 20 miles north of downtown San Diego. A map of the City and its water service area boundary is presented in **Figure ES-1**. The easternmost portion of the Poway (East Poway) is not connected to the municipal water system, and residents in this area receive their water from private groundwater wells. While this unconnected portion of the City is large in land area (about 29% of the City's total area), the unconnected population is relatively small (less than 1% of the City's total population). Because population density significantly varies between the connected and unconnected portions of the City, Poway's service area population was estimated as 49,062 (as of 2020) using an alternative calculation method approved by California Department of Water Resources (DWR), which consisted of estimating the population of East Poway and subtracting it from the City's total population. The City's service area is mostly developed, and its population is only projected to increase by approximately 2,11 people, or roughly 4%, over the next 25 years. These regional growth projections are based on the San Diego Association of Governments (SANDAG) Series

14 (Version 17) Regional Growth Forecast, which was developed for its 2019 Federal Regional Transportation Plan and adopted by SANDAG's Board of Directors on October 25, 2019.

Figure ES-1: Poway Service Area and City Boundary



Poway's climate is typical of a Southern California coastal valley, with mild-to-moderate temperatures, marine breezes, and low humidity. In the City, average annual temperature is 72 degrees and average annual rainfall is between 9 and 14 inches. Poway experiences lower than average rainfall compared to the rest of the country and receives most of its rainfall within a relatively short period of time, both of which can present challenges to water supply planning. Most of the rainfall in the San Diego region occurs during the winter and spring months, creating a wet and a dry season. As a result, the City typically experiences two very different water consumption patterns, one during the wet season and another during the dry season, when outdoor water use significantly increases in response to little or no rainfall. Poway's WTP, reservoirs, distribution system, and billing system are all designed to accommodate weather-related variations in water use.

Poway’s General Plan and land use priority is to preserve a balance between the community’s rural character and well-planned residential, commercial, and industrial development. The City largely supplies water to residential customers within its service area, which make up roughly 90% of Poway’s customer base (as of 2020), and primarily consist of single-family residences. The remaining 10% of Poway’s customer base includes commercial, industrial, landscape, and agricultural users. Poway has experienced a significant increase in commercial and light industrial development over the past 25 years, primarily due to development of the South Poway Business Park (Business Park), a 900-acre complex offering tenants high-quality infrastructure, numerous amenities, and plenty of open space in keeping with the City’s rural surroundings. Poway does not expect a significant increase in commercial and industrial development in the future. Although there are some parcels still available for development within the Business Park, the complex has largely reached its maximum capacity. Poway does not have any significant demographic factors that would affect its water management planning.

ES 3. System Water Use

In fiscal year 2020, total potable and raw water demand in the City’s service area was 8,774 AF (not including recycled water) as shown in **Figure ES-2**, of which 68% was for residential use (63% for single-family and 5% for multi-family), 11% was for landscape use (6% of which consists of the raw water used to irrigate one commercial golf course), 13% was for commercial use, 1% was for industrial use, and less than 1% was for agriculture use. The City also sold 79 AF of treated water to SDCWA for sales to Ramona Municipal Water District. In 2020, total potable and raw water demand per person within the City’s service area was approximately 158 gallons per capita per day (GPCD).

Figure ES-2: 2020 Actual Water Use by Sector for Potable and Raw Water

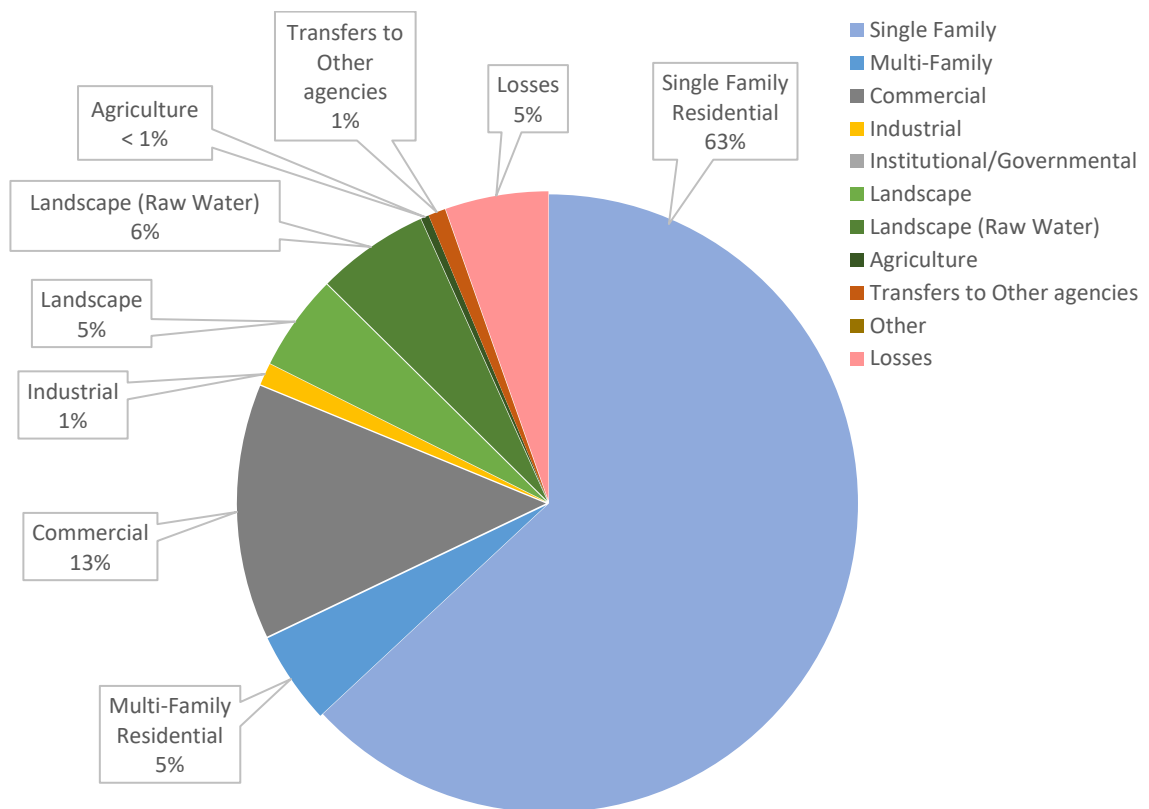
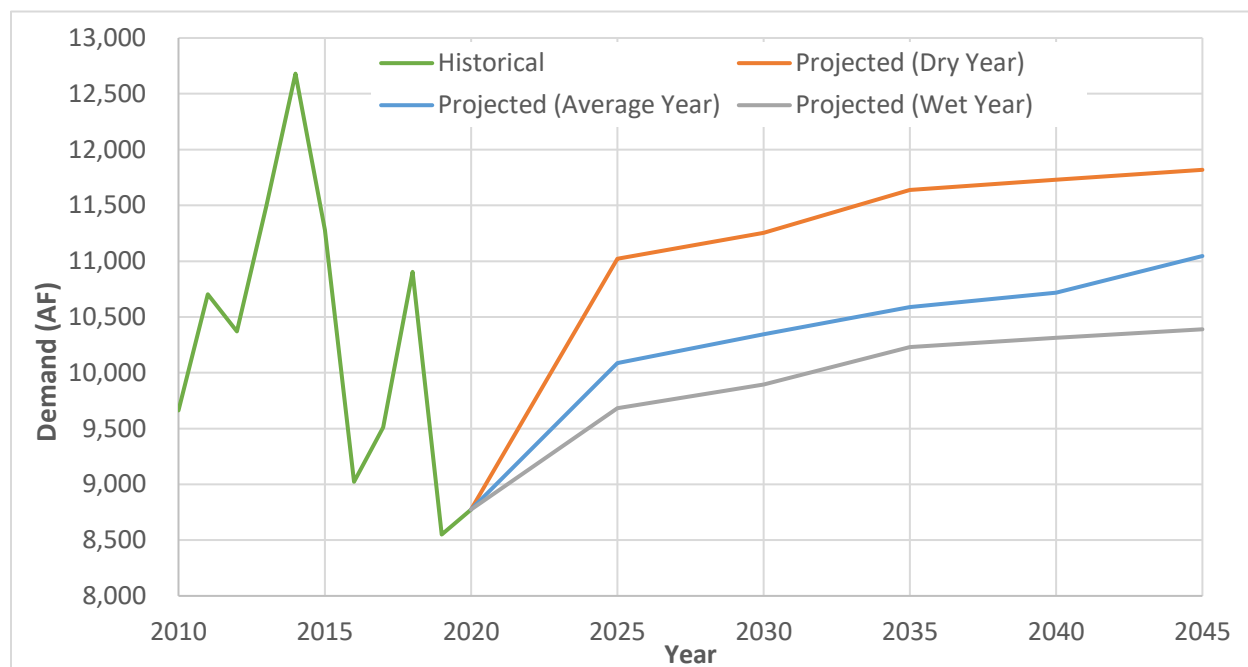


Figure ES-3 presents Poway’s historical (2010-2020) and projected (2025-2045) potable and raw water use.

Figure ES-3: Historical and Projected Potable and Raw Water Demands

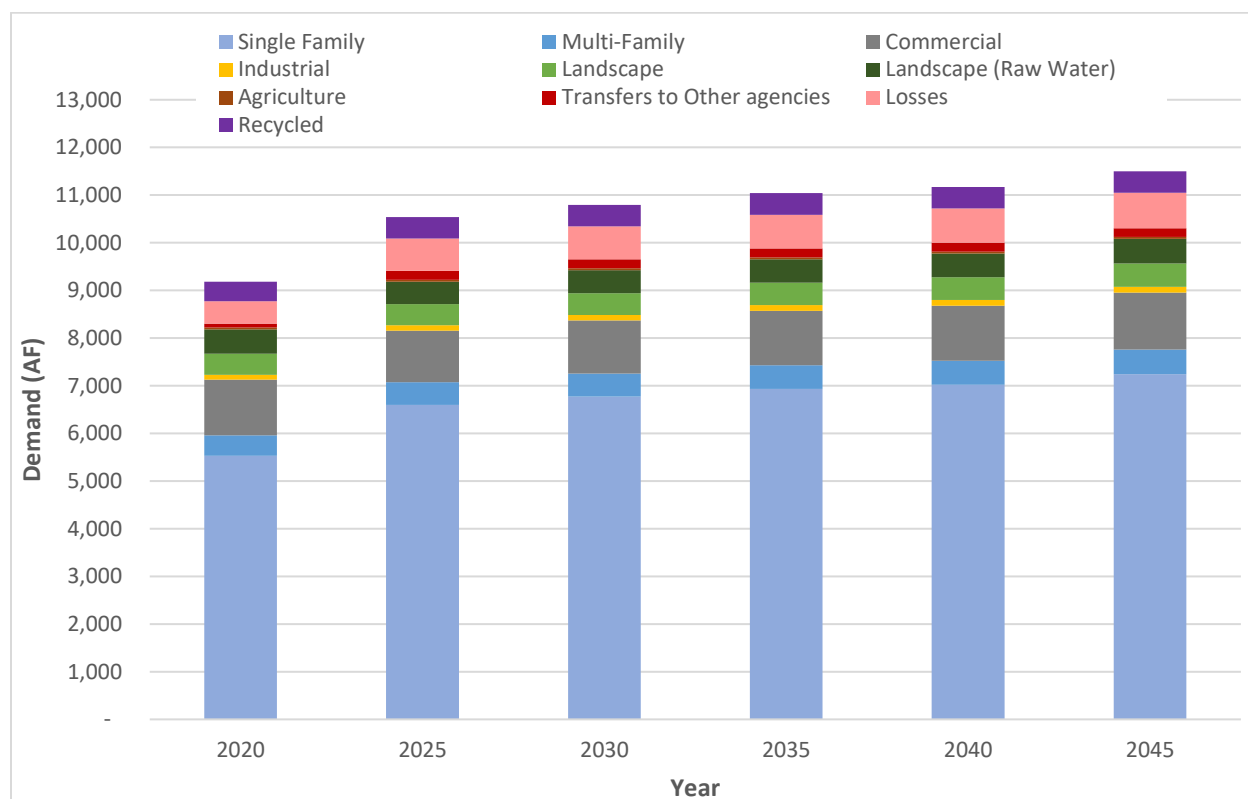


After dropping to a low of 9,021 AF in 2016 as a result of the State-mandated water use restrictions that were implemented during the drought, Poway’s water use began to rebound. Although mandatory restrictions were lifted when drought conditions ended in 2017, water conservation and demand reduction measures have had a lasting effect on decreasing water use within the City’s service area. Post-drought water use reached a high of 10,904 AF in 2018, compared to a pre-drought high of 12,681 AF in 2014.

The “Projected (Average Year)” potable and raw demands presented in **Figure ES-3** represent Poway’s water use during a typical average year with normal precipitation as forecasted by the SDCWA (refer to Table 2-8 of SDCWA’s 2020 UWMP). However, future water use in Poway is anticipated to be variable depending on the actual conditions throughout the year; and therefore, water use during a dry year and wet year have also been projected in **Figure ES-3** based on Poway’s historical demands.

Poway supplied 411 AF of recycled water in fiscal year 2020, making its total potable, raw, and recycled water demand equal to 9,185 AF. By 2045, the City’s total potable, raw, and recycled water demands (based on an average year) are projected to reach 11,496 acre-feet per year (AFY), which represents a 25% increase from the fiscal year 2020 demands. Because the City’s recycled water demands are projected to remain constant around 450 AFY, this projected increase in total demand is expected to result from an increase in potable water demand as shown in **Figure ES-4**.

Figure ES-4: Projected Demands for Potable, Raw, and Recycled Water by Use Sector



ES 4. SB X7-7 Baselines, Targets, and 2020 Compliance

The Water Conservation Act of 2009, known as SB X7-7, requires the City to reduce its per person (or per capita) water use by at least 20% by the year 2020. Water suppliers that do not achieve the required water use reductions are potentially ineligible to receive State funding. As a result, SB X7-7 has been a driver of suppliers’ efforts to establish, promote, and prioritize water conservation programs and demand management measures to reduce water use. Suppliers measure compliance with SB X7-7 by calculating baseline water use and comparing it to an established water use target.

The City met its required water use reduction and is in compliance with SB X7-7. The City’s actual water use in fiscal year 2020 was 167 GPCD, which is approximately 21% less than its 2020 target water use of 210 GPCD.

ES 5. System Supplies

The City’s water supply portfolio includes imported water purchased from the SDCWA, local surface water runoff from Lake Poway (which is variable and not included in the supply projections), and recycled water purchased from the City of San Diego. The City of Poway imports 99% of its water supplies from SDCWA, which are treated to drinking water standards at the City’s WTP, along with any local water supplies obtained from Lake Poway.

In fiscal year 2020, the City purchased 9,374 AF of imported raw water from the SDCWA. The SDCWA purchases water from the Metropolitan Water District of Southern California (MWD), sourced from both the Colorado River Aqueduct (CRA) and the State Water Project (SWP). The SDCWA also purchases desalinated seawater, which is treated to drinking water standards at the Claude “Bud” Lewis Carlsbad Desalination Plant (Carlsbad Desal Plant).

In fiscal year 2020, Poway purchased 411 AF of recycled water from the City of San Diego to supply to its customers. Currently, the City provides recycled water for landscape irrigation in the South Poway Business Park. The City can purchase up to 650 AFY from the City of San Diego and will continue to explore feasible and cost-effective options to expand its recycled water use in the future.

Additionally, the North County One Water Program could supply an estimated 18,000 AFY to 25,000 AFY or more of purified recycled water to the San Diego region for potable reuse by 2035. The City is supportive of this future project and is interested in purchasing up to 2,000 AFY of recycled water from it. Because this project is still considered “conceptual”, meaning that it is in the pre-planning or pre-feasibility analysis stage, it was not factored into the City’s future supply projections for this Plan.

ES 6. Water Supply Reliability

This Plan presents the City’s water reliability assessments from 2025 through 2045. Consistent with the UWMP Act requirements, each assessment compares total projected water supply to total projected water demands in five-year increments over the next 20 years under the following scenarios:

- Normal water year
- Single dry-year
- Multiple dry-year

The purpose of this analysis is to help to identify whether potential supply reliability issues exist under the various hydrologic scenarios evaluated. As demonstrated in this section, no water shortages are projected under any of the hydrologic scenarios evaluated. The SDCWA’s 2020 UWMP reports that it anticipates imported and stored water would be sufficient to meet future demands of its member agencies under the single dry year and multiple dry year assessment when accounting for changes in local supply availability and regional demands. Therefore, Poway could purchase additional supplies from the SDCWA to meet increased water demands. The City’s recycled water supply is considered “drought-proof” because it is typically not vulnerable to drought conditions. Poway’s recycled water supplier, the City of San Diego, also has the capacity to increase recycled water deliveries to Poway, up to 650 AFY, should recycled water demands increase during drought conditions. The reliability assessment results concluded that projected available supplies would meet anticipated demands, demonstrating that the City’s water supply mix is reliable and drought resilient.

Pursuant to a new requirement, a water supplier must also include in its 2020 UWMP a drought risk assessment (DRA) to compare supplies and demands over a five-year consecutive dry period, or extended drought. Based on the SDCWA’s drought assessment presented in its 2020 UWMP, which showed sufficient supplies to meet member agency demands, Poway’s DRA (evaluated for the years 2021 – 2025) also assumed that the City could purchase additional supplies from the SDCWA to overcome shortages and concluded that projected available supplies would meet anticipated demands, demonstrating resiliency.

ES 7. Water Shortage Contingency Plan

The Water Shortage Contingency Planning chapter of this UWMP discusses the potential actions that Poway could take to address supply shortages due to a catastrophe, drought, or other supply disruption. It also highlights elements of the City’s *Water Conservation Plan*, also known as its Water Shortage Contingency Plan (WSCP), including specific actions to be taken in response to various water shortage levels and the process of performing an annual water supply and demand assessment (Annual Assessment) to evaluate short-term reliability for the upcoming fiscal year. If the Annual Assessment anticipates that demands will exceed available supply, Poway’s City Council will vote to

determine the appropriate water shortage level and associated actions necessary to reduce demand to ensure adequate supply.

Poway's WSCP (*Water Conservation Plan, Poway Municipal Code Chapter 8.94*) serves as the City's guiding document to respond to water shortages and includes information on the process to prepare the Annual Assessment; the water shortage levels, their response actions, and the expected water savings; and penalties for violating *Chapter 8.94*. The City activates its water shortage response levels in accordance with the levels, and associated mandatory water use restrictions, activated by the SDCWA.

Pursuant to new 2018 legislation that was adopted in response to the recent severe drought, water suppliers must address several new requirements in their WSCPs, one of which includes updating from four (4) to six (6) standard water shortage response levels (progressive ranges of 10%, 20%, 30%, 40%, 50%, and greater than 50% shortage) or cross-walking the six (6) standard levels to the supplier's existing four (4) stages. The City's WSCP was updated to comply with the new requirements and was adopted at a public hearing on May 18, 2021.

ES 8. Demand Management Measures

The Water Code defines "Demand Management" as water conservation measures, programs, and incentives that prevent the waste of water and promote reasonable and efficient use and reuse of available supplies. Demand management measures (DMMs) are developed and implemented for the purpose of reducing overall demand on a water supplier. Demand reductions can be achieved using several methods including water conservation, which is a relatively low-cost way to supplement water supply that is typically easy to implement.

Water conservation measures have evolved over time. In the 1990s, DMMs were focused on reducing indoor water use, mainly through replacement of low-efficiency plumbing fixtures (i.e., toilets, showerheads) with more efficient, low-flow fixtures. Once significant reductions in indoor water use were realized as a result of fixture replacement, new measures focused on reducing outdoor water use were implemented and remain the primary focus of today's DMMs.

Water conservation is a key component in Southern California's strategy to meet water demand, and Poway has demonstrated its commitment to water use efficiency and conservation by proactively supporting City, SDCWA, and MWD water conservation programs since the early 1990s. Water conservation programs offered by the City, either on its own or in combination with the Water Authority and MWD, include:

- Water conservation rebates and incentives
- Commercial and residential conservation audits and surveys
- Professional and residential workshops
- Public outreach and education (i.e., newsletters)
- Large landscape budgets (i.e., Turf Replacement Program)

Additionally, adoption of SB X7-7 in 2009, as discussed in Section ES-4, has promoted DMMs for the purpose of reducing demands to meet the required water use reductions. The City's participation in these water conservation programs aided in the achievement of its targeted reduction and compliance with SB X7-7.

Table ES-1 presents a summary of Poway's participation in rebate and incentive programs over the past five years.

Table ES-1: Summary of Poway’s Participation in Rebate and Incentive Programs

Program	City of Poway Participation (2016-2020)
Regional WaterSmart Turf Replacement and Sustainable Landscapes Programs	74 rebates issued for replacement of over 78,000 square feet of turf
SoCal Water\$mart Residential Program	855 rebates issued for installation of over 2,061 indoor and outdoor water-efficient devices, contributing to an estimated savings of nearly 246 acre-feet of water over the devices’ useful lives.
SoCal Water\$mart Commercial, Industrial, and Institutional (CII) Program	24 rebates issued for installation of over 9,029 indoor and outdoor water-efficient devices, contributing to an estimated savings of nearly 182 acre-feet of water over the devices’ useful lives.
Audits and Surveys	104 WaterSmart Checkups and 6 landscape irrigation surveys performed

ES 9. Plan Adoption, Submittal, and Implementation

The City held a public hearing to review public comments on its Draft WSCP on Tuesday, May 18, 2021. The City held another public hearing on Tuesday, June 1, 2021 to review public comments on its Draft 2020 UWMP and an Addendum to the 2015 UWMP on Delta Reliance. Poway’s 2020 UWMP, WSCP, and Addendum to the 2015 UWMP Delta Reliance were adopted immediately following each respective public hearing.

At least 60 days prior to the public hearing, on March 9, 2021, the City notified the appropriate agencies, cities, and counties. The City also published notices of each public hearing in the *Poway News Chieftain*, a local newspaper of general circulation, twice (once a week for two successive weeks), pursuant to Government Code 6066. Copies of the Notices of Public Hearing published in the *Poway News Chieftain*, the City Council agenda reports, and the signed resolutions of adoption are included as an appendix to this UWMP. Following adoption, the City submitted its final 2020 UWMP and WSCP to DWR electronically through DWR’s online submittal tool by July 1, 2021.

Chapter 1 Introduction and Overview

1.1. Introduction

The California Water Code §10610 et sec. requires all urban water suppliers within the State of California to prepare an Urban Water Management Plan (UWMP) and update it every five years to satisfy requirements of the California Urban Water Management Planning Act of 1983 and its amendments. This 2020 UWMP satisfies the requirements of the Urban Water Management Planning Act (the Act) which defines an urban water supplier as a supplier, either publicly or privately owned, that provides water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. The California Department of Water Resources' (DWR) UWMP checklist including the location of all required components of the UWMP is included in **Appendix A**.

This 2020 UWMP is for the City of Poway, an urban water supplier that provides service to approximately 14,195 connections (potable and recycled), all metered. The UWMP reviews water trends, supply, and demand projections for the next 25 years, and serves as a planning document for the City of Poway and regional decision makers and provides the public with information about water supply within the Poway service area.

1.2. Coordination

San Diego County Water Authority (SDCWA) is the water wholesaler for the San Diego Region. SDCWA is comprised of 24 member agencies, including the City of Poway. SDCWA has prepared a 2020 UWMP in accordance with requirements for water wholesalers, which addresses the regional issues concerning San Diego County water demands and supplies. The Metropolitan Water District of Southern California (MWD), from which SDCWA purchases imported water, has also prepared a 2020 UWMP that provides data on projected imported water deliveries.

While preparing the 2020 UWMP, the City of Poway coordinated its efforts with a number of agencies to ensure that data and issues are presented accurately, including: SDCWA, the County of San Diego, the City of San Diego Public Utilities Department, the City of Escondido, and San Diego Association of Governments (SANDAG).

As required, the City of Poway issued a 60-day notice to the County of San Diego prior to the June 1, 2021 City Council public hearing regarding the 2020 UWMP. The City of Poway elected to provide 60-day notice to Ramona Municipal Water District (Ramona MWD) because Poway occasionally provides treated water to the SDCWA for sales to Ramona MWD. As a courtesy, the City also provided 60-day notices to the City of San Diego, City of Escondido, SANDAG, San Diego Local Agency Formation Commission (LAFCO), and the SDCWA. The 60-day notices which were distributed on March 9, 2021 are included in this UWMP as **Appendix B**. Coordination efforts between Poway and other entities as part of the UWMP process are summarized in **Table 1-1**, **Table 1-2**, and **Table 1-3**.

DWR's *2020 Draft Urban Water Management Plan Guidebook for Urban Water Suppliers* (Guidebook), dated March 2021, was used in preparing this 2020 UWMP. The City of Poway sent a copy of its adopted WSCP and 2020 UWMP to DWR, the California State Library, and SDCWA following adoption and by July 1, 2021. DWR requires data tables in a particular format be provided as part of the 2020 UWMP. **Appendix C** includes a complete set of the required tables; however, the majority of the required tables are also incorporated within the body of this UWMP. The blue table headings in each table indicates whether or not the table is required by DWR, and also indicates the table numbering per DWR's Guidebook.

Table 1-1: Wholesale Information Exchange

DWR Table 2-4: Water Supplier Information Exchange	
The retail supplier has informed the following wholesale supplier of projected water use in accordance with CWC §10631	
San Diego County Water Authority	

Table 1-2: Notification to County of San Diego

DWR Table 10-1: Notification to Cities and Counties		
County Name	60 Day Notice	Notice of Public Hearing
San Diego County	X	X

Table 1-3: Voluntary Notification for UWMP Preparation

Organization/Agency Name	60 Day Notice	Notice of Public Hearing
City of San Diego	X	X
City of Escondido	X	X
Ramona MWD	X	X
San Diego Association of Governments	X	X
San Diego County Water Authority	X	X
San Diego Local Agency Formation Commission	X	X

1.3. Plan Preparation

This 2020 UWMP was prepared by the City of Poway, a retail water agency as defined by California Water Code (CWC) §10608.12, which provides water to its customers through a single public water system. This 2020 UWMP was prepared as an individual plan in coordination with appropriate agencies. **Table 1-4**, **Table 1-5**, and **Table 1-6** provide information about Poway and the structure of the 2020 UWMP, as required in the Guidebook.

Table 1-4: Retail: Public Water System

DWR Table 2-1: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 (AF)
CA3710015	Poway, City of	14,195	9,185

Table 1-5: Plan Identification

DWR Table 2-2: Plan Identification	
X	Individual UWMP
	Regional UWMP

Table 1-6: Agency Identification

DWR Table 2-3: Agency Identification	
Name of Agency	City of Poway
	Agency is a wholesaler
X	Agency is a retailer
Fiscal or Calendar Year	
	UWMP Tables are in Calendar Years
X	UWMP Tables are in Fiscal Years
If using fiscal years provide month and date that the fiscal year begins (mm/dd):	
07/01	
Units of Measure	
X	Acre Feet (AF)
	Million Gallons (MG)
	Hundred Cubic Feet (CCF)
NOTES: Fiscal year reporting from 7/1/2019 to 6/30/2020	

1.4. Lay Description of 2020 UWMP

An overall lay description of the 2020 UWMP, including information related to water service reliability, potential issues, and strategies for managing reliability risks, is provided in the executive summary of this 2020 UWMP.

Chapter 2 System Description

2.1. Introduction

Poway acts as the water supplier for customers within its jurisdiction and imports 99% of its water supply from SDCWA in the form of raw, untreated water. When available, the City's water supply also includes local rainfall that is captured in Lake Poway. Poway also purchases recycled water (approximately 400-500 acre-feet per year [AFY]) from the City of San Diego for irrigation in the Poway Business Park.

Poway owns and operates the Lester J. Berglund Water Treatment Plant (WTP), which treats the raw, untreated imported water and rainfall to potable (drinking water) levels for the City. The WTP has a peak design capacity of 24 million gallons per day (MGD) and typically produces 8.2 MGD on average, based on fiscal year 2020 demands. The distribution system includes approximately 294 miles of water mains, 18 pressure zones, one 10-million-gallon (MG) clearwell, and 18 drinking water storage tank reservoirs, which range in capacity from 200,000 gallons to 2.5 MG and exist to maintain adequate supplies during peak demand for fire flow or other emergencies. All of the storage reservoirs are covered to prevent losses from evaporation and to reduce pollution and contamination risks. The City's surface water reservoir, Lake Poway, is a man-made surface storage reservoir with a maximum capacity of 3,300 AF (or 1,075 MG). Lake Poway provides storage for emergencies and buffers the effects of peak seasonal water demands.



The City's Lester J. Berglund WTP is located at Lake Poway, which stores raw water purchased from SDCWA.

Poway's water treatment and distribution system are continuously monitored to ensure compliance with State and Federal regulations. The City manages its water system 24-hours per day, 7-days per week with staff and supervisory control and data acquisition (SCADA) systems to maximize water resources and minimize importation of raw water. The infrastructure is maintained daily and is regularly upgraded. The City's *2014 Water Distribution System Maintenance and Rehabilitation Assessment* describes the plans for maintenance, rehabilitation, and replacement for the water distribution system (e.g., pipelines, storage reservoirs, and pumping stations).

2.2. Service Area

History and Formation

Water service became a municipal function in the Poway vicinity in 1954 when SDCWA's aqueduct was constructed, and the Poway Municipal Water District was formed. In 1971, the directors of the Poway Municipal Water District made plans for expanded water treatment and emergency storage capacity, and subsequently, voters in the District approved a bond to construct the Lake Poway Dam.

Lake Poway became operational as a surface water reservoir and recreational area in 1972, and major modifications to the adjacent water treatment plant were completed in 1974. Poway incorporated as a general law city on December 1, 1980 and merged the Poway Municipal Water District and the Pomerado County Water District to establish a municipality. A Council-City Manager form of government administers the City. The Mayor and Council members are non-partisan and are elected to serve staggered four-year terms. The Council appoints the City Manager to run the daily municipal operations.

Physical Description

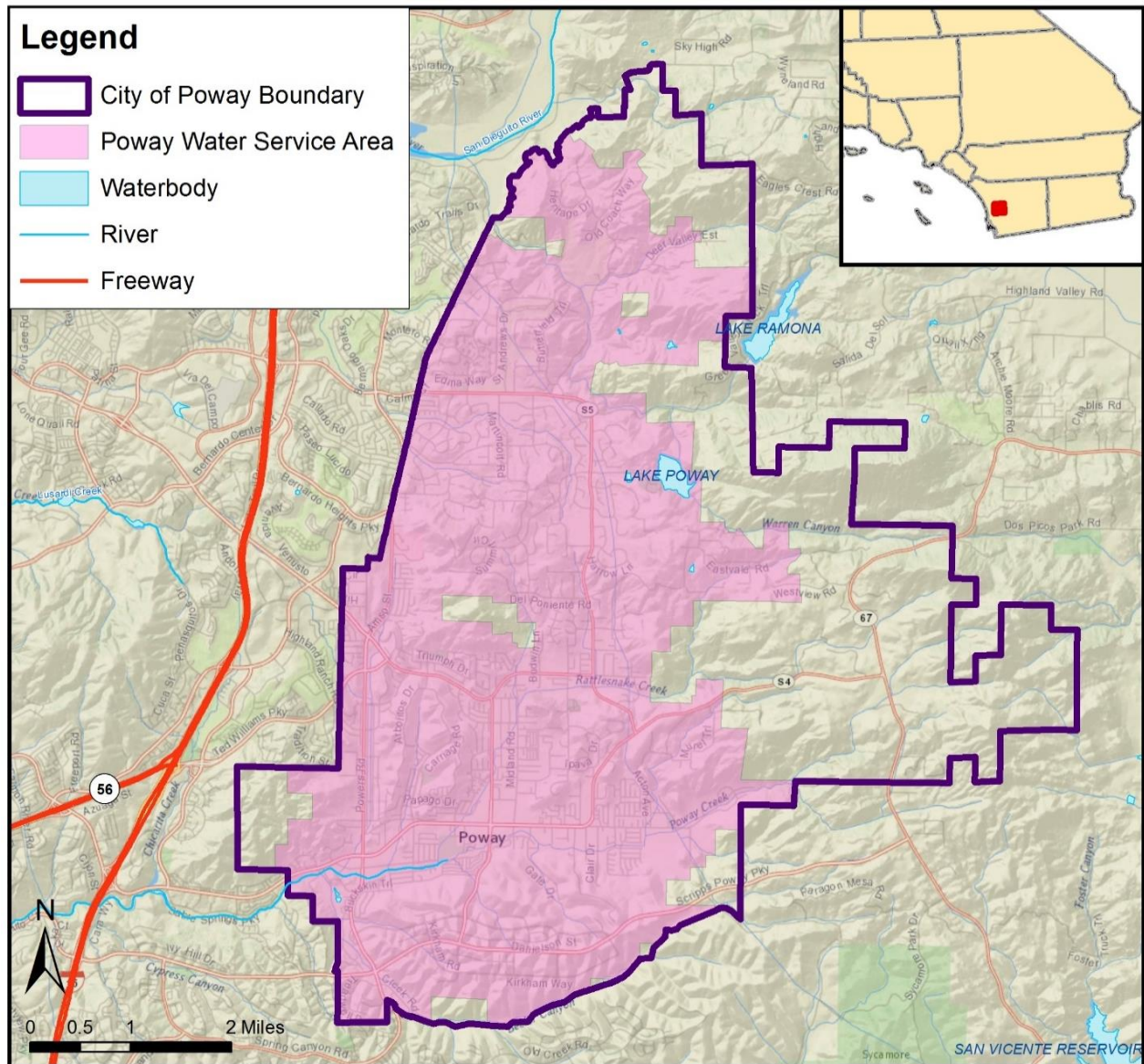
The City of Poway encompasses 39 square miles in San Diego County, 20 miles north of downtown San Diego. Poway borders the City of San Diego on two sides, including the communities of Scripps Ranch to the south and Sabre Springs, Rancho Peñasquitos, and Rancho Bernardo to the west. The City of Escondido is just north of Poway, and the unincorporated community of Ramona is to the east. Poway is one mile east of Interstate 15, which links San Diego, Riverside, Los Angeles, and Orange Counties. The elevation of Poway ranges from 480 to 2,250 feet above sea level.

A map of the City of Poway is provided in **Figure 2-1**. The easternmost portion of the City of Poway is not connected to the municipal water system, and residents in that area receive water via private groundwater wells. As such, the map of Poway's service area in **Figure 2-1** delineates both the entire City of Poway and the portion of the City of Poway that is served municipal water (herein referred to as the City's Service Area).

Imported Water and Wholesale Information

The City of Poway is one of 24 member water agencies of the SDCWA, and purchases most of its water supply from SDCWA. SDCWA is a wholesaler of imported water, consisting of water purchases from MWD, water transfers from Imperial Irrigation District (IID) and canal lining projects that are wheeled through MWD's conveyance facilities, and spot water transfers that are pursued on an as-needed basis. Additionally, in 2015, SDCWA began purchasing water from the Claude "Bud" Lewis Carlsbad Desalination Plant, which is a fully-permitted seawater desalination plant and conveyance pipeline that provides a highly-reliable local supply of up to 56,000 AFY for the San Diego Region. Imported water supplies are delivered to SDCWA member agencies through a system of large-diameter pipelines, pumping stations, and reservoirs. The pipelines delivering supplies from MWD are divided into two aqueduct alignments, both of which originate at Lake Skinner in southern Riverside County and run in a north to south direction through the SDCWA service area.

Figure 2-1: Poway Service Area and City Boundary

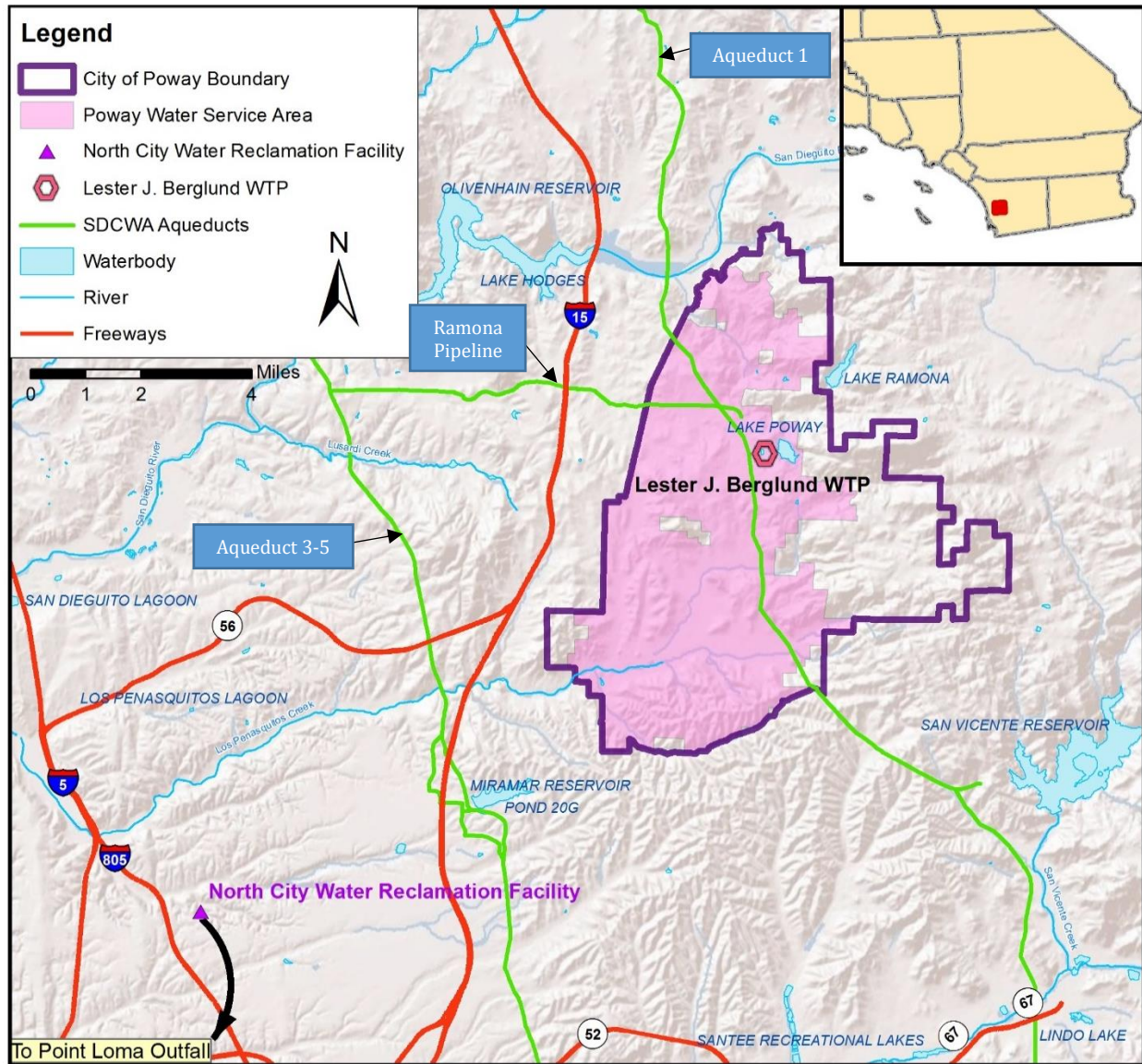


SDCWA was established pursuant to legislation adopted by the California State Legislature in 1943 to provide a supplemental water supply in response to the expanding civilian and military population within the San Diego region. Due to the strong military presence in the region, the federal government arranged for water from the Colorado River to be delivered to San Diego in the 1940s. Beginning in 1947, water was imported from the Colorado River through a single pipeline that connected to MWD's Colorado River Aqueduct located in Riverside County. However, to meet the water demand for a growing population and economy, SDCWA constructed four additional pipelines between the 1950s and early 1980s that are all connected to MWD's conveyance system and deliver water to San Diego County. Pipelines 1 and 2 comprise the First San Diego Aqueduct, which stretches from MWD's delivery point to San Vicente Reservoir. Pipelines 3, 4, and 5 form the Second San Diego Aqueduct.

MWD, formed in 1928, supplies water to approximately 19 million people in a service area that includes portions of Ventura, Los Angeles, Orange, San Bernardino, Riverside, and San Diego counties. SDCWA is one of 27 MWD member agencies and is the largest agency in terms of water deliveries.

Poway purchases raw, untreated water from SDCWA. The water is delivered via SDCWA's First San Diego Aqueduct from Lake Skinner in Riverside County and is then treated to potable levels at the City's Berglund WTP for distribution to Poway's customers. **Figure 2-2** provides an overview of Poway's supply sources, which are discussed in more detail in **Chapter 5: System Supplies**.

Figure 2-2: Poway Water Supplies and Facilities



2.3. Population

Under the terms of a 1992 Memorandum of Agreement between the SDCWA and the San Diego Association of Governments (SANDAG), SDCWA utilizes SANDAG’s official population forecasts to project water demands for the region. In order to develop the population projections, SANDAG extensively gathers information from a number of sources including city and county general and specific plans, U.S. Census Bureau data, County Assessor information, various standard demographic information including birth and death records, and other available land use and planning documents. Each year, SANDAG’s findings are compared with the State Department of Finance figures that consider drivers’ license data, tax records, and other pertinent demographic information. SANDAG provides SDCWA with current and projected population, as well as historical population data. All documents utilized the latest available SANDAG regional population estimates for historic and projected population assumptions.

Historical Population

The population of the entire City of Poway decreased slightly between 2000 and 2010, per data from the 2010 U.S. Census. The reported population for the City of Poway was 48,044 in 2000, dropping to 47,811 in 2010.¹ According to the City of Poway’s Housing Element Update, it is likely that this population decrease was due to the 2008 economic recession. Between 2010 and 2019, the population of Poway has increased by approximately 3% to 49,323 residents based on the U.S. Census vintage year 2019 estimate. The vintage year (i.e., V2019) refers to the final year of the time series.

A small portion of the City of Poway is not connected to the water system, and therefore, residents in this area are not part of Poway’s Service Area (refer to **Figure 2-1**). To provide a more accurate 2020 population estimate for Poway’s Service Area, the population of the unconnected portion of the City (East Poway) was subtracted from the City’s total population (49,338 according to the Department of Finance [DOF] estimate). This method of calculating population was approved by DWR in the 2015 UWMP and is described in **Section 4.3 of Chapter 4: Water Use Baselines and Targets**.

Future Population

Population projections are presented in **Table 2-1** for Poway’s service area from 2020 through 2045 in 5-year increments. The projections are based on SANDAG’s 2050 Regional Growth Forecast, Series 14 (Version 17) Model and were obtained by Poway in December 2020. To provide more accurate population projections for Poway’s Service Area, the population of the unconnected portion of the City (East Poway) was subtracted from the City’s total population.

Table 2-1: Current and Projected Population (Calendar Year Data)

DWR Table 3-1: Population — Current and Projected							
	2020	2025	2030	2035	2040	2045	Data Source
City of Poway Population	49,338	51,239	51,239	51,239	51,250	51,456	SANDAG 2050 Regional Growth Forecast, Series 14 (Version 17); 2020 value from DOF minus East Poway population
Service Area Population	49,062	50,960	50,960	50,960	50,971	51,176	SANDAG 2050 Regional Growth Forecast, Series 14 (Version 17) - modified to remove East Poway population not served by municipal system; 2020 value from DOF minus East Poway population

¹ United States Census Bureau. 2021. *QuickFacts: Poway city, California*. Available at: <https://www.census.gov/quickfacts/fact/table/powaycitycalifornia#>

Poway is relatively built-out and the population is projected to only increase by approximately 4% between 2020 and 2045, which equates to a total population increase of just over 2,100 people over the 25-year planning horizon for the 2020 UWMP. Please note that information provided in **Table 2-1** is in calendar year rather than fiscal year. The population projection data was provided from the SANDAG in calendar year form and therefore cannot be converted into fiscal year format. However, given that annual average population growth is very low for the City’s service area, it is not anticipated that there would be a significant difference between fiscal year and calendar year population projections.

The SANDAG Series 14 (Version 17) Model was based on a number of new assumptions, including:

- Accessory dwelling units (ADUs) were assigned jurisdictions based on the number of single-family housing units on parcels that are greater than 5,000 square feet at a rate of 20% of all of these lots in the region
- Vacancy rate of 4% is met in 2040 and is maintained until the end of the forecast
- Additional housing units are built to accommodate the vacancy rate and the aging population, which results in some geographies losing overall population although housing units may stay the same or increase
- Vacation rentals were considered “unoccupiable” and therefore not be available for residents of the region’s population to reside in year-round
- Number of persons per household throughout the region will decrease to 2.62 by 2050 as the population ages

The Series 14 forecast for Poway projects that Poway’s overall service area population will remain constant from 2025 through 2035, despite an increase in the total number of housing units as shown in **Table 2-2**. This phenomenon can be largely attributed to the new Series 14 assumptions because the increase in number of housing units combined with the decrease in persons per household results in virtually no change to the overall population.

Table 2-2: Poway Housing Units Projections by SANDAG (Calendar Year Data)

Housing Unit Type	2025	2030	2035	2040	2045	Data Source
Single Family	13,514	13,697	14,021	14,217	14,404	SANDAG 2050 Regional Growth Forecast, Series 14 (Version 17)
Multi-Family	3,092	3,199	3,361	3,361	3,361	
Total Units	16,606	16,896	17,382	17,578	17,765	

2.4. Land Use

The City of Poway’s General Plan and land use priority is to preserve a balance between the community’s rural character and well-planned residential, commercial, and industrial development. The General Plan, adopted in November 1991, calls for maintaining a majority of the City’s land as open space to provide the community with a natural buffer. An additional 5% of the land is expected to continue being used for agriculture. The majority of open space is located in the foothills that surround Poway. Other open space areas include Lake Poway, the Blue Sky Ecological Reserve, and the Twin Peaks and Boulder Mountain areas. Residential growth is anticipated primarily within the low-density single-family category through 2040. However, the hilly topography and lack of

municipal services in designated very low-density areas generally result in a minimal number of developed home sites.

Poway experienced a significant increase in commercial and light industrial development over the past twenty-five years, primarily in the Poway Business Park, a 900-acre complex offering tenants high-quality infrastructure, numerous amenities, and plenty of open space in keeping with the City's rural surroundings. The Business Park meets the needs of light industrial and manufacturing uses, warehousing and distribution, and research and development businesses. There are 9 million square feet of building space, and some development capacity remains. Currently, nearly 500 businesses with more than 18,000 employees are located in the Business Park. Landscaping in the Poway Business Park generally uses recycled water purchased from the City of San Diego and piped through a dedicated meter and distribution system. City staff routinely inspects the 12-mile recycled water distribution system for excess runoff and other discrepancies to ensure adherence to all regulatory requirements, including Poway's Rules and Regulations for Recycled Water Use, adopted by the City Council on September 30, 1997.

Significant amounts of new commercial and industrial development are not expected in Poway. There are some parcels remaining for development in the Business Park, but it has largely reached its maximum capacity. New commercial and industrial development is expected to be conversions of existing parcels and infill development, primarily along Poway Road.

Currently over 90% of Poway's customers are residential, the majority of which are single-family residences. The entire service area population lives within the City of Poway, of which 6.0% of the population lives in poverty and the median household income is \$107,902 (U.S. Census Bureau, 2019). Moreover, 5.1% of the population speaks a language other than English at home and 46.5% of the population is either under 18 years old or 65 years and older (U.S. Census Bureau, 2019). Poway does not have any significant demographic factors that would affect its water management planning.

2.5. Climate

Poway's climate is typical of a Southern California coastal valley. Located approximately 10 miles east of the Pacific Ocean, Poway enjoys mild-to-moderate temperatures, marine breezes, and low humidity. The average temperature is 72 degrees, and the average annual rainfall is 9 to 14 inches. However, in 1998, 2004, 2010, and 2019, rainfall exceeded 24 inches due to heavy winter storms. The years 2012 through 2016 were particularly dry in California, but rainfall returned back to normal levels in 2017 and 2018 and surpassed normal levels in 2019, as evidenced in the below average rainfall data for the years 2014-2019 (see Error! Reference source not found.).

Table 2-3: Local Rainfall from 2014-2019 (Calendar Year Data)

	2014	2015	2016*	2017	2018	2019	2020
Total Rainfall (inches)	8.3	10.53	15.86	15.2	11.26	24.06	15.34

* 2016 data not available for Poway Valley Station. 2016 data was obtained from a nearby station (Poway 4.7NNW).
Source: National Oceanic & Atmospheric Administration (NOAA). Annual Climatological Summary for the Poway Valley Station, 2014-2019.

Variations in weather affect short-term water consumption and sales. Poway's WTP, reservoirs, distribution, and billing system are all designed to accommodate variations in weather-related demand. Average weather data on a month-by-month basis for the Poway area is provided below in **Table 2-4**.

Table 2-4: Average Monthly Climate Data for Poway Area

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Average Precipitation (inches)	2.8	2.7	2.3	0.95	0.37	0.08	0.04	0.07	0.19	0.52	1.36	1.87
Average Maximum Temperature (F)	67	66	67	72	74	81	86	86	84	79	72	67
Average Minimum Temperature (F)	41	43	44	48	54	56	60	62	58	50	43	39

Source: Western Regional Climate Center. 2016. Period of Record Monthly Climate Summary, Poway Valley, California, 1893-2016. Available: <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7111>

The borderline arid climate combined with the relative lack of rainfall compared to the rest of the country presents particular challenges to water supply planning, both short term and long term. The fact that the region experiences most of its rainfall within a relatively short amount of time also presents challenges to agencies in Southern California, such as Poway. The City typically experiences two very distinct water consumption patterns, one for the wet season and one for the dry season, when landscape irrigation needs are increased dramatically. Impacts to Poway’s system demands and supplies resulting from climate change are discussed in **Section 3.5 of Chapter 3: System Water Use** and **Section 5.10 of Chapter 5: System Supplies**, respectively.

2.6. Other Planning Efforts

In order to plan for supply reliability and infrastructure needs, the City of Poway has developed multiple planning documents. In addition to City-specific planning documents, the City of Poway is an active participant in regional water resource management planning activities. The following sections explain key planning documents that were used to develop this 2020 UWMP.

2007 Potable Water Master Plan Update

The purpose of the *2007 Potable Water Master Plan Update* was to calibrate the City’s hydraulic model and update the list of capital improvement programs (CIP) based on buildout land use and projected flows.

2012 Sanitary Sewer Master Plan

The *2012 Sanitary Sewer Master Plan* was used to develop the description of Poway’s sewer conveyance system and explain the preliminary assessment that was conducted on a potential satellite water reclamation plant in northern Poway.

2014 Water Distribution System Maintenance and Rehabilitation Assessment

The purpose of the *2014 Water Distribution System Maintenance and Rehabilitation Assessment* was to present and summarize the findings of the City’s assessment of its existing water distribution system infrastructure and develop a CIP that prioritizes rehabilitation and replacement needs.

2015 Regional Agricultural Water Management Plan

The purpose of the *2015 Regional Agricultural Water Management Plan* was to review the water supply in San Diego County and determine the reliable supply available for agricultural use in the region. This plan was prepared as required by SB X7-7 and was prepared in parallel to the numerous UWMP efforts in the region.

2019 San Diego Integrated Regional Water Management Plan

The *2019 San Diego Integrated Regional Water Management Plan* (IRWM Plan) was a regional effort to establish water management issues and priorities, facilitate integration and collaboration among stakeholders, and move the Region toward sustainable water resource management. The IRWM Plan included a detailed assessment of the region's vulnerability to climate change impacts as they relate to water resource management. The 2019 IRWM Plan was an update of the previous 2013 Plan.

2020 Lake Poway Watershed Sanitary Survey

The *2020 Lake Poway Watershed Sanitary Survey* was used to develop the description of water quality conditions at Lake Poway relative to the ability of the Berglund WTP to continue to provide customers with drinking water that meets all drinking water standards.

Chapter 3 System Water Use

Water demand projections provide the basis for planning for future supplies and infrastructure. This section describes the City’s historical, current, and projected water use. Historical water use and water treatment plant production records, combined with projections of population and land use, provide the basis for estimating future water demands for the City’s water service area.

Records of historical water treatment plant production, groundwater pumping, and metered customer use were obtained from the City’s Public Works Department. Water treatment plant production is the volume of surface water treated at the City’s WTP and conveyed in the distribution system. It includes all water delivered to residential, commercial, and industrial customers, but does not include recycled water. Recycled water is described in more detail in **Chapter 5: System Supplies**.

3.1. Water Use by Sector

Current water usage in the City of Poway includes primarily domestic use (serving residential and commercial users), with a small amount of industrial use and agricultural irrigation. Water consumption data for the City is separated into the following sectors: single-family residential; multi-family residential; commercial; industrial; institutional/governmental; landscape; agricultural and water losses. Up until mid-2015, Poway added supplemental potable water into the recycled water tank to meet peak recycled water demands, which was included in the landscape category. The City no longer supplements recycled water with potable water during peak demands but uses potable water as both a back-up for unexpected shutdowns of the City of San Diego’s recycled water system, or to improve water quality. Poway sells water to SDCWA, for transfer to Ramona Municipal Water District (Ramona MWD), as needed to meet their peak demands or during scheduled shutdowns. Water consumption in 2020 is summarized in **Table 3-1**.

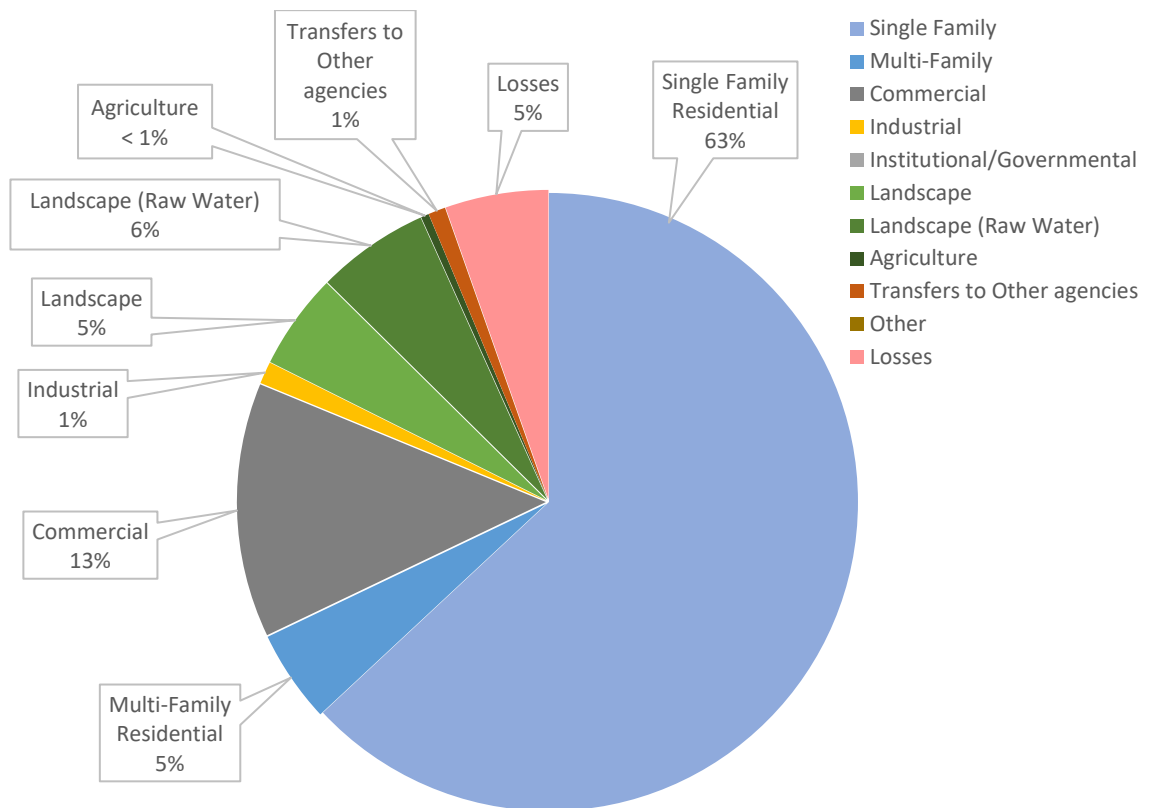
Table 3-1: Demands for Potable and Raw Water - Actual

DWR Table 4-1: Demands for Potable and Raw Water – Actual			
Use Type	2020 Actual		
	Additional Description	Level of Treatment When Delivered	Volume
Single Family		Drinking Water	5,533
Multi-Family		Drinking Water	425
Commercial ¹		Drinking Water	1,168
Industrial		Drinking Water	102
Landscape ²		Drinking Water	441
Landscape	Raw Water for Golf Course	Raw Water	516
Agricultural		Drinking Water	36
Water Losses		Drinking Water	474
Sales/Transfers/Exchanges to other Agencies	Sales to SDCWA (for Ramona MWD)	Drinking Water	79
TOTAL			8,774

NOTES: 1. Commercial use includes institutional use and special district facilities, such as schools, churches, and the hospital. 2. Landscape use includes metered irrigation, minus recycled water irrigation use, plus potable water added to supplement recycled water demands.

The City’s water use in fiscal year 2020 for potable and raw water was 8,774 AF (158 GPCD), which was approximately 4% more than its 2015 water use of 8,374 AF (160 GPCD). As part of the 2015 UWMP, the City projected that the water use in 2020 would be 10,697 AF, including raw water, system losses, and sales to other agencies. The actual 2020 demand was almost 18% less than the projected 2020 demand. The City’s initiatives to decrease water use to meet the 2020 GPCD target, continued conservation following the recent drought, and higher than average precipitation have been the biggest factors in the actual 2020 water use being less than the water use projected in the 2015 UWMP for 2020. Poway’s actual 2020 water use for potable and raw water is illustrated by sector in **Figure 3-1**.

Figure 3-1: 2020 Actual Water Use by Sector for Potable and Raw Water



The largest volume of the City’s water use is the residential sector. This sector mainly comprises single-family detached and attached residences and multi-family dwelling units, such as apartments and condominiums. The total residential demand, for single- and multi-family housing, accounted for 68% of the total water consumption in 2020. The commercial sector (which includes institutional water use for government and special district facilities, such as schools, churches, and the hospital) has the next highest volume of water use, with 13% of total water consumption in 2020. The landscape sector accounted for 11% of total water use in 2020, 6% of which consists of the raw water used to irrigate one commercial golf course (Maderas golf course). Industrial water use represented 1% of total water use in 2020. Water use in the agricultural sector, used for commercial agricultural irrigation, was less than 0.1% in 2020. Water losses represented less than 6% of water consumed in 2020 and is discussed in more detail in **Section 3.2**.

The City’s projected water demands, broken down by baseline demands and conservation, for 2025, 2030, 2035, 2040, and 2045 are shown in **Table 3-2**. The City’s projected water demands, broken down by sector, are shown for the same period in **Table 3-3**. The City utilized the demand forecast model prepared by SDCWA and Poway’s historical water use data to formulate the water use projections by use category for the 2025 through 2045 planning horizon. SDCWA used a statistical modeling approach to develop its long-range demand forecast; for the Municipal and Institutional (M&I) sector, this methodology was based on the U.S. Army Corps of Engineers Municipal and Industrial Needs (MAIN) model, which is used by many cities and water agencies throughout the United States. The Water Authority’s model (CWA-MAIN) was customized to reflect the San Diego region’s unique parameters and relates historical water demand patterns to variables such as household income, consumer response to the price of water, and weather, to predict future M&I water demands. The CWA-MAIN model utilizes data from various sources including SANDAG, its member agencies, and the National Aeronautics and Space Administration (NASA). Pursuant to a 1992 Memorandum of Agreement (MOA) between SDCWA and SANDAG, the SDCWA uses SANDAG’s regional growth forecast to project consumptive water demands. SANDAG’s regional growth forecast is based on general plans and policies of local land use jurisdictions and is discussed in more detail in **Chapter 2: System Description**. The Water Authority’s forecasted water demand for the agricultural sector was developed through a cooperative effort between SDCWA staff, its member agencies, SANDAG, and County Department of Agricultural Weights and Measures. The Water Authority’s demand projections also account for conservation, which represents “passive” water savings (code-based) and “active” water savings (implementation of demand management programs). The conservation projections were then deducted from the baseline demand forecast (M&I plus agriculture) to generate long-term water demand projections for the region and each member agency.

The City utilized SDCWA’s projections from Table 2-8 of the SDCWA’s Draft 2020 UWMP (March 2021) as its total potable demands from 2025 through 2045 and allocated the total potable use across various use sectors based on its historical demand data. For example, between 2005 and 2020, single family residences made up approximately 72% of total potable demand (not including agriculture, transfers to other agencies, or losses); therefore, after accounting for agriculture, transfers, and losses consistent with historical averages, single family use between 2025 and 2045 was projected out as 72% of the remaining potable demand.

Table 3-2: Projected Baseline Demands and Conservation Forecast for Potable, Raw, and Recycled Water

	Projected Water Use				
	2025	2030	2035	2040	2045
Baseline Demands (Without Conservation) ¹	11,936	12,231	12,566	12,832	13,086
Active/Passive Conservation	1,399	1,437	1,527	1,665	1,590
Total Water Demands ²	10,537	10,794	11,039	11,167	11,496

¹ Baseline demands based on SDCWA’s forecast, including recycled water (450 AFY), 219 GPCD on average between 2025 and 2045 planning horizon.

² Total water demands based on Table 2-8 of SDCWA’s Public Review Draft, including recycled water (450 AFY) and conservation, 193 GPCD on average between 2025 and 2045 planning horizon.

Table 3-3: Projected Demands for Potable and Raw Water

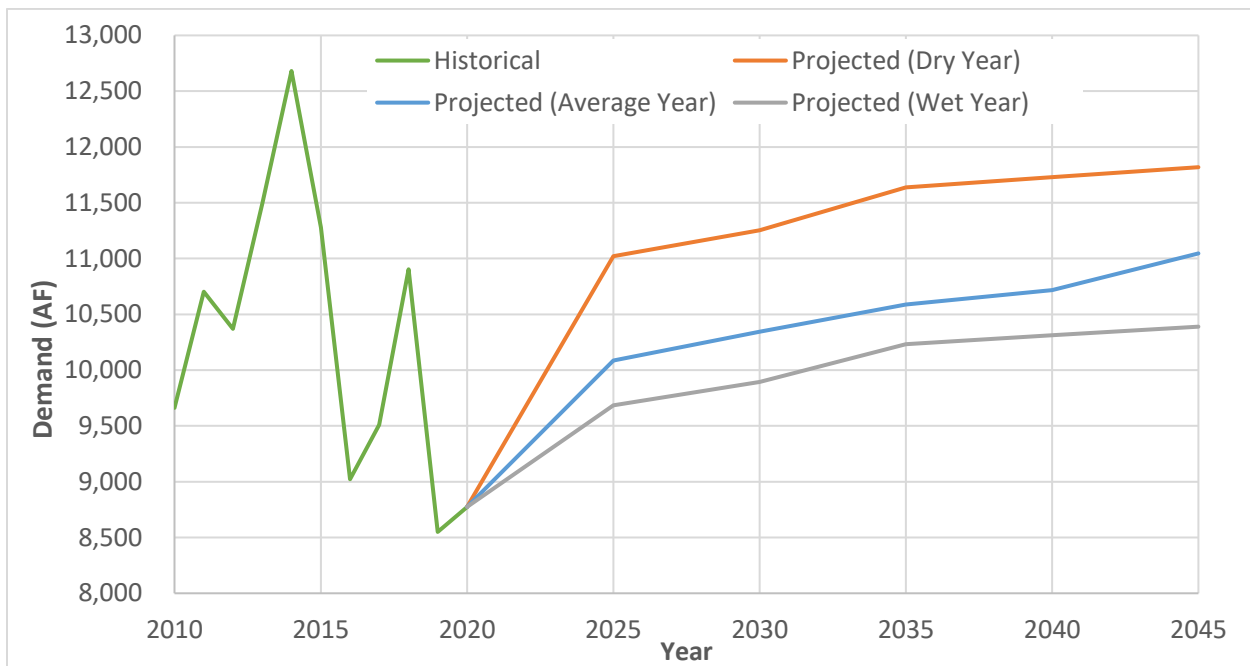
DWR Table 4-2: Demands for Potable and Raw Water - Projected						
Use Type	Additional Description	Projected Water Use				
		2025	2030	2035	2040	2045
Single Family		6,597	6,769	6,935	7,021	7,241
Multi-Family		474	487	499	505	521
Commercial		1,084	1,112	1,139	1,153	1,189
Industrial		112	115	118	119	123
Landscape		447	459	470	476	491
Landscape	Raw Water Golf Course Use	469	482	493	499	515
Agricultural irrigation		42	41	40	40	40
Losses ¹		676	693	709	718	740
Sales/Transfers/Exchanges to other agencies		186	186	186	186	186
TOTAL²		10,087	10,344	10,589	10,717	11,046

1 Water losses were assumed to increase proportionally as 6.7% of total potable and raw water demand based on the City's 5-year average water loss.

2 Total potable demand projected by SDCWA (refer to Table 2-8 of the SDCWA 2020 UWMP).

The total projected demands presented in **Table 3-3** are of Poway's water use during a typical average year with normal precipitation. However, future water use in Poway is anticipated to be variable depending on the actual conditions throughout the year. **Figure 3-2** shows Poway's historical demands and the estimated range of demand projections based on the type of year.

Figure 3-2: Historical and Projected Potable and Raw Water Demands



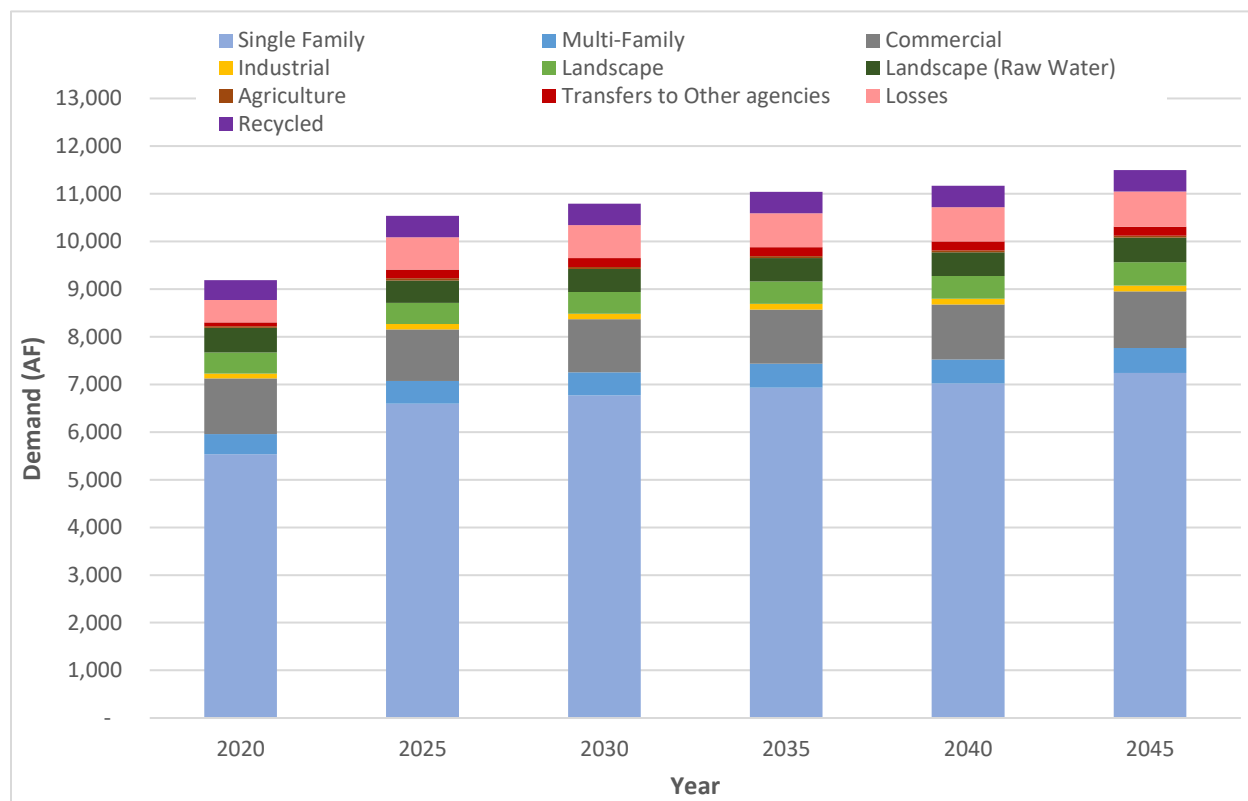
Total water demands in the City of Poway, combining potable, raw water, and recycled water uses, for 2020 and projected forward to 2045 are presented in **Table ES-1** and **Figure 3-3**. The 2020 actual recycled water demand and the 2025 through 2045 projections are explained in more detail in **Chapter 5: System Supplies**.

Table 3-4: Total Current and Projected Water Demands

DWR Table 4-3: Total Water Demands						
	2020	2025	2030	2035	2040	2045
Potable and Raw Water	8,774	10,087	10,344	10,589	10,717	11,046
Recycled Water Demands ¹	411	450	450	450	450	450
Total Water Demands	9,185	10,537	10,794	11,039	11,167	11,496

¹ Recycled water purchases based on future demand projections and contract with the City of San Diego.

Figure 3-3: Total Current and Projected Water Demands



3.2. Distribution System Water Losses

The City diligently monitors and controls water system losses. The City tracks “authorized unmetered” uses, such as firefighter training and firefighting; water, sewer, and stormwater system maintenance; recycled system makeup water; and water quality and other testing. The City also tracks “metered” flows for water quality maintenance and analysis, and the testing and disinfection associated with the installation of new water mains. To calculate “non-revenue” water, the City compares the quantity of water delivered to the system from the WTP clearwell to the volume of water sold to its customers. Authorized unmetered flows (e.g., water for firefighting training and

system flushing) are not considered as water losses according to the AWWA water loss audits, included as **Appendix D**. However, unmetered and unaccounted for flows (e.g., main leaks/breaks), referred to as “real losses” in the Guidebook, and apparent losses are accounted for in **Table 3-5** for fiscal year 2020.

Table 3-5: Water Loss Audit Reporting

DWR Table 4-4: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss
01/2015	668
01/2016	528
07/2017	591
07/2018	722
07/2019	474

NOTES: Does not include authorized unmetered flows.

In 2020, estimated real losses, most likely as system leakage and evaporation, were approximately 5.5% of total potable and raw water supplied, which is considered very good in the water industry. According to a 2013 publication from the Environmental Protection Agency (EPA), titled *Water Audits and Water Loss Control for Public Water Systems*, average water losses in public water systems were approximately 16% of total water use. Water losses from 2015 through 2020 made up approximately 6.7% of Poway’s total potable and raw water demand on average. Water loss data from the first half of 2017 (January 1 through June 30) were not available because the City changed its reporting from calendar year to fiscal year at the beginning of 2017 and were therefore not accounted for in the average water loss calculation.

3.3. Water Savings from Codes, Standards, Ordinances, or Transportation and Land Use Plans

Water savings from codes, standards, and ordinances, known as passive savings, were considered in the demand projections, as well as water demand from lower income residential demands. The projections assume that savings and lower income residential demands will increase proportionally with demand increases.

Passive conservation is achieved through state and local efficiency codes. Efficiency codes that require efficient fixtures and appliances, grant funding to promote water conservation, residential weather-based irrigation controllers, and efficient landscape practices are expected to achieve additional water use reductions in the City’s water service area.

In addition to passive conservation achieved through code compliance, the City also supports active conservation by its customers. The City collaborates closely with its wholesaler, SDCWA, to encourage conservation and sustainable water use through ongoing customer outreach. SDCWA offers extensive resources to its wholesale service area customers through its Conservation Program. More detail about the SDCWA conservation programs and the City’s conservation efforts are described in **Chapter 8: Demand Management Measures**.

The City also maintains a water conservation page (<http://poway.org/332/Water-Conservation>) that provides water conservation resources specific to Poway. The site includes water conservation information and a link to the Water Conservation Plan in the Poway Municipal Code.

Table 3-6: Inclusion in Water Use Projections

DWR Table 4-5: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections?	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.	Sections 3.3 and 3.4
Are Lower Income Residential Demands Included in Projections?	Yes

3.4. Estimated Demands for Lower Income Households

CWC §10631.1(a) requires suppliers to estimate projected water use for single-family and multi-family residential housing needed for lower income households, as identified in the Housing Element of the General Plan for the service area of the supplier. It does not require quantification of current water use by lower income households. According to Table 2-11 of the City's *Housing Element Update 2013-2020*, an estimated 22% of households in the City are lower-income, as defined as having a household income below 80% of the area median household income.

In 2020, an estimated 560 low-income households in Poway used roughly 86 AF of water which translated to a rate of 0.15 AFY per household. The City has estimated the number of additional low-income housing units between 2020 and 2045 as 255 units by multiplying the increase in housing units (1,159 as projected by SANDAG and shown in **Table 2-2**) by 22% based on the City's current percentage of low-income housing. Low-income demands were estimated to be approximately 145 AF in 2045 by multiplying the total projected number of housing units (560 plus 255) by 55 gallons per capita per day by 2.88 persons per household (projected population divided by projected number of housing units in 2045 as shown in **Table 2-1** and **Table 2-2**).

3.5. Climate Change

Poway's water use shows significant seasonality. For example, in fiscal year 2020 the maximum monthly water use dropped from 1,417 AF in October 2019 and to 321 AF in January 2020, a nearly 350% difference between the maximum and minimum month. The City's maximum month water demands, particularly for landscape irrigation and industrial purposes, are anticipated to increase as a result of more frequent, longer, and more extreme heat waves; increased air temperatures; increased atmospheric carbon dioxide levels; changes in precipitation, winds, humidity, atmospheric aerosol and ozone levels; and population growth. In addition, in response to the current drought, much of Poway's water supply has been hardened – for example, with water efficient home appliances and turf replacements – making water demand less elastic and the City more vulnerable to climate change.

Chapter 4 Water Use Baselines and Targets

Senate Bill X7-7 (SB X7-7), also known as the Water Conservation Act of 2009, requires that all urban retail water suppliers reduce their per capita urban water use by at least 20% by the year 2020. SB X7-7 has been a driver of suppliers' efforts to establish, promote, and prioritize water conservation programs throughout California to achieve demand reductions.

This chapter describes the City's compliance and achievement with the SB X7-7. Compliance with the SB X7-7 legislation is assessed through the calculation of three primary figures, in terms of gallons per capita per day (GPCD), to determine compliance:

1. **Baseline Water Use (Baseline Demand):** Supplier's baseline per capita demand that SB X7-7 compliance is measured from, based on 10-year and 5-year baseline periods.
2. **Interim Water Use Target (Interim Target):** Mid-way per capita demand between the Baseline Demand and the 2020 Water Use Target that was used as an interim target to evaluate compliance with SB X7-7 in the 2015 UWMPs and track a supplier's progress towards achieving its 2020 Target. The Interim Target was required to be met by 2015, as documented in the 2015 UWMP.
3. **2020 Water Use Target (2020 Target):** Supplier's target water use that would result in a 20% reduction in total per capita urban water use by the year 2020.

This chapter presents the City's baselines and targets, which were calculated as part of its 2010 UWMP and updated in its 2015 UWMP and compares the City's actual 2020 water use with its 2020 Target to demonstrate compliance with SB X7-7. The City's actual water use in 2020 was 167 GPCD (including recycled water), which is approximately 21% less than its 2020 Target of 210 GPCD. The City's SB X7-7 Verification Form tables were completed as part of its 2015 UWMP. Some of those tables are included in this chapter and a complete set of the tables can be found in **Appendix E**. The Compliance Form tables, which were completed as part of this 2020 UWMP, are also provided in **Appendix E**.

4.1. Summary of 2015 UWMP Analysis

As part of the 2015 UWMP, the Guidebook required that suppliers re-calculate their baseline populations using final 2010 U.S. Census data because the complete 2010 U.S. Census data was not available until 2012, after the 2010 UWMPs were finalized.

Therefore, the difference between the population values reported in the 2010 UWMP and the 2015 UWMP are due to refinement of the 2010 U.S. Census numbers. The City's population essentially remained static between 2000 and 2010, rather than growing as SANDAG had projected. Limited population growth throughout the decade was likely due to the recession that started in early 2008 and substantially reduced employment opportunities throughout the San Diego region.

Updating the 2010 UWMP population numbers as part of the 2015 UWMP changed the SB X7-7 baseline and targets from the targets that were previously developed and reported in the 2010 UWMP. The SB X7-7 verification tables completed in 2015 corrected the City's baseline and target per capita water use to reflect the updated population numbers.

4.2. Baseline Periods

The Guidebook requires that a water supplier calculate its baseline period as “a 10- to 15-year continuous period ending between December 31, 2004, and December 31, 2010.” The City utilized 1998 to 2008 as its 10-year baseline period and 2003 to 2007 as its 5-year baseline period.

4.3. Service Area Population

In order to calculate per capita water use, water suppliers need to estimate their service area populations. The Guidebook outlines several methods that a water supplier can use to estimate its service area population including population data from the Department of Finance (DOF), Persons-per-Connection Method, DWR Population Tool, and Other methods that require review and approval from the DWR.

There is a portion of Poway (East Poway) that is not served by the water system. While this unconnected portion is large in land area (about 29% of the City’s total area), the unconnected population is relatively small (less than 1% of the City’s total population). Since Poway’s service area does not correspond to a Census designated place (CDP), the City had difficulty obtaining an accurate estimate of its service area population using the DWR methods discussed above. Therefore, the City sought pre-approval for an alternative method to estimate population per DWR’s recommendations. DWR granted Poway approval for their population projection methodology on April 13, 2016.

To estimate the historical population within Poway’s Service Area, the population of East Poway was estimated and then subtracted from the 2010 U.S. Census data for the City of Poway. The City estimated that the average Equivalent Dwelling Unit (EDU) in Poway as 3.1 persons per household, based on the 10-year average from 2005 through 2015. The number of Non-Service Area housing units (provided by the City’s Planning Department) was then multiplied by 3.1 persons per household based on Poway’s EDUs, which resulted in the total number of persons that are located within the City of Poway but outside of Poway’s Water Service Area (East Poway population). Finally, the East Poway population was subtracted from the City of Poway’s Census-reported population.

To calculate Poway’s 2020 per capita water use for this UWMP, the City’s 2020 service area population was determined using an approach similar to the method described above. The 2020 Department of Finance (DOF) population estimate for the City was adjusted to exclude the East Poway population. This DOF adjusted population method is equivalent to the method that the City used in its 2015 UWMP to calculate its 2015 service area population and is the method that DWR approved on April 13, 2016. **Table 4-1** presents the populations used for the daily per capita water use calculations.

Table 4-1: Population Used for SB X7-7 Targets

SB X7-7 Table 3: Service Area Population		
Year	Population	Notes
10 to 15 Year Baseline Population		
Year 1	1999	From City population data – adjusted Census data (approved by DWR)
Year 2	2000	
Year 3	2001	
Year 4	2002	
Year 5	2003	
Year 6	2004	
Year 7	2005	

SB X7-7 Table 3: Service Area Population			
Year		Population	Notes
Year 8	2006	49,857	
Year 9	2007	50,144	
Year 10	2008	50,483	
5 Year Baseline Population			From City population data – adjusted Census data (approved by DWR)
Year 1	2003	49,403	
Year 2	2004	49,801	
Year 3	2005	49,991	
Year 4	2006	49,857	
Year 5	2007	50,144	
2020 Compliance Year Population			From City population data – adjusted DOF data (approved by DWR)
2020		49,062	

4.4. Gross Water Use

The City has calculated its gross water use to determine its per capita water use based on service area population. CWC §10608.12 defines “gross water use” as “the total volume of water, whether treated or untreated, entering the distribution system of an urban water retailer” and notes the following deductions: recycled water delivered within the supplier’s service area, water placed into long term storage, water conveyed for use by another supplier, water delivered for agricultural uses (with some exceptions), and process water (only if the supplier has a substantial percentage of industrial water use in its service area).

The City records its water use by sector monthly for the following use categories: single family residential, multi-family residential, commercial, landscape (including raw water), industrial, and agriculture. The majority of water use in the City is associated with residential use (both single and multi-family), accounting for roughly 70% of total demand. The commercial sector is the next major user of water, which accounts for about 13% of the gross water use. Per DWR’s “2016 Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use” (Methodologies), the City is not eligible for deductions for indirect recycled water use (though it does purchase about 400-500 AFY of recycled water from the City of San Diego for landscape irrigation) nor is its process (or industrial) water use great enough (less than 1% of gross use) to qualify for a deduction. The City also does not qualify for deductions given to suppliers that have very low non-industrial water use and/or have their service areas located within a disadvantaged community. However, the City was allowed to deduct agricultural water use (roughly 350 AFY over the baseline period) from its gross water use calculation. **Table 4-2** summarizes the City’s annual gross water use for the baseline period years and compliance years. The City elected not to apply the optional meter error adjustment to its gross water use.

Throughout its baseline period, Poway’s year-to-year water use fluctuated significantly with an underlying gradual rise in water consumption. Although the breakdown of the City’s 2020 water use (percentage per consumer type) was fairly consistent with that of the baseline period years, gross water usage dropped significantly. This decline in water use can be attributed to drought-related water use reductions.

Table 4-2: Annual Gross Water Use for SB X7-7 Targets (AFY)

SB X7-7 Table 4: Annual Gross Water Use								
	Baseline Year	Volume Into Distribution System	Deductions				Annual Gross Water Use	
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water	Water Delivered for Agricultural Use		Process Water
10 to 15 Year Baseline - Gross Water Use								
Year 1	1999	14,358	0	0	0	618	0	13,740
Year 2	2000	15,537	0	0	0	550	0	14,987
Year 3	2001	13,977	0	0	0	420	0	13,556
Year 4	2002	15,265	0	0	0	59	0	15,206
Year 5	2003	14,411	0	0	0	376	0	14,035
Year 6	2004	15,470	0	0	0	57	0	15,413
Year 7	2005	14,172	0	0	0	28	0	14,145
Year 8	2006	15,873	0	0	0	764	0	15,109
Year 9	2007	15,679	0	0	0	586	0	15,093
Year 10	2008	14,150	0	0	0	194	0	13,956
10 - 15 year baseline average gross water use								14,524
5 Year Baseline - Gross Water Use								
Year 1	2003	14,411	0	0	0	376	0	14,035
Year 2	2004	15,470	0	0	0	57	0	15,413
Year 3	2005	14,172	0	0	0	28	0	14,145
Year 4	2006	15,873	0	0	0	764	0	15,109
Year 5	2007	15,679	0	0	0	586	0	15,093
5 year baseline average gross water use								14,759
2020 Compliance Year - Gross Water Use								
	2020	9,185	0	0	0	36	0	9,149

4.5. Baseline and Target Daily Per Capita Water Use

To assess compliance with the City's 2020 Target, the daily per capita water use in each year of the baseline period and the current compliance year (2020) were calculated. The City's annual GPCD was calculated by dividing the annual gross water use by the annual service area population. Annual GPCDs for the 10-year and 5-year baseline periods were averaged to determine the 10-year and 5-year average baseline GPCDs, respectively. Poway's 10-year baseline water use was determined to be 263 GPCD and its 5-year baseline water use was calculated as 264 GPCD, as shown in **Table 4-3**.

Table 4-3: GPCD Baseline

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year		Service Area Population	Annual Gross Water Use (AFY)	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1999	47,828	13,740	256
Year 2	2000	48,724	14,987	275
Year 3	2001	48,761	13,556	248
Year 4	2002	48,803	15,206	278
Year 5	2003	49,403	14,035	254
Year 6	2004	49,801	15,413	276
Year 7	2005	49,991	14,145	253
Year 8	2006	49,857	15,109	271
Year 9	2007	50,144	15,093	269
Year 10	2008	50,483	13,956	247
10-15 Year Average Baseline GPCD				263
5 Year Baseline GPCD				
Year 1	2003	49,403	14,035	254
Year 2	2004	49,801	15,413	276
Year 3	2005	49,991	14,145	253
Year 4	2006	49,857	15,109	271
Year 5	2007	50,144	15,093	269
5 Year Average Baseline GPCD				264
2020 Compliance Year GPCD				
2020		49,062	9,149	167

Water suppliers can calculate their 2020 Targets using any of the four methods listed in the Methodologies. The District calculated its 2020 Target as part of its 2015 UWMP using Method 1, which is a 20% reduction from the 10-year baseline per capita water use value (210 GPCD). The 2020 Target was confirmed to be less than 95% of the City’s 5-year baseline water use in accordance with CWC requirements. The City’s baselines and 2020 Target are summarized in **Table 4-4**.

Table 4-4: SB X7-7 Baselines and Targets

DWR Table 5-1: Baselines and Targets Summary				
Baseline Period	Start Year	End Year	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	1999	2008	263	210
5 Year	2003	2007	264	

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

4.6. 2020 Compliance Daily per Capita Water Use

In accordance with CWC §10608.12, Poway is required to determine whether it has met its daily water use target for the final year of the reporting period of this Plan, which is the year 2020. As presented above, the City’s 2020 daily per capita water use was calculated from the adjusted 2020 DOF population values and its gross water usage. The City’s 2020 daily per capita water use (167 GPCD) is below its 2020 Target and therefore no usage adjustments (such as weather normalization or economic adjustments) were conducted. Poway’s per capita water use for 2020 is well below the City’s 2020 Target (roughly 21% lower). Although the City’s water use is still rebounding back to normal levels since the drought ended in 2017, the City’s conservation program, along with the other measures it has taken to reduce water use during the drought, are expected to help keep daily per capita water use well below the 2020 Target of 210 GPCD. A summary of the City’s compliance with its 2020 Target is presented in **Table 4-5**.

Table 4-5: 2020 GPCD Compliance

Table 5-2: 2020 Compliance *							
Actual 2020 GPCD	Optional Adjustments to 2020 GPCD					2020 Confirmed Target GPCD	Did Supplier Achieve Targeted Reduction for 2020? Y/N
	Extraordinary Events	Economic Adjustment	Weather Normalization	TOTAL Adjustments	Adjusted 2020 GPCD		
167	0	0	0	0	167	210	Yes

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

Chapter 5 System Supplies

This chapter identifies and discusses the existing and planned water supply sources for the City of Poway, including current and planned quantities of water. Poway purchases about 99% of its water supply from SDCWA. All of the water the City purchases from SDCWA is raw water, which is treated at the WTP and distributed to customers through the City's potable water system. The rest of Poway's supply comes from two sources, raw water from Lake Poway and recycled water from the City of San Diego. Lake Poway captures a small amount of rain and surface runoff during rain events. Because the quantity of Lake Poway runoff is relatively minimal, not reliable, and offset by naturally occurring evaporation and seepage, it is not considered a planned water supply source. The City of Poway also purchases a small quantity of recycled water (400-500 AFY) from the City of San Diego for irrigation in the Poway Business Park.

SDCWA's Draft 2020 UWMP indicates that there will be adequate water supplies to meet demand in the SDCWA service area through 2045 during normal water years, single dry years, and each year of a multiple dry year period (refer to **Chapter 6: Water Supply Reliability** of this UWMP). SDCWA is also exploring and developing potential additional supplies including expanding seawater desalination, construction of storage facilities, and acquiring out-of-region supplies. The status of these alternative sources of supply is detailed in SDCWA's 2020 UWMP.

5.1. Purchased or Imported Water

SDCWA's 2020 UWMP reports it will have enough raw water to meet the projected needs of its member agencies, including the City. The SDCWA has three primary sources of supplies including the State Water Project (SWP) supplies purchased from the Metropolitan Water District of Southern California (MWD), Colorado River Aqueduct (CRA) supplies that are from long-term transfer agreements and canal lining projects, and local supplies. SWP supplies are entirely purchased from MWD, of which the SDCWA is a member agency. In recent years, between 20% and 30% of SDCWA's supplies have come from the SWP, which supplies water through the Sacramento-San Joaquin Bay Delta (Bay-Delta). The Bay-Delta is a large network of channels and islands that collect runoff from the Sierra Nevada; this water is conveyed to customers through California, including MWD.

On average, more than half of the SDCWA's supplies are sourced from the Colorado River. Colorado River supplies are either purchased from the MWD or supplied directly to the SDCWA through a long-term water conservation and transfer agreement (known as the Quantification Settlement Agreement or QSA) and through two canal-lining agreements. Under the QSA, SDCWA will receive 205,000 AF in 2021, 202,500 AF in 2022, and 200,000 AFY starting in 2023. The Coachella and All-American Canal Lining Projects were constructed as part of a joint conservation effort between the Imperial Irrigation District (IID), SDCWA, the Department of Water Resources (DWR), and the Bureau of Reclamation, and they currently provide 77,700 acre-feet per year (AFY) of water to the San Diego region.

SDCWA also began purchasing water from the Carlsbad Desalination Project in 2015, which is discussed in more detail in **Section 5.6**. More information on sources, new supply projects, and their reliability can be found in SDCWA's and MWD's 2020 UWMPs.

To date, it has not made economic sense for Poway to develop additional supply projects for potable water, beyond the existing raw water treatment of SDCWA imported supplies; however, Poway has supported a potential regional future supply project that could supply up to 2,000 AFY of potable reuse water to the City by the year 2035, as discussed in **Section 5.8**.

Lester J. Berglund Water Treatment Plant

The City operates the WTP, a conventional water filtration plant, transmission, and storage system infrastructure with a peak design capacity of 24 MGD. The City has the capability to provide some treated water to SDCWA in the event of a shutdown of SDCWA's treated water aqueduct. The maximum amount of water that Poway could deliver to SDCWA would depend on the flow at the WTP. In most cases, Poway would be able to deliver up to 4 MGD of treated water for approximately one to two months through an emergency use agreement with SDCWA.

The raw water delivered to Poway from SDCWA has historically been a blend of 60% Colorado River water and 40% SWP water. This blend mixture dilutes the high salt concentration of the Colorado River water and high nutrient content of the SWP water. However, the quality of raw water purchased from SDCWA has changed significantly since 2010 as discussed in **Chapter 6: Water Supply Reliability** of this UWMP. These changes are noted as they impact the operation of the WTP. Once the raw water supplied by SDCWA is treated at the WTP, the effluent product water complies with Federal and State water quality standards. As reported in the City's *2020 Lake Poway Watershed Sanitary Survey*, the WTP influent consisted of 85% - 93% raw imported water purchased from SDCWA between 2015 and 2019 while the remainder consisted of runoff from Lake Poway.

The City has also experienced water quality challenges due to low flows in water pipes and lack of "turnover" in storage reservoirs, both primarily due to substantial reductions in water use, especially during the drought. City system operators have worked to modify operations to maintain high-quality water during periods of low usage. The City completed distribution system evaluation with a calibrated hydraulic model in 2019 to gain further insight into possible problems and develop solutions. The City used the hydraulic model to assess the impact of dead ends on the water distribution system and the frequency of flushing required to maintain water quality. SDCWA reports no anticipated reductions in supply due to water quality.

Due to Poway's varied topography, distribution service zones range in elevation between 420 feet and 1,420 feet above sea level. This elevation range requires pumping and pressure regulating zones to provide average service pressures of approximately 80 pounds per square inch to pump water up to higher elevations. There are 18 pressure zones and about 294 miles of water mains (greater than four-inch diameter) and distribution pipelines serving approximately 14,195 connections. All water service connections are metered.

5.2. Groundwater

The City of Poway's current supply portfolio does not include any groundwater supplies. The geology of Poway does not include any large alluvial aquifers with the coarse-grained materials that support efficient groundwater extraction and recharge. Poway's aquifers are small, located along creeks and streams, and contain more fine-grained materials. Groundwater is also available in fractured bedrock, although it is difficult to locate and normally requires deep wells.

For these reasons, groundwater is not a significant supply for Poway, and it is not used in the community water treatment and distribution system. Private wells are constructed by individual homeowners and are not subject to monitoring by the City. Private wells are used for potable supply in some areas that are not served by the community water system and in other areas as a secondary source for domestic use and landscape/crop irrigation. The absence of community water distribution infrastructure in undeveloped areas, combined with minimal groundwater supply, prevents dense development in these areas. The City closely monitors and regulates all land use applications in these areas but is not required to monitor the volume of water pumped.

5.3. Surface Water

The City of Poway collects a limited amount of surface water via runoff into Lake Poway from local precipitation; however, local runoff is minor and is therefore not included in the City's supply portfolio. The City primarily utilizes Lake Poway for raw water storage. Poway is located within a regional drainage system of westward-tending streams, which convey surface water flows toward the Pacific Ocean. There are two major watersheds in Poway that collect water from the northern and southern portions of the City. Surface water from the northern portion of Poway flows into the San Dieguito River and Lake Hodges, while water from the southern areas of the City flows into Los Peñasquitos Creek. These water bodies not only store and carry floodwaters, but also serve as natural recreational and open space linkages within the community.

Poway has an arid climate with an average annual rainfall between 9 and 14 inches. Runoff is intermittent, ranging from several years of little or no runoff to wet years with much higher runoff due to flooding during major storm events. With this type of extremely variable rainfall/runoff pattern, development of surface water supplies is generally not cost effective. Construction of dams to store surface water supplies is very expensive and has several other drawbacks such as: the environmental permitting process is lengthy and difficult, infrastructure must be built to convey water to the treatment plant, which is expensive, and annual yield is low. In addition, historic water rights agreements award rights to most of the larger watersheds in the vicinity of Poway to the City of San Diego, which makes it difficult for the City to secure water rights. A further impediment to surface water supply development is the need to maintain low flows for riparian biological communities.

Storage Reservoirs and Lake Poway

The City of Poway has 18 drinking water storage tank reservoirs ranging in size from 200,000 gallons to 2.5 MG, plus a 10 MG clearwell. Lake Poway holds raw water imported from SDCWA and is the City's largest reservoir. It was originally built by the Poway Municipal Water District in 1971-1972 and serves the City of Poway as a raw water storage reservoir and regional park and recreation facility. Lake Poway has a 160-foot-high earthen dam that stores a maximum of 3,300 AF (about 1,075 MG) of water in 60 surface acres. Lake Poway is normally maintained at a water surface elevation between 930 and 933 feet, which is a few feet below the spillway. The Lake level fluctuates around the 933-foot elevation mark throughout the year, except during summer months when it is drawn down for operational purposes. It is estimated that depending on the volume of water in the Lake, the season, and conservation levels, the Lake would have adequate water supplies for the City for up to six months.

Minimal surface runoff occurs in the 1,200-acre watershed upstream of Lake Poway and the City of San Diego has water rights in this watershed. The WTP typically only treats water from Lake Poway for a period of four to six consecutive weeks beginning in early June and treats raw imported water from the SDCWA for the remainder of the year. By agreement, 50% of seasonal stream flow into Lake Poway must be passed on to the City of San Diego unless the City of San Diego's Lake Hodges reservoir spills. Lake Poway's ecologic conditions are monitored daily by WTP staff to assure maximum water quality.



Lake Poway, utilized for raw water storage, has adequate emergency water supplies for the City for up to six months.

In May 2010, the City of Poway identified the presence of Quagga Mussels in Lake Poway. Quagga Mussels are a hindrance to water facilities throughout the western United States. Some of MWD's and SDCWA's facilities have also been impacted by Quagga Mussels; however, with implementation of eradication and control strategies, there has been no reduction in water deliveries. While Quagga Mussels do not negatively impact water quality like some other contaminants, they are a highly-invasive species, meaning they are capable of spreading rapidly and prolifically. Their presence requires careful attention, including ongoing testing procedures, annual reporting on population changes to the Department of Fish and Wildlife, and implementation of eradication and control strategies, because they can be highly destructive to water system infrastructure. In the future, more significant operational adjustments to mitigate Quagga Mussels may be required.

5.4. Stormwater

The City of Poway currently does not have any stormwater capture and reuse systems, nor does it plan to develop any within the planning horizon of this UWMP.

5.5. Wastewater and Recycled Water

The City of Poway provides sewer collection service within its city limits, predominantly serving the western half of Poway. In general, developments in the eastern half of Poway are served by on-site septic systems. Additionally, Poway provides pass-through sewer collection service to some neighborhoods located within City of San Diego boundaries.

The *2012 Sanitary Sewer Master Plan* (City of Poway, 2012) conducted an evaluation of possible opportunities and economic feasibility of developing additional sources of reclaimed water to create a local recycled water supply for irrigation.

Recycled Water Coordination

Poway coordinated this UWMP with the City of San Diego, its current supplier of recycled water. At this time, Poway does not have any plans to expand its recycled water portfolio.

Wastewater Collection and Treatment Systems

Poway owns, operates, and maintains 186 miles of collection system piping (gravity mains), five sewage lift stations, and the Oak Knoll Siphon, which has three barrels (City of Poway, 2012). The collection system piping is a combination of vitrified clay and plastic (PVC) pipe. Each pump station is designed to lift sewage from a low-lying service area to a higher-elevation gravity system connection through a force main. Sewage lift stations are monitored by City staff 24-hours per day, 7-days per week with a computer SCADA system that tracks flow, wet-well levels, and other operating data. In addition, the City maintains approximately 4,100 manholes.

Poway's wastewater collection system services developed parcels within the City's boundary as well as parcels located in several neighborhoods within the City of San Diego. Approximately 90% of Poway's developed parcels are connected to the sewer system, with the remaining parcels either vacant or on septic systems. Approximately 25% of the City's wastewater flows are received from City of San Diego neighborhoods located to the south and west of Poway. The *2012 Sanitary Sewer Master Plan* addresses future impacts of existing private septic system connections to the sanitary sewer system.

Poway does not own or operate a wastewater treatment facility. The majority of Poway's wastewater is treated by the City of San Diego's Metropolitan Wastewater System (Metro System) under a comprehensive Regional Wastewater Disposal Agreement and is metered at Meter PO-2 along Poway Road. Most of Poway's sewage leaves the City to the southwest along Poway Road through the Peñasquitos Trunk Sewer. The Peñasquitos Trunk Sewer conveys the wastewater to the City of San Diego's North City Water Reclamation Plant (NCWRP). At the NCWRP, wastewater that is not recycled is discharged to the City of San Diego's Point Loma Wastewater Treatment Plant (Point Loma WWTP). Poway's conveyance capacity within the Metro System is 5.05 MGD (City of Poway, 2019). Two small northwestern areas of Poway (approximately 1% of Poway's total sanitary sewer flow) send wastewater flows northwesterly through the East Bernardo Trunk Sewer to the Hale Avenue Resource Recovery Facility (HARRF) in Escondido (City of Poway, 2018). Poway has 5.9 MGD of contracted treatment capacity within the Metro System, and 0.05 MGD of treatment capacity at the HARRF.

Table 5-1 provides detailed information about the City's wastewater flows. At the NCWRP, a portion of Poway's wastewater is treated to tertiary standards for recycling. Depending on the demands placed on the City of San Diego's recycled distribution system, up to 100% of Poway's wastewater can be treated to become recycled water. The portion of Poway's wastewater that is not treated for recycling is diverted to the Point Loma WWTP where it is treated to secondary standards and discharged to the Pacific Ocean. The small remainder of Poway's wastewater flows that are not treated at NCWRP are sent to the City of Escondido's HARRF, where a portion of the wastewater is treated to become recycled water. **Table 5-2** provides information regarding the treatment of Poway's wastewater at NCWRP and the volume of water returned to the City (as recycled water) for irrigation use.

Table 5-1: Wastewater Collected Within Service Area in 2020

DWR Table 6-2: Wastewater Collected Within Service Area in 2020						
n/a	Percentage of 2020 service area covered by wastewater collection system <i>(optional)</i>					
n/a	Percentage of 2020 service area population covered by wastewater collection system <i>(optional)</i>					
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2020	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area?	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i>
City of Poway	Metered	3,195	San Diego Metropolitan Wastewater Department	North City Water Reclamation Plant (NCWRP)	No	
City of Poway	Estimated	64	City of Escondido	Hale Avenue Resource Recovery Facility (HARRF)	No	
Total Wastewater Collected from Service Area in 2020:		3,259				

Table 5-2: Wastewater Treatment and Discharged Within Service Area in 2020

DWR Table 6-3: Wastewater Treatment and Discharge within Service Area in 2020											
☒ No wastewater is treated or disposed of within the UWMP service area.											
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Descriptions	Wastewater Discharge ID Number (optional)	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2020 volumes (AFY)				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	
									411		
Total:							--	--	411	--	
NOTES: No wastewater is treated within Poway's service area.											

Recycled Water System

Poway purchases recycled water from the City of San Diego. The recycled water is produced at the NCWRP (where a majority of Poway's sewage is sent) and piped back to Poway after treatment.

Approximately 5% of total water use in Poway is recycled water for landscape irrigation. Recycled water is currently used solely in the South Poway Business Park and is distributed through dedicated pipes and meters. The developers of the Business Park paid for the recycled water infrastructure at the time of construction, and the City maintains the system. The recycled water system began construction in the 1990s and the first recycled water was received in 1997.

The City's 12-mile recycled water distribution system is heavily regulated and routinely inspected for excess runoff and other discrepancies to ensure that all sites adhere to all legal requirements, including Poway's *Rules and Regulations for Recycled Water Use* adopted by the City Council on September 30, 1997. All irrigation in the Business Park is required to use recycled water, with the exception of a small portion of the Business Park not yet connected to the system. The unit cost charged to customers for recycled water was \$4.06 in calendar year 2020, and \$4.25 in calendar year 2021. Poway estimates recycled water purchases will continue to be around 400-500 AF per year over the next 25 years.

Recycled Water Beneficial Uses

In general, areas of Poway not currently served by recycled water are located far from recycled water supplies and would require expensive infrastructure to connect. Poway is largely "built-out" so the opportunity to expand recycled water use by requiring dual piping systems during development is limited. However, as supplies and infrastructure become available, the City will consider serving these areas in the future. The City will continue to explore cost-effective opportunities to expand its recycled water sources and conveyance options for these areas.

Potential opportunities to expand recycled water use include:

- **Build-Out of the Poway Business Park** – Within the Poway Business Park are remaining undeveloped parcels, expected to develop within the next 15 years. Upon development, these sites will be connected to the recycled water system for landscape irrigation. Use of recycled water for indoor purposes, such as process water, cooling systems, and dual-plumbing for toilet flushing, may also be explored. The City might also consider extending recycled water main lines to the small, developed area of the Business Park that is not currently connected to the recycled water system.
- **Extension from Business Park along Community Road** – An extension of the recycled water main pipeline from the Business Park north along Community Road down into the central area of Poway would provide additional demands for recycled water. Estimates show potentially 24 existing dedicated irrigation meters could be connected and converted to recycled water for a combined annual potable water savings of approximately 85 AFY. This concept needs further study to better estimate construction costs, conversion costs, and water savings.
- **Extension from Business Park along Pomerado Road** – An extension of the recycled water main pipeline from the Business Park north along Pomerado Road down into the western area of Poway would provide additional demands for recycled water. Primary customers would be the City's Landscape Maintenance District, Arbolitos Park, City-owned facilities, and Poway Unified School District, for a combined demand of approximately 92 AFY. This concept needs further study to better estimate construction costs, conversion costs, and water savings.

The City of San Diego’s 2004 *Recycled Water Study* evaluated recycled water expansion opportunities for the Rancho Bernardo-area of San Diego, west of Poway, including a possible connection to Poway. However, this option was determined infeasible due to the high cost of conveyance infrastructure. The City of San Diego is actively pursuing the Pure Water San Diego project (Pure Water), a large-scale indirect potable reuse project (advanced water purification with surface water augmentation at either Miramar Reservoir or San Vicente Reservoir) that is anticipated to be operational by the end of 2035.

Table 5-3 shows the City’s actual recycled water use in 2020 compared to its recycled water that was projected in the 2015 UWMP.

Table 5-3: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual

DWR Table 6-5: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual		
Use Type	2015 Projection for 2020	2020 Actual Use
Landscape irrigation (excludes golf courses)	645	411
TOTAL	645	411

Table 5-4 shows the potential future uses for recycled water in Poway. Currently, only the continuation of recycled water for irrigation in the Business Park is considered feasible. Other options for expanding recycled water use are technically feasible but are not economically feasible for the City. Landscape irrigation in the Community Park, Civic Center area, Arbolitos Park, and industrial reuse in the Business Park are potentially economically feasible and Poway will continue to consider these opportunities. Other landscape irrigation is not currently economically feasible because the cost to construct these pipelines would be high and this infrastructure would serve relatively few users since there is almost no commercial agriculture remaining in Poway. Additionally, there are no wildlife habitat, wetlands, groundwater recharge, seawater barrier, or geothermal/energy uses for recycled water in Poway.

Table 5-4: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

DWR Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area										
Name of Agency Producing (Treating) the Recycled Water:				City of San Diego, North City Water Reclamation Plant						
Name of Agency Operating the Recycled Water Distribution System:				City of Poway						
Supplemental Water Added in 2020				99 AFY						
Source of 2020 Supplemental Water				City of Poway, potable water						
Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
Landscape irrigation (excludes golf courses)	Landscape irrigation (excludes golf courses)	400-500	Irrigation in Business Park	Tertiary	411	450	450	450	450	450
				TOTAL	411	450	450	450	450	450

NOTES: Recycled water purchases based on contract agreement with the City of San Diego and potential for development of additional areas of the Business Park.

Actions to Encourage and Optimize Future Recycled Water Use

As a financial incentive, the City sells recycled water at a lower rate than the potable water commodity rate. In addition, when the City is in a water shortage condition as declared by the City Council, recycled water irrigation is exempt from mandatory watering restrictions. The City may also consider assisting customers with retrofit costs, which could be part of an incentive program as shown in **Table 5-5**.

Table 5-5: Methods to Expand Future Recycled Water Use

DWR Table 6-6: Methods to Expand Future Recycled Water Use			
	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
5-11	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Assist customers with retrofit costs	The City may offer rebates or financing to offset the cost of switching to recycled water use	2020-2035	177
TOTAL			177

NOTES: Based on planned Community Road and Pomerado Road expansion projects.

5.6. Desalinated Water

Since 1999, a large-scale seawater desalination facility has been actively explored as a potential local supply for the San Diego region. After exploring the feasibility of a variety of purchase agreements and delivery structures, Poseidon Resources Corporation (Poseidon), SDCWA, and SDCWA's member agencies came to an agreement to move forward with implementation of a desalination facility for the region known as the Carlsbad Desalination Project. In December of 2015, Poseidon completed construction of the Claude "Bud" Lewis Desalination Plant (Carlsbad Desal Plant), a 50 MGD seawater desalination plant located at the Encina Power Plant site adjacent to Agua Hedionda Lagoon, and began deliveries of desalinated seawater. Through a 30-year Water Purchase Agreement, the SDCWA can purchase up to 56,000 AFY of desalinated seawater from the Carlsbad Desal Plant, highly reliable supply which is designated a local supply and is blended with the treated water delivered by SDCWA's Twin Oaks Water Treatment Plant. In 2020, the SDCWA purchased 35,280 AF of desalinated water, which was equivalent to about 8% of the San Diego region's actual water demand in 2020. During any normal year between 2025 and 2045, the SDCWA projects it will purchase approximately 50,000 AF of desalinated water. The remaining 6,000 AFY desalinated seawater available from the Carlsbad Desal Plant is purchased directly from SDCWA by Carlsbad MWD and Vallecitos Water District. As a SDCWA member agency, Poway receives the supply reliability benefits (and costs) associated with this desalinated water supply, although no desalinated water is directly delivered to the City as raw water supply. Poway does not plan to directly purchase desalinated water at this time.

5.7. Exchanges or Transfers

The City of Poway occasionally sells potable water back to the SDCWA for transfers to Ramona Municipal Water District (RMWD). Over the past five years, the City sold 186 AFY to RMWD on average.

5.8. Future Water Projects

The City of Poway has developed an ongoing capital improvement program (CIP) to improve and maintain its water infrastructure. Water system improvements are based on the *2014 Water Distribution System Maintenance and Rehabilitation Assessment* and projects identified in the field by staff. The City's planned water system improvements are important to maintain existing supply and reliability but are not anticipated to increase supply.

Future water projects that could affect the City's supply include the North County One Water Program, which is described in more detail below. Future water projects are categorized as in progress, additional planned, verifiable, or conceptual supplies. "Additional planned" projects are projects that SDCWA or member agencies are actively pursuing and currently funding, but these projects do not rise to the level of verifiable for implementation. "Verifiable" projects are those with substantial evidence and adequate documentation regarding implementation and supply use, while "conceptual" projects are those considered to be in the pre-planning and pre-feasibility analysis phases. These conceptual projects have not progressed to a point where the project yield can be factored into reliability assessments or uncertainty planning for this 2020 UWMP.

- **North County One Water Program (Conceptual):** The SEWRF in the Cardiff area within the City of Encinitas, California could be expanded to accommodate an Advanced Water Purification Facility that would produce an estimated 400 to 3,100 AFY of purified recycled water by 2035 suitable for potable reuse. The SEWRF also has key assets available for production of purified water such as an ocean outfall, available land for advanced treatment, treated secondary effluent, and technically capable staff (refer to the Recycled Water Expansion Plant Development Study developed in 2019 in partnership with SDWD, SFID, SEJPA, OMWD, and LWWD).

EWA and SEJPA have been working with multiple local water and wastewater agencies to develop the North County One Water Program, building on over a decade of collaborative efforts in the region by the North San Diego Water Reuse Coalition. With the combined flows, the North County One Water Program could supply an estimated 18,000 AFY to 25,000 AFY or more of purified recycled water overall for potable reuse by 2035. The City is supportive of this future project and is interested in purchasing up to 2,000 AFY of recycled water from it. This future project has been discussed qualitatively in **Table 5-7**.

5.9. Summary of Existing and Planned Sources of Water

The City's primary water supplies include purchased raw water and recycled water. As described above, Poway's raw water is purchased from SDCWA. Lake Poway captures a small amount of rain and surface runoff during rain events; however, because this quantity of Lake Poway runoff is relatively minimal and not reliable, it is not considered as a planned water supply source. Additionally, the City of Poway purchases a small quantity of recycled water from the City of San Diego for irrigation in the Poway Business Park. **Table 5-6** outlines the City's 2020 water supply.

Table 5-6: Water Supplies - Actual

DWR Table 6-8: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2020		
		Actual Volume	Water Quality	Total Right or Safe Yield (optional)
Purchased or Imported Water	Purchased raw water from SDCWA	9,374 ¹	Raw Water	--
Recycled Water	Purchased Recycled Water from the City of San Diego	411	Recycled Water	--
TOTAL		9,785		--

NOTES: ¹Represents total volume imported from SDCWA, not total volume distributed to customers.

Table 5-7 outlines the projected water supplies for the City of Poway as provided by SDCWA for raw water and the City of San Diego for recycled water.

Table 5-7: Expected Future Water Supply Projects

DWR Table 6-7: Expected Future Water Supply Projects or Programs	
	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
X	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
5-12	Provide page location of narrative in the UWMP
NOTES: Beginning in 2035, a conceptual indirect potable reuse (IPR) project [North County One Water Program] is anticipated to provide approximately 2,000 AFY of additional local water supply to the City.	

Table 5-8: Water Supplies – Projected

DWR Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply³									
		2025		2030		2035		2040		2045	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Purchased or Imported Water ¹	Purchased raw water from SDCWA	10,087	--	10,344	--	10,589	--	10,717	--	11,046	--
Recycled Water ²	Purchased Recycled Water from the City of San Diego	450	--	450	--	450	--	450	--	450	--
TOTAL		10,537	--	10,794	--	11,039	--	11,167	--	11,496	--

NOTES: ¹Purchased water supply based on projected water available per Table 2-8 of SDCWA's Draft 2020 UWMP. ²Recycled water supply is based on Appendix F (Table F-4) of the SDCWA's Draft 2020 UWMP and the agreement with the City of San Diego. ³Beginning in 2035, a conceptual indirect potable reuse (IPR) project [North County One Water Program] is anticipated to provide approximately 2,000 AFY of additional local water supply to the City.

5.10. Climate Change Impacts to Supply

The City's water supply portfolio includes imported water from the SDCWA, which is sourced from the Colorado River Aqueduct and from the Delta via the State Water Project (SWP), desalinated water from the SDCWA, and recycled water purchased from the City of San Diego. According to San Diego's *2019 IRWM Plan Update*, climate change may affect the water supply in Poway and the greater San Diego region. Climate change may cause increased frequency of droughts, seawater intrusion, changes in precipitation volumes and timing, altered fire and weather regimes, and potential changes in the availability of imported water supplies. Climate change may also impact the beneficial uses of water as well as water quality. In addition, uncertainties caused by climate change complicate mitigation and emergency response planning.

Hydrologic conditions in the San Diego IRWM Region, in all of California, and in the Colorado River Basin, all of which impact the City's water supply, will likely be altered as a result of global climate change. Key changes in hydrologic conditions outlined by the IRWM Plan that could affect the supplies for the City include but are not limited to:

- **Snowpack Change** – California is heavily dependent on snowpack in the Sierra Nevada Mountains. Reduction in snowpack would result in decreased stored water available to the state and could adversely impact imported water available to the City and the San Diego IRWM region.
- **Hydrologic Patterns** – Storms and precipitation patterns have changed over the past century throughout California. Climate change could lead to further changes in precipitation patterns and result in varying water availability in the state and the region. Flood management issues, increased erosion, and water quality impacts could occur with increased frequency and intensity of storm events.
- **Water Temperatures** – Increased air temperatures may result in increased reservoir water temperatures, adversely affecting regional water quality and the City's imported raw water. Increased air temperatures would also lead to greater evaporation of reservoirs and lakes, higher demand in energy for cooling, and greater demand for agriculture.

Snowpack Change

MWD indicated in its Draft 2020 UWMP that the SWP and CRA supplies have experienced dramatic swings in annual hydrologic conditions, which are largely affected by snowpack. The earliest and lowest snowpack peak in recorded history occurred in 2015 during the recent severe drought, where snowpack was recorded at only 17% of the traditional snowpack peak on April 1st, which resulted in decreased supply. Dry conditions have returned in 2020, which began with a dry January and the driest February on record. In addition to below average precipitation, the Northern Sierra Nevada snowpack peaked in April of 2020 at only 66% of the April 1st average measurement. The Colorado River Basin has also been affected by variability in hydrologic conditions and snowpack. In 2020, the Upper Colorado River Basin snowpack peaked in April at 107% of average; however, April through July runoff was observed at just 52% of average due to hot and dry conditions in the late spring and early summer. This instance is an example of a potential change in relationship between precipitation and annual runoff. At the close of 2020, system storage was at or near its lowest since 2000, meaning that MWD has less water available to buffer dry conditions.

The overall storage levels in the Colorado River system have steadily decreased over time, increasing the likelihood of water supply shortages in the future. The 2019 IRWM Plan projected that imported water supply would increase by approximately 20% to 25%, which would significantly impact the

available water supply of the San Diego region. Decrease in imported water supply was identified as the highest priority issue. The water supplies from the SWP are also affected by lower snowpack levels statewide. MWD only received 20% of its contracted water supply from the SWP in 2015. Up to a 25% decrease is projected in water supply from the SWP in the future.

Hydrologic Patterns

Precipitation patterns throughout Southern California have changed significantly over the past few decades. Droughts have become increasingly more severe and longer lasting and have resulted in less rainfall events, which in turn results in less runoff captured in Lake Poway. As discussed above, the overall storage levels in the Colorado River System have decreased and are expected to continue to decrease, thus further decreasing water supply availability in the future. Fewer rainfall events may also cause higher pollutant concentration in local runoff, which can negatively impact water quality. The City treats raw water imported from the SDCWA to drinking water levels before distribution to ensure safe drinking water is provided to its customers.

Water Temperatures

Water quality and quantity of Lake Poway may be negatively impacted by increased air and water temperatures caused by climate change. Lake Poway is vulnerable to water quality changes and raw water storage reductions driven by increased evaporation rates, higher demand in energy for cooling, and greater demand for agriculture.

To plan for the anticipated impacts to water supply reliability due to climate change, efforts have been taken to increase reliability on both a regional and local level. As discussed in **Section 5.6**, SDCWA began purchasing desalinated water from the Carlsbad Desal Plant in 2015, which met about 8% of the San Diego region's actual water demand in 2020. This drought-resistant source of supply will continue to reduce the San Diego region's dependency on imported water and will also reduce the potential impacts to water supply availability during future droughts. On a local level, as discussed in **Section 5.5**, the City continues to seek opportunities to convert existing potable water customers to recycled water customers, thus utilizing a local drought-proof supply in place of imported water. The City may also benefit from implementation of the North County One Water Program (refer to **Section 5.8**), which aims to bring potable reuse supplies to the San Diego region. The City is supportive of the North County One Water Program and plans to purchase up to 2,000 AFY of potable reuse water, thereby supplying its customers with an additional local, drought-proof water supply source by 2035. Finally, as discussed in **Chapter 8: Demand Management Measures**, Poway continues to participate in water conservation programs that have proven to reduce customers' water consumption over time.

5.11. Energy Intensity of Supplies

Water energy intensity is the total amount of energy expended on a per AF basis to take water from the location the City acquires it to the point of delivery. Thus, energy intensity includes conveyance, extraction, treatment, placing water into and taking it from storage, and distribution. The City's water energy intensity only accounts for the water management processes occurring within its operational control; therefore, energy use associated with the extraction and treatment and conveyance of wholesale water to the City's points of diversion are not included.

Poway purchases raw water from SDCWA, which is treated at the City's WTP prior to distributing to customers. Therefore, the City's energy demands include the energy requirements for treatment as well as conveyance, distribution, and local storage.

Using metered energy billing data from the San Diego Gas & Electric (SDG&E) for fiscal year 2020 (July 1, 2019 through June 30, 2020), the City estimated its total energy use across all assets for potable water deliveries as 2,749,209 kilowatt hours (kWh). During this same period, the City supplied approximately 8,774 AF of potable water to its customers, meaning the City's energy intensity for potable water deliveries was approximately 313 kWh/AF. The City also estimated its total energy use across all assets for recycled water deliveries as 99,791 kWh for fiscal year 2020. During this same period, the City supplied approximately 411 AF of recycled water to its customers, meaning the City's energy intensity for recycled water deliveries was approximately 243 kWh/AF.

The City elected to report its energy intensity using DWR's recommended total utility approach provided in Appendix O of the Draft Guidebook. The energy intensity calculations are provided in **Appendix F** of this Plan.

Chapter 6 Water Supply Reliability

A water supplier faces a water shortage when available water supplies are less than projected demands. Although water suppliers conduct extensive long-term planning to have enough available supplies to meet customers' demands, several external factors can cause unexpected and unanticipated water supply shortages such as severe drought, earthquakes, catastrophic power outages, water quality or climatic constraints, sabotage, and other legal and environmental challenges. CWC §10635(a) requires suppliers to include an assessment of water supply reliability in this UWMP to plan for potential water shortages during varying conditions that can cause reductions in available supply.

During the recent drought, severely dry conditions persisted throughout Southern California from 2012 – 2017, which compelled the City and other regional water suppliers to take supply augmentation and demand reduction actions to ensure adequate supply was available to meet demand.

This chapter describes the City's supply reliability assessment, which includes a new requirement to conduct a Drought Risk Assessment (DRA) that will enable the City to evaluate risk under a severe drought period lasting for the next five consecutive years. The assessment also provides a rational basis for future decision-making related to supply management, demand management, and project development within the City.

As noted in **Chapter 5: System Supplies**, the City of Poway currently obtains all of its potable water supply from the SDCWA. This is expected to continue in the future. Therefore, the City's water supply reliability is directly linked to SDCWA's water supply reliability. Moreover, most of the information in this section is based upon SDCWA's Draft 2020 UWMP, dated March 2021. Because SDCWA obtains a large portion of its supply from MWD, SDCWA also coordinated its demands and expected supplies with MWD.

6.1. Constraints on Water Sources

This section discusses the reliability of the City's water supplies with respect to water quality and service reliability. Imported treated water and recycled water quality and service reliability are each discussed in the following sections. While there are water quality challenges associated with each source, the City and SDCWA are taking steps to address these challenges and the City does not anticipate decreases in water supply over the UWMP planning horizon due to water quality concerns.

Imported Potable Water Supply Constraints

The City purchases water from the SDCWA that is purchased from MWD, sourced from the Colorado River Aqueduct (CRA) and the Sacramento River Delta through the State Water Project (SWP). SDCWA's supplies also include desalinated water from the Carlsbad Desal Plant.

MWD Supplies

As part of its Draft 2020 UWMP (March 2021), MWD completed a reliability assessment that identifies the potential risks and uncertainties that could affect reliability of its supplies. Because Poway receives imported water from MWD through its purchases from SDCWA, potential risks to MWD's supplies (SWP and CRA) are also potential risks to the City's imported water supplies. A summary of the potential risks identified by MWD is provided below.

- **Risks Affecting Supplies:** Hydrologic conditions and environmental regulations can significantly impact MWD's imported water supplies. The SWP and CRA rely heavily on

precipitation to replenish available supply storage. Over the past two decades, MWD has significantly increased its storage capabilities to include both dry-year and emergency storage. MWD developed this additional storage to plan for the risks that hydrologic variability, potential climate change, and environmental regulations pose to its supplies. The MWD also faces challenges with promoting more resilient, drought-proof supplies, including public perception of recycled water use and local community and environmental opposition to seawater desalination.

- **Risks Affecting Operations and Water Quality:** MWD's net energy use and costs are dominated by the pumping required to import water from the CRA and SWP systems. Because MWD does not have direct control over the SWP, it has focused its energy strategy on reducing energy use, costs, and greenhouse gas (GHG) emissions associated with the CRA operations. Reducing energy needs for the CRA operations and diversifying MWD's supply portfolio will lead to increased supply reliability. Water quality regulations and issues such as algae toxins, PFAS, and other constituents of emerging concern pose risks to the CRA and SWP supplies. High salinity is also a significant water quality issue associated with the CRA supplies. MWD relies on blending its CRA supplies with SWP water to mitigate for the higher-salinity CRA water. During recent periods of drought, MWD's SWP allocation has been substantially reduced, including to historical lows of 5% in 2014 and 20% in 2015, which affected blending operations. MWD's increased reliance on CRA water in 2014 and 2015 led to increased salinity in its blended imported water.
- **Distribution System Water Losses:** Although the AWWA Water Audit methodology provides a tool to quantify real and apparent water system losses in a supplier's distribution system, there is still uncertainty because these water losses are estimated rather than measured. In addition to quantifying its system water losses from 2015 – 2019 in its 2020 UWMP, MWD completed a voluntary distribution system water loss assessment to estimate water losses associated with the treated distribution system and reservoir evaporation.
- **Climate Change:** Potential changes associated with climate change pose risks to supply reliability by adding uncertainty to the challenges of planning. Although the exact timing, magnitude, and regional impacts of such uncertainties remain unknown, researchers have identified several areas of concern for California water planners, including reduction in Sierra Nevada snowpack, increased intensity and frequency of extreme weather, prolonged droughts, water quality issues associated with increased occurrences of wildfires, changes in rainfall runoff patterns and amounts, and rising sea levels. Increasing supply reliability will mitigate the potential impacts of climate change.

SDCWA Supplies

SDCWA is working to diversify its supplies and decrease its dependence on less reliable, imported water supplies from MWD over the next 25 years. SDCWA's Draft 2020 UWMP reports that forecasted imported and local water supply capabilities and stored water would be sufficient to meet expected demands under the single driest year and all five years of the multiple dry year hydrological scenarios. Investments that have been made by SDCWA and its member agencies, such as providing additional carryover storage, are anticipated to help achieve reliability in dry years and multiple dry years. In the unanticipated event that shortages occur during multiple dry year periods, additional regional demand management measures consistent with SDCWA's Water Shortage and Drought Response Plan (refer to **Chapter 7: Water Shortage Contingency Planning**) will be taken to overcome the supply deficit.

SDCWA's Draft 2020 UWMP provides an overview of water quality concerns and management actions related to imported water supplies from MWD, which are briefly discussed below and in the preceding section.

- **Colorado River** - For CRA supplies, high salinity levels, uranium, and perchlorate contamination represent the primary areas of concern with respect to water quality. Sediments in the River's watershed are saline, and these salts are easily leached into the River. In response, MWD adopted a Salinity Management Policy in 1999 that sets a target of 500 parts per million total dissolved solids (TDS) for water delivered to customers and achieves this by blending CRA water with SWP water that has a much lower TDS level. In addition, the seven states that use water from the CRA have formed the Colorado River Salinity Control Forum with a focus on preventing salt from entering the river.

Perchlorate, which is the main component in rocket fuel and can be found in other munitions, is found in low levels in the CRA. The source of the perchlorate has been traced to two chemical manufacturing sites near Henderson, Nevada, adjacent to the Las Vegas Wash, a tributary to the CRA. The Nevada Department of Environmental Protection manages groundwater remediation projects for both of these sites and has observed a reduction in perchlorate levels. MWD and the Southern Nevada Water Authority monitor the progress closely.

While uranium occurs naturally in the Colorado River Watershed, agencies were also concerned about the potential for additional uranium to enter the CRA from mine tailings in Moab, Utah. The U.S. Department of Energy is moving the tailings away from the River and also improving the groundwater quality. This process is expected to be complete between 2019 and 2025.

- **State Water Project** - Areas of water quality concern for the SWP include salinity, bromide, total organic carbon, and nutrients that result from seawater intrusion and agricultural runoff. Bromide and total organic carbon are a concern because when combined with disinfectants used in typical treatment processes, potentially harmful byproducts can be formed. The nutrients can increase nuisance algal and aquatic weed production and lead to taste and odor issues. There are State and Federal programs working to address these issues. In addition, MWD, SDCWA, and the City of Poway closely monitor imported water quality and adjust treatment processes accordingly.

These water quality challenges impact the operation of the WTP, which treats most of the City's potable water to meet State and Federal drinking water requirements before delivery to customers. The City does not anticipate any reduction in supplies due to water quality impacts; however, if the imported water quality continues to degrade, the water becomes more difficult and expensive to treat. For this reason, MWD, SDCWA, and the City of Poway have implemented programs to protect and continuously monitor source water quality, and to identify constituents that may be of concern, so management actions can be implemented or modified, as necessary.

The SDCWA's local supplies, such as seawater desalination, are not anticipated to be impacted by water quality issues provided that treatment has been designed such that water quality of desalinated water is low in TDS and in other constituents that otherwise pose concerns to regional water quality.

Reduced Reliance on the Delta

The State is seeking to reduce overall dependence on the Bay-Delta and requires urban water suppliers that anticipate participating in or receiving water from a proposed project, such as a

multiyear water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Sacramento-San Joaquin Delta (Delta) are required to demonstrate reduced reliance on the Delta in their UWMPs. Because Poway receives water from the Delta through imported purchases from the SDCWA, Poway has prepared an appendix to address reduced reliance on the Delta (see **Appendix J**). This evaluation is based on regional supply diversification, to address the requirements of the Delta Plan Policy WR P1 Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (California Code Regulations, Title 23, §5003).

Local Water Supply Constraints

The City of Poway collects a limited amount of surface water via runoff into Lake Poway from local precipitation; however, local runoff is minor and is not included in the City's supply portfolio. Therefore, although surface water quality is discussed below, this supply has not been included in the City's water reliability assessment.

Water Quality

The quality of Poway's local surface waters is enhanced through a "source water protection approach." The City prepares source water assessments and sanitary surveys to identify and address potential contaminants. In May 2010, the City of Poway identified the presence of Quagga Mussels in Lake Poway. Quagga Mussels pose challenges to surface waters throughout the western United States. It is believed that Quagga Mussels entered the MWD system through water from the Colorado River. While Quagga Mussels do not negatively harm water quality like some other contaminants, they are considered a highly-invasive species. Their presence requires careful attention, including ongoing testing procedures and implementation of eradication and control strategies, because they can be highly destructive to water system infrastructure. In the future, more significant operational adjustments to mitigate Quagga Mussels may be required.

Service Reliability

Locally within the City of Poway, as a result of recent significant reductions in water use during the drought, some pipelines were flowing at very low velocities and some distribution system storage tanks remained at relatively constant levels. Under these conditions, the disinfectant in the water can decline. The City of Poway completed a comprehensive modeling study of the entire distribution system to identify potential problems and adjusted operations to mitigate potential problems.

Recycled Water Supply Constraints

Water Quality

The City purchases its recycled water supply from the City of San Diego. The City of San Diego ensures a consistent water quality standard is met for Poway's recycled water supplies through compliance with Title 22 standards. The City has historically supplemented recycled water deliveries with potable water to improve the quality of the water and to act as a back-up during times of shut-down on the recycled water system.

Service Reliability

The City has a recycled water distribution system and will continue to consider expanding the system where feasible and cost-effective, as discussed in **Section 5.5** of this UWMP. Purchased recycled water from the City of San Diego has been essentially a "drought-proof" supply. Recycled water production capacity is affected by the permitted capacity, the use patterns of recycled water customers, wastewater influent diurnal flow patterns, influent average dry weather flow, and

storage/equalization capacity. The City of San Diego continues to assess these factors through various measures to ensure the continued reliability of the City's recycled water supply and to increase the potential for future recycled water use. Currently, the City of San Diego has sufficient capacity to increase recycled water deliveries to the City should recycled water demands increase during drought conditions. However, with development of the City of San Diego's Pure Water Program, which seeks to advance treat wastewater from the Metro System and either directly or indirectly reuse them for potable supply, the future availability of recycled water from the City of San Diego for non-potable purposes may be limited.

Expanding System Reliability

As described in **Chapter 5: System Supplies**, because of the semi-arid climate, location, local geology, and the water rights of other agencies, it has not been feasible or cost-effective for the City of Poway to develop local water resources, such as surface water, groundwater, or desalinated seawater. The City is open to evaluating opportunities for water supply diversification as they may arise. SDCWA and its member agencies have developed and continue to develop a variety of other water resources to provide a diverse water supply mix and increased supply reliability as discussed in **Section 6.5**.

6.2. Reliability by Type of Year

CWC §10631 (c)(1) requires water suppliers to assess supply reliability not only during normal years but also during single dry and multiple dry years to plan for potential droughts and/or other catastrophic supply interruptions. A normal, or average, year is representative of the water supplies that a supplier anticipates will be available during normal conditions and could be a single year or an averaged range of years. Single dry and multiple dry year conditions are usually based on historical records of annual runoff from a particular watershed. To evaluate supply reliability for single year dry conditions, suppliers must assess supply reliability for the year that represents the lowest water supply available to the supplier. To evaluate supply reliability for multiple year dry conditions, suppliers assess supply reliability for a five consecutive year period that is representative of the driest five-year historical sequence for the supplier.

Because the City is one of SDCWA's member agencies and purchases water from SDCWA to meet all of its potable water demands, it relied upon information from SDCWA's Draft 2020 UWMP to select years for its average (normal water year), single dry, and multiple dry year periods. The average year period was selected based on hydrologic modeling performed by SDCWA that modeled supplies and demands from 1986 – 2018. The SDCWA selected year 2015 as its single dry year period because it is representative of the lowest regional water supply availability during the recent severe drought. SDCWA selected years 2011 – 2015 as its multiple dry year period because, during this consecutive five-year period, average runoff in the watersheds that affect SDCWA's and Poway's water supplies was at its lowest. The multiple dry year analysis assumes that recycled water demands vary consistently with potable demands during dry years. In dry years, demands are expected to be between 107% and 109% of normal. The City of San Diego has sufficient capacity to accommodate these increases in recycled water demands; Poway can purchase up to 650 AFY of recycled water from the City of San Diego. **Table 6-1** presents Poway's basis of water year data, including the base years selected for each year type and the average percentage of water supply that would be available.

Table 6-1: Basis of Water Year Data

DWR Table 7-1 Retail: Basis of Water Year Data			
Year Type	Base Year	Available Supplies if Year Type Repeats	
		Volume Available	% of Average Supply
Average Year	1986-2018	--	100%
Single-Dry Year	2015	--	107%
Multiple-Dry Years 1st Year	2011	--	107%
Multiple-Dry Years 2nd Year	2012	--	108%
Multiple-Dry Years 3rd Year	2013	--	108%
Multiple-Dry Years 4th Year	2014	--	108%
Multiple-Dry Years 5th Year	2015	--	109%

6.3. Supply and Demand Assessment

For the City’s water supply assessment, water provided by SDCWA and recycled water provided by the City of San Diego were considered. For more information on the demand projections used for the demand assessment, refer to **Chapter 3: System Water Use**. Projected available recycled water supply is based on Poway’s projected recycled water demands, which the existing recycled water facilities in the City of San Diego can meet. Projected raw and potable water supply is based on how much of the City’s total potable water demand SDCWA can meet.

This section presents results of the supply reliability assessment, which compared supplies and demands projected under each of the hydrologic scenarios evaluated (normal or average year, single dry year, and multiple dry year period). The purpose of this analysis is to help to identify whether potential supply reliability issues exist under the various hydrologic scenarios evaluated. As demonstrated in this section, no water shortages are projected under any of the hydrologic scenarios evaluated.

Projected Normal Year Supply and Demand

Table 6-2 compares current and projected water supply and demand under normal year conditions and indicates that, in average precipitation years, the City has sufficient water to meet its customers’ needs through 2045. This projection is based on continued commitment to conservation measures, availability of recycled water supplies, and commitment by the SDCWA to meet its member agencies’ demands. Under normal year conditions, SDCWA projects sufficient supplies to meet member agency demands; therefore, all of the City’s raw and potable water demands can be met under normal year conditions.

Table 6-2: Normal Year Supply and Demand Comparison

DWR Table 7-2: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045
Purchased Water (SDCWA)	10,087	10,344	10,589	10,717	11,046
Recycled Water (City of San Diego)	450	450	450	450	450
Supply Totals	10,537	10,794	11,039	11,167	11,496
Potable Water Demand	10,087	10,344	10,589	10,717	11,046
Recycled Water Demand	450	450	450	450	450
Demand Totals	10,537	10,794	11,039	11,167	11,496
Potable Water Difference	-	-	-	-	-
Recycled Water Difference	-	-	-	-	-
Difference	-	-	-	-	-

Projected Single Dry Year Supply and Demand

Table 6-3 compares the City’s projected water supply and demand during a single dry year and indicates that the City has sufficient water to meet its customers’ needs through 2045. Demands in a single dry year are expected to increase by approximately 7% from normal year demands, consistent with **Table 6-1**. The analysis assumes the overall increase in demand applies equally to both potable and non-potable demand. The SDCWA’s supply reliability analysis, documented in its 2020 UWMP, shows that there are sufficient supplies available to the SDCWA to meet all member agency demands in the single dry year scenario when accounting for both increase in regional demands and dry year impacts on local supply availability for member agencies. The analysis therefore also assumes that there would be no shortages in water available for purchase from the SDCWA during any single dry year through 2045 due to SDCWA’s carryover supplies (supplies in storage). Because the SDCWA’s 2020 UWMP states that additional water supplies would be available to SDCWA member agencies during a single dry year, the City could purchase additional supplies from SDCWA to meet demands. Given that recycled water is a drought-proof supply and the City of San Diego has sufficient capacity to increase recycled water deliveries by 7% above normal year use, sufficient recycled water would be available to meet single year dry demands through 2045.

This analysis assumes that the City’s customers would not be required to increase conservation in a single dry-year due to additional supply availability from SDCWA, and that passive and active conservation would continue at normal levels such that demands would be consistent with normal water year levels.

Table 6-3: Single Dry Year Supply and Demand Comparison

DWR Table 7-3: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045
Purchased Water (SDCWA)	10,772	11,046	11,308	11,445	11,796
Recycled Water (City of San Diego)	481	481	481	481	481
Supply Totals	11,253	11,527	11,789	11,926	12,277
Potable Water Demand	10,772	11,046	11,308	11,445	11,796
Recycled Water Demand	481	481	481	481	481
Demand Totals	11,253	11,527	11,789	11,926	12,277

DWR Table 7-3: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045
Potable Water Difference	-	-	-	-	-
Recycled Water Difference	-	-	-	-	-
Difference	-	-	-	-	-

Multiple Dry Years

During a multiple-dry year scenario, the region experiences on-going dry hydrologic conditions, such as in a multi-year drought. **Table 6-4** compares Poway’s projected water supply and demand during multiple dry years and indicates that the City has sufficient water to meet its customers’ needs through 2045. Under the multiple dry year analysis, demands are anticipated to range from approximately 7% above normal in the first year to approximately 9% above normal in the fifth year, consistent with **Table 6-1**. The multiple dry year analysis also assumes overall increases in demand apply equally to both potable and non-potable demand. The analysis uses an average demand increase for each year of the multiple dry year scenario due to uncertainty in projecting multiple dry year demands. The SDCWA’s supply reliability analysis, documented in its 2020 UWMP, shows there are sufficient supplies available to the SDCWA to meet all member agency demands in all years of the multiple dry year scenario when accounting for both increases in regional demands and dry year impacts on local supply availability for member agencies. The analysis therefore assumes that there would be enough regional storage capacity and additional supplies to meet the City’s demands during all years of a five-year drought period through 2045. Given that recycled water is a drought-proof supply and the City of San Diego has sufficient capacity to increase recycled water deliveries by 9% above normal year use, sufficient recycled water would be available to meet demands during a multiple dry year period through 2045.

SDCWA’s 2020 UWMP indicates that a supply shortage is not expected at any point during the multiple dry year periods from 2025-2045. Because SDCWA’s supply reliability analysis incorporates member agency supplies and total member agency demands (not just total demands on SDCWA), any year the SDCWA’s analysis finds 100% reliability, the City expects to be able to purchase as much water as needed to meet demands not met by local supplies.

Table 6-4: Multiple Dry Years Supply and Demand Comparison

DWR Table 7-4: Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045
First year	Purchased Water (SDCWA)	10,821	11,097	11,360	11,497	11,850
	Recycled Water (City of San Diego)	483	483	483	483	483
	Supply Totals	11,304	11,580	11,843	11,980	12,333
	Potable Water Demand	10,821	11,097	11,360	11,497	11,850
	Recycled Water Demand	483	483	483	483	483
	Demand Totals	11,304	11,580	11,843	11,980	12,333
	Potable Water Difference	-	-	-	-	-
	Recycled Water Difference	-	-	-	-	-
	Difference	-	-	-	-	-
Second year	Purchased Water (SDCWA)	10,860	11,137	11,401	11,539	11,893
	Recycled Water (City of San Diego)	485	485	485	485	485
	Supply Totals	11,345	11,622	11,886	12,024	12,378

DWR Table 7-4: Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045
	Potable Water Demand	10,860	11,137	11,401	11,539	11,893
	Recycled Water Demand	485	485	485	485	485
	Demand Totals	11,345	11,622	11,886	12,024	12,378
	Potable Water Difference	-	-	-	-	-
	Recycled Water Difference	-	-	-	-	-
	Difference	-	-	-	-	-
Third year	Purchased Water (SDCWA)	10,900	11,178	11,443	11,581	11,936
	Recycled Water (City of San Diego)	486	486	486	486	486
	Supply Totals	11,386	11,664	11,929	12,067	12,422
	Potable Water Demand	10,900	11,178	11,443	11,581	11,936
	Recycled Water Demand	486	486	486	486	486
	Demand Totals	11,386	11,664	11,929	12,067	12,422
	Potable Water Difference	-	-	-	-	-
	Difference	-	-	-	-	-
Fourth year	Purchased Water (SDCWA)	10,940	11,219	11,485	11,624	11,981
	Recycled Water (City of San Diego)	488	488	488	488	488
	Supply Totals	11,428	11,707	11,973	12,112	12,469
	Potable Water Demand	10,940	11,219	11,485	11,624	11,981
	Recycled Water Demand	488	488	488	488	488
	Demand Totals	11,428	11,707	11,973	12,112	12,469
	Potable Water Difference	-	-	-	-	-
	Difference	-	-	-	-	-
Fifth year	Purchased Water (SDCWA)	10,955	11,234	11,500	11,639	11,996
	Recycled Water (City of San Diego)	489	489	489	489	489
	Supply Totals	11,444	11,723	11,989	12,128	12,485
	Potable Water Demand	10,955	11,234	11,500	11,639	11,996
	Recycled Water Demand	489	489	489	489	489
	Demand Totals	11,444	11,723	11,989	12,128	12,485
	Potable Water Difference	-	-	-	-	-
	Difference	-	-	-	-	-

6.4. Five-Year Drought Risk Assessment

The City completed a Drought Risk Assessment (DRA) to determine the reliability of water service under a severe drought period lasting for the next five consecutive years. The results of the DRA are considered in the development of demand management measures (refer to **Chapter 8: Demand**

Management Measures) and water supply projects (refer to **Chapter 5: Water Supplies**). The DRA provides an opportunity to evaluate the functionality of Poway’s Water Shortage Contingency Plan (WSCP), discussed in **Chapter 7: Water Shortage Contingency Planning**. Results of this evaluation can be used to help identify undesired risks and allow for proactive steps to be taken prior to the next actual long-term drought. The DRA can be modified or updated on an interim cycle, as needed, to allow for the incorporation of new information as it becomes available or in the event of unforeseen circumstances.

Data and Methodology

Per UWMP requirements, the DRA is based on the five driest consecutive years on record. To align with SDCWA’s DRA, the historical period used in this analysis is the period from 2014 to 2018. This represents the five-year period determined by SDCWA to have the lowest local water supply production from surface water and groundwater, the two local water supplies that are most susceptible to variation due to weather conditions. As discussed in **Section Section 6**, the City’s supply portfolio includes raw water purchased from SDCWA which is treated to potable at the City’s WTP, and recycled water purchased from the City of San Diego. Recycled water purchases are considered to be drought-proof supplies and therefore are not expected to be significantly impacted by weather conditions.

During periods where non-potable demands exceed non-potable supplies, Poway supplements with potable water by increasing its purchases from SDCWA accordingly. Therefore, because the City’s only source of potable water supply is purchased water from SDCWA, and SDCWA’s DRA accounts for regional demands, SDCWA’s DRA forms the basis for the City’s DRA and availability of purchased supplies. For years where SDCWA projects sufficient supplies to meet demands, the City expects to be able to purchase enough water to meet its demands. Data used to calculate Poway’s supply capabilities under the scenario of five consecutive dry years is provided in **Table 6-5**.

Projected total water demands were calculated by escalating Poway’s 2020 demands annually for five years based on multipliers provided by SDCWA in their Draft 2020 UWMP (shown in **Table 6-5**). These multipliers are based on a weather index that was developed to assess the impact of dry/hot weather conditions on demands.

Table 6-5: Projected Total Water Demands – Normal vs. Five-Year Drought Conditions

	2021	2022	2023	2024	2025
Projected Normal Year Demands (AFY)	9,455	9,726	9,996	10,267	10,537
Demand Projection Multiplier (Change from Normal Year) ¹	108%	112%	116%	120%	125%
Projected Five-Year Drought Demands (AFY)	10,211	10,893	11,595	12,320	13,171

Determination of Reliability

SDCWA anticipates a surplus of water supplies in all five years of an extended drought period and would have enough supply to meet Poway’s increased demands shown in **Table 6-5**. The analysis presented in **Table 6-6**, the City would be able to meet its water demands in all five years of the extended drought period; and therefore, implementation of shortage response actions, as discussed in Poway’s WSCP, would not be required (refer to **Chapter 7: Water Shortage Contingency Planning**).

Table 6-6: Multiple Dry Years Supply and Demand Comparison

DWR Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)					
Year	2021	2022	2023	2024	2025
Total Water Use	10,211	10,893	11,595	12,320	13,171
Total Supplies	10,211	10,893	11,595	12,320	13,171
Surplus/Shortfall w/o WSCP Action	0	0	0	0	0
WSCP – Supply Augmentation Benefit	0	0	0	0	0
WSCP – Use Reduction Savings Benefit	0	0	0	0	0
Revised Surplus/Shortfall	0	0	0	0	0
Resulting % Use Reduction from WSCP Action	0%	0%	0%	0%	0%

6.5. Regional Water Supply Reliability

The City has taken steps to improve system reliability by offering rebate and incentive programs to reduce indoor and outdoor water use (refer to **Chapter 8: Demand Management Measures**), supporting development of local drought-proof supplies (refer to **Chapter 5: Water Supplies**), and implementing voluntary and mandatory water use restrictions as needed to reduce demands during droughts conditions (refer to **Chapter 7: Water Shortage Contingency Planning**).

SDCWA works closely with its 24 member agencies, including Poway, to promote development of local supply resources and water conservation efforts. Several rebate and incentive programs offered by the City, many in conjunction with SDCWA and MWD, have contributed to significant reductions in overall demands as evidenced by the City’s achievement of its SB X7-7 2020 Target (refer to **Chapter 4: SB X7-7 Baselines, Targets, and 2020 Compliance**). The City is also a proponent of a future water project that would increase its local water resources by supplying approximately 2,000 AFY of potable reuse water to Poway to meet demand, as discussed in **Section 5.8** of this UWMP. During dry years, when available water supplies are reduced, Poway manages its overall water supply and demand balance through implementation of the voluntary and mandatory water use restrictions defined in its WSCP. Together, these water supply diversification and demand management tools and measures will maximize the City’s local resources and minimize its need to purchase imported water from the SDCWA.

Chapter 7 Water Shortage Contingency Plan

7.1. Summary of Plan

This section addresses water supply contingency planning and drought planning. As noted in **Chapter 5: System Supplies**, the City of Poway currently obtains all of its potable water supply from SDCWA. This is expected to continue in the future. Therefore, Poway's water shortage planning and subsequent response actions are directly linked to SDCWA's water supply reliability.

Poway's *Water Conservation Plan, Chapter 8.94* of the Poway Municipal Code (PMC) was adopted by the City Council on November 18, 2008, as Ordinance 682. In order to comply with the new 2018 legislation that was adopted in response to the recent severe drought, Poway developed a Water Shortage Contingency Plan (WSCP) to supplement its existing *Water Conservation Plan*. The City plans to adopt the WSCP at the May 18, 2021 hearing. Pursuant to the 2018 legislation, Poway's WSCP addresses several new requirements, including, but not limited to: describe key attributes and procedures for conducting an annual water supply reliability assessment, updating to six standard water shortage response levels (progressive ranges of 10%, 20%, 30%, 40%, 50%, and greater than 50% shortage) or crosswalk the six standard stages to the supplier's existing four stages, quantify estimated water savings associated with each shortage response action, describe communication protocols and public outreach measures, identify monitoring and reporting procedures to track compliance, and discuss methods to reevaluate and improve the WSCP. Poway's WSCP is provided in this UWMP as **Appendix G**.

The purpose of a WSCP is to establish water management requirements necessary to conserve water, enable effective water supply planning, and assure reasonable and beneficial use of water. The WSCP is also meant to prevent waste of water, unreasonable use of water, and unreasonable methods of water use. Additionally, the WSCP aims to assure adequate supplies of water are available to meet the needs of the public, and to further public health, safety, and welfare, while also recognizing that water is a scarce natural resource requiring careful management not only in times of drought, but at all times.

The City's *Water Conservation Plan* identifies four levels of action in response to a water supply shortage (Levels 1 through 4). To meet the new WSCP requirement outlined above, Poway elected to crosswalk its existing four stages (or levels) of action with the six standard stages. Poway's *Water Conservation Plan* defines the water use efficiency measures that are applicable at all times to all persons or businesses using City of Poway water, though the measures are not mandatory until Level 2 (or by separate, specific action of the Poway City Council at Level 1). Level 1 water conservation measures are voluntary and will be promoted through local and regional public education and awareness measures. During water conservation Levels 2 through 4, conservation measures and water-use restrictions are mandatory and become progressively restrictive in order to attain escalating conservation goals. Level 4 includes the City's strictest mandatory use restrictions to achieve a conservation target above 40%. Violations of the City's *Water Conservation Plan* may be subject to administrative, civil, and criminal penalties and remedies specified in *Chapter 8.94* and as provided elsewhere in the PMC.

7.2. Required Tables

The DWR-required tables for this section are included below and provided in Poway’s WSCP (refer to **Appendix G**).

Table 7-1 presents the six standard water shortage response levels and connects them to the stages outlined in Poway’s *Water Conservation Plan*.

Table 7-1: Stages of Water Shortage Contingency Plan

DWR Table 8-1: Retail - Stages of Water Shortage Contingency Plan			
Standard Level	Percent Supply Reduction	Poway Level	Shortage Response Actions
Level 1	up to 10%	Level 1 (up to 10%)	Level 1 corresponds to Poway Level 1. Includes voluntary water shortage actions to achieve demand reductions, such as providing refills at restaurants and laundering at hotels upon request only.
Level 2	up to 20%	Level 2 (up to 20%)	Level 2 corresponds to Poway Level 2. Mandates the voluntary actions included under Level 1 and includes additional measures focused on reducing outdoor water use such as limiting landscape irrigation for residential and commercial properties to a schedule, imposing time limits for lawn watering, and requiring covers for pools and spas.
Level 3	up to 30%	Level 3 (up to 40%)	Level 3 corresponds to Poway Level 3. Includes mandatory Level 1 and 2 actions and additional actions focused on reducing outdoor water use such as further limiting landscape irrigation for residential and commercial properties, prohibiting emptying and refilling of swimming pools and spas, and prohibiting vehicle washing except at facilities using recycled or recirculating water.
Level 4	up to 40%	Level 3 (up to 40%)	Level 4 corresponds to Poway Level 3. Refer to the description provided for Level 3 above.
Level 5	up to 50%	Level 4 (above 40%)	Level 5 corresponds to Poway Level 4. Includes mandatory Level 1, 2, 3, and 4 actions and additional actions focused on reducing outdoor water use such as prohibiting all landscape irrigation (with exceptions for commercial growers, nurseries, and other listed uses).
Level 6	above 50%	Level 4 (above 40%)	Level 6 corresponds to Poway Level 4. Refer to the description provided for Level 5 above.

Table 7-2 provides the response actions associated with each water shortage response level, a quantitative estimate of how much each action is anticipated to reduce demands, and whether the City of Poway enforces the measure with a penalty or charge.

Table 7-2: Restrictions and Prohibitions on End Users

DWR Table 8-2 Retail: Restrictions and Prohibitions on End Uses				
Level²	Demand Reduction Actions	Shortage Gap Reduction	Additional Explanation or Reference (<i>optional</i>)	Penalty, Charge, or Other Enforcement?
Level 1	Other - Prohibit use of potable water for washing hard surfaces	1%		No ¹
Level 1	Landscape - Restrict or prohibit runoff from landscape irrigation	0.1%		No
Level 1	Landscape - Limit landscape irrigation to specific times	4%	Irrigate residential and commercial landscapes, and nursery or commercial grower's products before 10 a.m. and after 6 p.m. only.	No
Level 1	Other - Require automatic shut of hoses	1%		No
Level 1	Water Features - Restrict water use for decorative water features, such as fountains	2%		No
Level 1	Wash vehicles only using a hand-held hose equipped with a positive shut-off nozzle and a bucket, or a high pressure/low volume wash system	< 0.1%		No
Level 1	CII - Lodging establishment must offer opt out of linen service	0.2%		No
Level 1	CII - Other CII restriction or prohibition	0.2%	Do not use single-pass cooling equipment in new commercial applications	No
Level 1	CII - Other CII restriction or prohibition	0.2%	Use a water recirculation system for commercial conveyor car washes and all new commercial laundry systems	No
Level 1	Other	1%	Run only fully loaded dishwashers and washing machines	No

DWR Table 8-2 Retail: Restrictions and Prohibitions on End Uses				
Level ²	Demand Reduction Actions	Shortage Gap Reduction	Additional Explanation or Reference (optional)	Penalty, Charge, or Other Enforcement?
Level 1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	1%	Repair all water leaks within five days of notification by the City of Poway	No
Level 1	Other - Prohibit use of potable water for construction and dust control	< 0.1%	Use recycled or non-potable water for construction purposes when available	No
Level 1	Landscape - Limit landscape irrigation to specific days	6%	Reset irrigation clocks as necessary to water once per week in winter and not more than three times per week in summer	No
Level 1	Pools - Allow filling of swimming pools only when an appropriate cover is in place.	1%	Add water to maintain the level of water in swimming pools and spas only when necessary. A pool cover shall be installed on all single-family residential pools and spas	No
Level 1	CII - Restaurants may only serve water upon request	0.2%		No
Level 2	Landscape - Limit landscape irrigation to specific days	8%	Landscape watering shall be conducted only in conformance with landscape watering schedules and restrictions for residential and commercial properties	Yes
Level 2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	1%	All leaks must be repaired within 72 hours of notification	Yes
Level 2	Water Features - Restrict water use for decorative water features, such as fountains	0.2%	If the mandatory reduction level is less than 15 percent, ornamental fountains or similar water features shall not be operated for more than six hours per day. If the mandatory reduction level is more than 15 percent, ornamental fountains shall not be operated unless reclaimed water is used	Yes
Level 2	Pools and Spas - Require covers for pools and spas	1%	If the mandatory reduction level is less than 15 percent, pool covers shall be encouraged but not required. If the mandatory reduction level is more than 15	Yes

DWR Table 8-2 Retail: Restrictions and Prohibitions on End Uses				
Level ²	Demand Reduction Actions	Shortage Gap Reduction	Additional Explanation or Reference (<i>optional</i>)	Penalty, Charge, or Other Enforcement?
			percent, pool covers will be required	
Level 3	Landscape - Limit landscape irrigation to specific days	12%	Landscape watering shall be conducted only in conformance with landscape watering schedules and restrictions for residential and commercial properties	Yes
Level 3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	1%	Vehicles shall not be washed except at commercial carwashes that recirculate water or by high pressure/low volume wash systems	Yes
Level 3	Other water feature or swimming pool restriction	2%	Emptying and refilling of swimming pools and spas is prohibited	Yes
Level 3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	2%	All leaks must be repaired within 48 hours of notification	Yes
Level 4	Landscape - Prohibit all landscape irrigation	24%	With the exception of crops and landscape products of commercial growers or nurseries	Yes
Level 4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	4%	All leaks must be repaired within 24 hours of notification	Yes

NOTES: ¹ Level 1 measures may be mandatory with a penalty when separate action is taken by City Council. Level 1 measures are mandatory under Level 2 through 4 water supply conditions. ² Mandatory water shortage restrictions enforced in previous stages also apply to the current stage unless the current stage includes an equivalent action to reflect stricter measures, in which case the stricter measure would apply.

Table 7-3 provides the consumption reduction measure implemented by the City of Poway to reduce water demands throughout its service area.

Table 7-3: Consumption Reduction Methods

DWR Table 8-3: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods			
Level	Supply Augmentation Methods by Water Supplier	Shortage Gap Reduction	Additional Explanation or Reference (optional)
All Levels	Offer Water Use Surveys	1%	
All Levels	Provide Rebates on Plumbing Fixtures and Devices	1%	
All Levels	Provide Rebates for Landscape Irrigation Efficiency	2%	
All Levels	Provide Rebates for Turf Replacement	1%	
Level 1	Expand Public Information Campaign	4%	Ask customers to voluntarily reduce water by 10 percent, inform customers of the water use efficiency measures, and encourage customers to utilize the water conservation incentives and programs offered by the City of Poway.
Levels 2, 3, and 4	Other	Variable	The City Council may establish water allocations for property receiving water service from the City of Poway.
Levels 2, 3, and 4	Implement or Modify Drought Rate Structure or Surcharge	2%	The City Council may implement a conservation rate structure
Levels 3, and 4	Moratorium or Net Zero Demand Increase on New Connections	Variable	

Chapter 8 Demand Management Measures

The City of Poway is committed to water use efficiency and conservation. Water conservation is a key component in Southern California’s strategy to meet water demand. The City of Poway has proactively supported water conservation through City, SDCWA, and MWD programs since the early 1990s. Poway includes water conservation and reclamation measures in its development review process in order to implement strategies set forth in the Poway General Plan.

The City of Poway had been a signatory member of the California Urban Water Conservation Council (CUWCC) since 1997 and prepared a biannual Best Management Practices Activity Report, which was also referred to as the CUWCC BMP Retail Coverage Report (BMP Report), up until 2015. The BMP Report was a good faith effort in implementing 14 urban water conservation Best Management Practices (BMPs) outlined by CUWCC that were intended to reduce long-term urban water demands. In light of the mandatory water conservation regulations from the State of California, the BMP reporting was discontinued and the CUWCC membership voted to allow the organization to sunset in 2018. Because the CUWCC was discontinued, Poway joined the California Water Efficiency Partnership (CalWEP), an organization that leads statewide urban water efficiency and conservation efforts through supporting and integrating innovative technologies and practices; encouraging effective public policies; advancing research, training, and public education; and building collaborate approaches and partnerships.

8.1. Demand Management Measures

The Water Code defines “Demand Management” as water conservation measures, programs, and incentives that prevent the waste of water and promote reasonable and efficient use and reuse of available supplies. Demand Management Measures (DMMs) are developed and implemented for the purpose of reducing overall demand on a water supplier. Water conservation can be a relatively low-cost way to augment water supply and it is a critical part of the San Diego region’s long-term strategy for meeting water demand. Water conservation measures have evolved over time. In the 1990s, DMMs were focused on reducing indoor water use, mainly through replacement of low-efficiency plumbing fixtures (e.g., toilets, showerheads) with more efficient, low-flow fixtures. Once significant reductions in indoor water use were realized as a result of fixture replacement, new measures focused on reducing outdoor water use were implemented and remain the primary focus of today’s DMMs.

Poway’s efforts to promote and achieve water conservation have included the DMMs specified by the California Water Code, as well as other programs tailored to meet the specific needs of Poway’s water customers. Poway has implemented DMMs by participating in the conservation efforts of the City’s two wholesale water suppliers, MWD and SDCWA. While Poway has offered some programs independently, most of Poway’s water conservation programs have been offered in partnership with MWD and SDCWA.

The City continues to enforce state-mandated water use prohibitions and encourage voluntary conservation measures. The prohibitions are listed on the City’s Water Conservation webpage (<https://www.poway.org/332/Water-Conservation>) and include prohibitions on using potable water to wash sidewalks and driveways, allowing runoff when watering with potable water, using hoses with no shutoff nozzles to wash cars, using potable water in decorative water features that do not recirculate the water, and watering outdoors during and within 48 hours following measurable rainfall.

According to the CWC §10631(e)(1)(B), the six core DMMs include: water waste prevention ordinances, metering, conservation pricing, public education and outreach, programs to assess and manage distribution system real loss, water conservation program coordination and staffing support and other demand management measures that have a significant impact on water use. The City of Poway has implemented these six core DMMs which are described in the following sections.

Water Waste Prevention Ordinances

Poway Municipal Code *Chapter 8.94 – Water Conservation Plan* establishes water use efficiency measures to prohibit wasteful water use. To comply with recent legislation, Poway has developed a water shortage contingency plan (WSCP) to supplement its *Water Conservation Plan*, which was adopted in May 2021. Poway has also complied with State-mandated water use restrictions as required such as using potable water to wash sidewalks and driveways, allowing runoff when watering with potable water, using hoses with no shutoff nozzles to wash cars, using potable water in decorative water features that do not recirculate the water, and watering outdoors during and within 48 hours following measurable rainfall. Details of the Water Conservation Plan can be found in **Chapter 7: Water Shortage Contingency Planning**, and in **Appendix G**.

Implementation over the Past Five Years

In response to the historic drought, the City had declared a Level 2 Water Shortage Alert in June of 2014 through February of 2017. This declaration imposed the mandatory water waste prohibitions associated with Stage 2 (Water Shortage Alert) as described in **Chapter 7**. Since February 2017, the District has imposed voluntary water waste prohibitions associated with Stage 1 (Water Shortage Watch).

Planned Implementation to Achieve Water Use Targets

If Poway declares a water shortage level in response to anticipated supply shortages, the City plans to continue enforcing the mandatory water waste prohibitions in Stages 2 to 4 of its water shortage contingency plan. The City will determine the appropriate water shortage level based on the shortage level and corresponding conservations actions enacted by SDCWA.

Water Metering

All City of Poway service connections are metered and billed by volume of use. Meters are read and customers are charged bi-monthly. In addition to a variable commodity rate, there is also a fixed charge. In the beginning of 2015, for single family residential customers, the City had a two-tiered inclining block rate structure from 1-199 units and 200+ units. The rate per unit of water (one hundred cubic feet) increases as the amount of water use increases. By March of 2019, the block structure increased from two-tiers to three-tiers with 1-20 units, 21-56 units and 56+ units.

Implementation over the Past Five Years

The City has continued to meter all new connections. Additionally, the City is in the process of installing meters with remote reading capabilities. This allows the City to read water meters more effectively and efficiently. Currently there are nearly 1,400 of these meters installed across the City.

Planned Implementation to Achieve Water Use Targets

The City plans to continue metering all new connections.

Conservation Pricing

Water and sewer rates for City of Poway customers are set volumetrically based on quantity of water use. Single-family residential water rates are charged according to an inclining three-block rate structure to further encourage efficient water use. Sewer charges are also based on volume of water use.

Implementation over the Past Five Years

In January 2016, the City Council adopted Resolution 16-001, implementing a temporary drought recovery charge of \$0.75 per unit of water used. The drought recovery charge ended December 2018.

Planned Implementation to Achieve Water Use Targets

The City plans to continue implementing conservation pricing.

Public Education and Outreach

The SDCWA and MWD offer public education and outreach regionally. The City of Poway has its own tailored public outreach program which can be scaled in scope depending on need. Local public outreach efforts include newsletter articles, a detailed web site, street fair booths, landscape classes, a landscape contest, classroom visits, and presentations to community groups. In addition, the City of Poway has offered its own school education programs, including fourth-grade classroom presentations, a poster contest, water quality testing kits for sixth-grade through twelfth-grade classroom use, and funding of Splash Lab visits to local schools (a mobile water science laboratory).

Consistent with its focus to promote the long-term market transformation of conventional urban landscapes to more water-efficient and sustainable landscapes, SDCWA offers a variety of education and training opportunities for customers and landscape industry professionals. Course content is designed to promote best practices for landscape water-use efficiency while empowering customers to take action and make informed purchasing decisions when upgrading their landscapes. Trainings available to the City's customers include:

- **WaterSmart Landscape Makeover Series:** This series of four workshops provides homeowners with an overview and the basic skills necessary to successfully convert a traditional turf grass yard into a WaterSmart landscape. Participants receive technical assistance that includes a professional site inspection and development of a base plan to scale, in addition to a professional design consultation. Upon completion of the course, participants are provided with a landscape design with planting and irrigation plans that are ready for implementation.
- **WaterSmart Landscape Design for Homeowners Workshop:** This abbreviated three-hour version of the WaterSmart Landscape Makeover Series of classes accommodates higher numbers of participants per session, which helps to accelerate the number of homeowners empowered to convert existing water-intensive yards into landscapes that can achieve significant water savings through climate-appropriate plant choices, irrigation efficiency upgrades, and stormwater runoff prevention.
- **WaterSmart Landscape Makeover Videos on Demand:** To help make the WaterSmart Landscape Makeover Series content more widely available and convenient to access, SDCWA transformed this program into a series of online videos. These videos, as well as links to a

variety of resources, guide the participant through the steps needed to achieve a WaterSmart landscape.

- **Qualified Water-Efficient Landscaper (QWEL) Training:** This workforce training opportunity helps landscape industry professionals learn the latest techniques for landscape water-use efficiency. Originally developed by the Sonoma-Marín Saving Water Partnership, QWEL is recognized by the U.S. Environmental Protection Agency (EPA) as a WaterSense-labeled Professional Certification Program for Irrigation System Audits.



SDCWA's WaterSmart Landscape classes and design workshops are being hosted in Poway.

SDCWA has also developed tools and resources to inspire, educate, and empower residents and businesses to take water-efficient actions that they can build upon. Access to these tools and resources will foster long-term behavioral change and market transformation by showcasing the beauty and value of WaterSmart landscapes, products, and services. The tools and resources available to the City's customers through SDCWA include:

- **WaterSmartSD Website:** This website (WaterSmartSD.org) features information about water-saving devices and other incentives, tools, and programs designed to help make the most of the region's limited water supplies. The site is organized to provide content relevant to the residential and business sectors and also features news items and events, videos, a photo gallery, case studies, and other information about indoor and outdoor water-use efficiency.
- **eGuide to a WaterSmart Lifestyle:** The eGuide to a WaterSmart Lifestyle is an online magazine that covers a wide array of topics, including landscape design, water-efficient plants, outdoor rooms, finding and fixing leaks, healthy soil, smart buys on plumbing fixtures, landscape maintenance, and drought survival for gardens.
- **A Homeowner's Guide to a WaterSmart Landscape:** A Homeowner's Guide to a WaterSmart Landscape is the companion guide to the WaterSmart Landscape Makeover Series. This no-cost guide offers instructions for homeowners who want to make their landscapes more water-efficient. The guide reflects the State's Model Water-Efficient Landscape Ordinance standards and explains the principles of WaterSmart landscape design and irrigation, climate-appropriate plants, and BMPs.

- **WaterSmart Landscaping in San Diego County:** The WaterSmart Landscape web portal links viewers to an extensive plant database, inspirational gardens, tips and other landscape-related resources.

SDCWA also supports public gardens located within the San Diego region that inform and educate the surrounding communities about the role water conservation measures play in significantly reducing outdoor water use.

- **Water Conservation Garden:** The Water Conservation Garden opened in 1999 to educate the public about the steps they can take to conserve water in landscapes. It occupies nearly 6 acres adjacent to Cuyamaca College in the eastern part of the SDCWA's service area. The garden offers several programs and services targeted to both students and homeowners such as workshops on sustainability, school tours, the Ms. Smarty-Plants Youth Education Program, consultations on landscape design, irrigation tune-ups, and water harvesting, and many more.
- **San Diego Botanic Garden:** The SDCWA supports the Botanic Garden's vision through a corporate sponsorship. The mission of the Botanic Garden is to promote sustainable use of natural resources. Low-water-use plants and water-saving technologies and displays make up the majority of the Botanic Garden. The Botanic Garden also provides classes on water conservation and garden tours throughout the year in an effort to reduce outdoor water use.

Implementation over the Past Five Years

In response to the drought, the City's outreach campaign included the creation of customized water reports for single-family homes, meetings with multi-family and affordable housing properties, and direct outreach to the City's largest water consumers such as local schools. In January 2016, the City mailed water reports for every residential property as part of its water conservation outreach efforts. The informational reports provided the property's 2013 water use, an estimated water target (32% reduction of the property's 2013 water use), and actual annual water use. This information was provided to empower customers to easily compare current water use against Poway's State-mandated conservation target during the drought.

Planned Implementation to Achieve Water Use Targets

The City plans to continue its public education and outreach program. Public education and outreach will be scaled as needed depending on water supply conditions, as described in the City's Water Shortage Contingency Plan (**Appendix G**). The City is no longer mailing water reports to residential customers as of 2016.

Programs to Manage Distribution System Real Loss

The City diligently monitors and controls water system losses using standards set by the American Water Works Association (AWWA). According to the AWWA, the average water supplier experiences an annual water loss between 8% and 12% of its total demand. The City's lower than average water losses are partly a result of its program for meter testing and replacement.

Since 2016, the City has conducted an annual water system audit using the AWWA water audit methodology and submitted its water audit to the state. The audit is validated by a certified third-party validator and informs the City's water loss management activities.

Implementation over the Past Five Years

Water loss as potential system leakage was 5.2% in 2020 and 6.7% from 2015 through 2020, which is considered very good in the water industry. Between 2016 and 2020, 44% of meters sized at 3-inch to 8-inch were updated and 26 valves were replaced. Additionally, 24 priority large valves were replaced as a multi-year Capital Improvement Project. Updating aging infrastructure has assisted in the reduction of water loss throughout the distribution system.

Planned Implementation to Achieve Water Use Targets

The City plans to continue its water loss monitoring and meter testing and replacement programs.

Water Conservation Program Coordination and Staffing Support

A City of Poway employee from the Public Works Department is designated as the Water Conservation Coordinator. The City also maintains a Water Conservation webpage (<https://www.poway.org/332/Water-Conservation>), which lists the current water conservation shortage response measures and a contact phone number to report water waste (858-668-1215).

Implementation over the Past Five Years

The coordinator's position has been active at the City since 1997, as a part-time responsibility. The City's current conservation coordinator is Jessica Parks, jparks@poway.org, (858) 668-4703.

Planned Implementation to Achieve Water Use Targets

The City plans to continue designating an employee from its Public Works Department as the Water Conservation Coordinator.

Other Demand Management Measures

The City offers a variety of rebate and incentive programs in partnership with MWD and SDCWA. Rebate programs available to the City's customers within the past five years are described below.

Regional WaterSmart Turf Replacement and Sustainable Landscapes Program

Two regional, grant-funded turf replacement rebate programs were offered in partnership with SDCWA. The WaterSmart Turf Replacement Program, which ran from December 2012 to January 2016, promoted outdoor water-use efficiency through financial incentives of \$1.50 per square foot to participants who replaced existing water-intensive turf grass with WaterSmart landscapes that included climate-appropriate plants and water-efficient irrigation systems. The Sustainable Landscapes Incentive Program, which ran from October 2016 to June 2018, provided an incentive of up to \$1.75 per square foot to qualified residential sites (up to four dwelling units served by a single water meter) that replaced existing, water-intensive turf grass with alternative, water-efficient landscaping and incorporated storm water management practices.

SoCal WaterSmart Residential Program

The SoCal WaterSmart regional residential program offers rebates for qualifying indoor and outdoor products including high-efficiency clothes washers, premium high-efficiency toilets, weather-based irrigation controllers, rotating sprinkler nozzles, rain barrels, cisterns, and soil moisture sensor systems. Rebates are also available for customers who remove turf grass and replace it with a sustainable landscape.

SoCal Water\$mart Commercial, Industrial, and Institutional Program

The SoCal Water\$mart Commercial, Industrial, and Institutional (CII) program offers an incentive to eligible CII customers to remove existing water-intensive turf grass and replace it with water-efficient landscaping. The SoCal Water\$mart CII program also offers rebates to replace select, older, inefficient devices with water-efficient devices, including enhanced rebates for fixtures for fitness centers and rebates for public agencies for landscape devices.

Water Savings Incentive Program

The Water Savings Incentive Program provides financial incentives to high water use commercial, industrial, institutional, and agricultural customers to improve water-use efficiency through customized projects. Previous projects supported under the program include changing an industrial process water system to capture, treat and reuse process wastewater; installing new, water-efficient equipment in commercial kitchens and laundries; and contracting with a qualified water manager to improve landscape irrigation efficiency.

Audits and Surveys

SDCWA and its member agencies offer WaterSmart Checkups to help single- and multi-family customers and businesses identify water-saving opportunities specific to their sites. Certified landscape irrigation auditors evaluate a site's landscape and irrigation system and provide the customer with a list of recommendations to improve water efficiency, including plant alternatives and a proposed watering schedule. Residential sites also receive an indoor evaluation that identifies water-wasting fixtures and practices. This service is provided at no cost to the customer.

Landscape irrigation surveys provide no-cost, site-specific water-saving recommendations from certified irrigation professionals to qualified sites with one or more acres of irrigated landscape. Eligible landscapes include commercial and industrial sites; homeowner association common areas; and institutional sites such as schools, parks, and government facilities.

Agricultural Water Management Program

SDCWA's Agricultural Water Management Program has provided agricultural water management services since 1990. The Agricultural Water Management Program provides technical assistance to growers to enable them to irrigate crops as efficiently as possible to obtain the maximum economic benefit from limited water resources.

This program provides additional assistance through visual observations of the irrigation system, an examination of soil and crop materials, pump testing, and individual advice, and also includes an electrical conductivity (EC) mapping and soil sensor installation program to identify where irrigation efficiencies are expected to occur. Rebates of up to \$5,000 are available for property owners who purchase and install soil moisture sensors. This program is funded by a Proposition 84 Round 4 IRWM Implementation grant from DWR.

Water and Energy Efficiency Programs

SDCWA, its member agencies, and San Diego Gas & Electric (SDG&E) have worked together for 30 years to help homeowners in San Diego County increase water and energy efficiency. In June 2018, the SDCWA and SDG&E expanded this collaboration and entered into a program contract to share in the cost of plumbing devices and appliances that save both energy and water. Since then, almost 53,000 devices have been installed throughout the joint service area.

Another partnership between the SDCWA and SDG&E is the Energy Savings Assistance Program (ESA), a direct-installation program administered by SDG&E and its vendors to provide a variety of energy and water efficiency home upgrades to income-qualified homeowners and renters.

The WaterSmart Landscape Efficiency Program targeted a 20% reduction in water use at sites with multiple acres of irrigated landscape. The program achieved a portion of the water savings through a pre-implementation audit of the site’s irrigation system to identify and fix any malfunctioning and broken irrigation components. Another portion of the water savings was achieved through services provided by a water management service company that adjusted the site’s irrigation schedule to match irrigation demand. The program is currently being improved to address the reduction of stormwater runoff associated with dry weather flows and inefficient irrigation.

Implementation over the Past Five Years

Participation in each of the residential rebate programs offered by the City of Poway through the SDCWA and MWD WaterSmart Program over the last five years is described in **Table 8-1**.

Table 8-1: Summary of Poway’s Participation in Rebate and Incentive Programs

Program	City of Poway Participation (2016-2020)
Regional WaterSmart Turf Replacement and Sustainable Landscapes Programs	74 rebates issued for replacement of over 78,000 square feet of turf
SoCal Water\$mart Residential Program	855 rebates issued for installation of over 2,061 indoor and outdoor water-efficient devices, contributing to an estimated savings of nearly 246 acre-feet of water over the devices’ useful lives.
SoCal Water\$mart Commercial, Industrial, and Institutional (CII) Program	24 rebates issued for installation of over 9,029 indoor and outdoor water-efficient devices, contributing to an estimated savings of nearly 182 acre-feet of water over the devices’ useful lives.
Audits and Surveys	104 WaterSmart Checkups and 6 landscape irrigation surveys performed

Planned Implementation to Achieve Water Use Targets

The City plans to continue its residential rebate programs and MWD plans to continue its SoCal WaterSmart programs, so long as funding allows.

Chapter 9 Plan Adoption, Submittal, and Implementation

This section of the 2020 UWMP addresses the planned steps the City of Poway took to adopt this UWMP, submit it to DWR, and steps that will be taken should it prove necessary to amend this UWMP.

9.1. 2020 Water Use Data

This UWMP includes 2020 water use and planning data for the fiscal year.

9.2. Plan Noticing

On Tuesday, May 18, 2021 at 7:00 pm at the City Council Chambers, 13325 Civic Center Drive, Poway, California 92064, the City Council held a public hearing to receive input on the Draft WSCP. On Tuesday, June 1, 2021 at 7:00 pm at the City Council Chambers, the City Council held a public hearing to receive input on the Draft 2020 UWMP and Addendum to the 2015 UWMP on Delta Reliance. The WSCP, 2020 UWMP, and Addendum on Delta Reliance were adopted immediately following the respective public hearings. The 60-day notice of the public hearing (Notice) for the UWMP was provided to San Diego County and adjacent cities and other entities on March 9, 2021. The Notice is included in **Appendix B** and the notification list is summarized in **Table 9-1**.

Table 9-1: Notification of UWMP Preparation

Organization/Agency Name	60 Day Notice and Notice of Public Hearing
City of Escondido	X
City of San Diego	X
County of San Diego	X
San Diego Local Agency Formation Commission	X
Ramona Municipal Water District	X
San Diego Association of Governments	X
San Diego County Water Authority	X

To encourage active involvement of diverse social, cultural, and economic elements of the population within its service area, Poway posted copies of its Draft WSCP and Draft 2020 UWMP for review on its website and held public hearings to accept comments from the community. The Draft WSCP and 2020 UWMP were made available for public review at the City of Poway, Public Works Administration, 14467 Lake Poway Road, Poway, CA and on the City's website at www.poway.org/317. The Draft WSCP was available for public review between April 26, 2021 and May 18, 2021 and the Draft 2020 UWMP was available for public review between May 4, 2021 and June 1, 2021.

Pursuant to Government Code Section 6066, a Notice of Public Hearing was published once a week for two successive weeks prior to each public hearing. Notice of the time and place of the May 18, 2021 public hearing for adoption of the WSCP was provided in the *Poway News Chieftain* on May 6, 2021 and May 13, 2021. Notice of the time and place of the June 1, 2021 public hearing for adoption of the 2020 UWMP was provided in the *Poway News Chieftain* on May 20, 2021 and May 27, 2021 to

notify interested parties that the UWMP is available for review and the date/time of the public hearing.

9.3. Plan Adoption

The Poway City Council adopted the WSCP at a public hearing on May 18, 2021 and adopted the 2020 UWMP and Addendum to the 2015 UWMP on Delta Reliance at a public hearing on June 1, 2021. Pursuant to the Governor's Executive Order N-29-20, a local legislative body is authorized to hold public meetings via teleconferencing and to make public meetings accessible telephonically or otherwise electronically to all members of the public seeking to observe and to address the local legislative body, during the period in which local public officials impose measures to promote social distancing. As such, the public hearing was held at the Poway City Council Chambers located at 13325 Civic Center Drive, Poway, CA 92064; however, the Council Chambers was not open to the public. Remote public participation was encouraged by visiting www.poway.org/meeting. During the notification process, discussed in **Section 9.2**, the public was encouraged to participate in the review of the Draft UWMP and to submit questions or comments to the City Council. Copies of the Notice of Public Hearing published in the *Poway News Chieftain*, the City Council agenda report, and the signed resolution of adoption are included in **Appendix I**.

9.4. Plan Submittal

The adopted 2020 UWMP and WSCP was submitted to DWR, the State of California Library, the County of San Diego, and the SDCWA by July 1, 2021. Poway's adopted WSCP and 2020 UWMP were made available on the City's web site at www.poway.org/317 and at the Public Works Administration Building, located at 14446 Lake Poway Road, Poway, CA, 92064.

9.5. Plan Amendment

If an amendment to this UWMP is necessary due to changing water supply conditions within the City and/or comments from DWR, the City Council will recirculate all required public notices and host a public hearing to consider public comments prior to approval of the amendment.

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Appendices

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Appendix A. DWR UWMP Checklist

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Appendix A - DWR UWMP Checklist

UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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
x	x	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	Executive Summary
x	x	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	Section 1.1

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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	Section 1.2
x	x	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	Section 9.2
x		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	Section 1.2

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
	x	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	N/A
x	x	Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Section 2.2
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 2.5
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 2.3
x	x	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 2.4
x	x	Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Section 2.3, Section 4.3
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 2.4

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 3.1
x	x	Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 3.2
x	x	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	Section 3.3
x	x	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	Section 3.1
x	optional	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	Section 3.2
x	optional	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	Section 3.4
x	x	Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Section 6.4

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		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 4
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 4.6
	x	Section 5.1	10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	N/A
x		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	N/A (no adjustments)

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		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	Section 4.5
x		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	Section 4.6, Appendix E
x	x	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	Section 6.3, Section 6.4
x	x	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, <i>including changes in supply due to climate change.</i>	System Supplies	Section 6.3, Section 6.4

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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	Section 5.1
x	x	Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Section 5.8
x	x	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	Section 5.9
x	x	Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 5.2
x	x	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	Section 5.2
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	N/A

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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	N/A
x	x	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	N/A
x	x	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	N/A
x	x	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	N/A
x	x	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	Section 5.7

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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)	Section 5.5
x	x	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 5.5
x	x	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)	Section 5.5
x	x	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)	Section 5.5
x	x	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)	Section 5.5

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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)	Section 5.5
x	x	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 5.6
x	x	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)	Section 5.5
x	x	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	Section 5.8
x	x	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	Section 5.11, Appendix F

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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	Section 6.1, Section 6.2
x	x	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	Section 6.1, Section 6.2
x	x	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	Section 6.3
x	x	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	Section 6.4

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 6.4
x	x	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Section 6.3, Section 6.4
x	x	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	Section 6.4
x	x	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	Section 6.4
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Chapter 7, Appendix G

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Chapter 6
x	x	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 G
x	x	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 G
x	x	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 G

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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 G
x	x	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	Appendix G
x	x	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 G
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Chapter 8

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix G
x	x	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 G
x	x	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 G
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Appendix G
x	x	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 G
x	x	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 G

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		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 G
x	x	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 G
x	x	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	Appendix G
x	x	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	Appendix G
x	x	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 G
x	x	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 G

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		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	Appendix G
x		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 G
x		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 G
x	x	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	Chapter 9

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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	Chapter 9
	x	Sections 9.1 and 9.3	10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	N/A
x		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 8
x		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 9

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	Section 9.2
x	x	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	Section 9.4
x	x	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	Section 9.2, Section 9.3
x	x	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	Section 9.2
x	x	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	Section 9.3

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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	Section 9.4
x	x	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	Section 9.4
x	x	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	Section 9.4, Section 9.5
x	x	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	Section 9.4
x	x	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	Chapter 9

Appendix A - DWR UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	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	N/A
x	x	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	Section 9.5

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Appendix B. Notification Letter to Cities, Counties, Agencies, and Other Organizations

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CITY OF POWAY

STEVE VAUS, Mayor
BARRY LEONARD, Deputy Mayor
CAYLIN FRANK, Councilmember
DAVE GROSCH, Councilmember
JOHN MULLIN, Councilmember



60-DAY PUBLIC HEARING NOTICE 2020 URBAN WATER MANAGEMENT PLAN

Ramona Municipal Water District
Mr. David Barnum, General Manager
100 Earlham Street
Ramona, CA 92065

March 9, 2021

This letter is to inform you that City of Poway (City) is updating its Urban Water Management Plan (UWMP). California state law requires each urban water supplier to prepare and adopt an UWMP every five years. Updates have been made to the 2015 UWMP to prepare the 2020 UWMP, which is due to the Department of Water Resources by July 1, 2021. The Plan documents the City's plans to ensure adequate water supplies to meet existing and future demands for water under a range of water supply conditions, including water shortages.

In conformance with the California Water Code Division 6, Part 2.6, §10621, this letter serves as a notification to all city and county agencies within which the City provides water supplies that the UWMP is being reviewed and updated. The draft 2020 UWMP will be available for public review on May 18, 2021 via the City's website (www.poway.org/317) and a public hearing will be held on **Tuesday, June 1, 2021 at 7:00pm.**

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Please contact me at (858) 668-4703 or jparks@poway.org if you would like additional information or to set up a meeting to discuss the 2020 UWMP.

Sincerely,

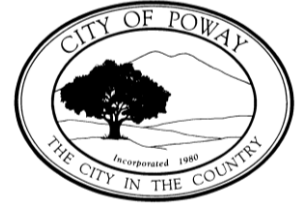
City of Poway



Jessica Parks
Utilities Administrator
City of Poway Public Works Department

CITY OF POWAY

STEVE VAUS, Mayor
BARRY LEONARD, Deputy Mayor
CAYLIN FRANK, Councilmember
DAVE GROSCH, Councilmember
JOHN MULLIN, Councilmember



60-DAY PUBLIC HEARING NOTICE 2020 URBAN WATER MANAGEMENT PLAN

San Diego County Water Authority
Ms. Kelley Gage, Water Resources Director
4677 Overland Avenue
San Diego, CA 92123

March 9, 2021

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Please contact me at (858) 668-4703 or jparks@poway.org if you would like additional information or to set up a meeting to discuss the 2020 UWMP.

Sincerely,

City of Poway

A handwritten signature in black ink that reads "J Parks".

Jessica Parks
Utilities Administrator
City of Poway Public Works Department

CITY OF POWAY

STEVE VAUS, Mayor
BARRY LEONARD, Deputy Mayor
CAYLIN FRANK, Councilmember
DAVE GROSCH, Councilmember
JOHN MULLIN, Councilmember



60-DAY PUBLIC HEARING NOTICE 2020 URBAN WATER MANAGEMENT PLAN

County of San Diego
Mr. Mark Wardlaw, Director of Planning and Land Use
5510 Overland Avenue Suite 310
San Diego, CA 92123

March 9, 2021

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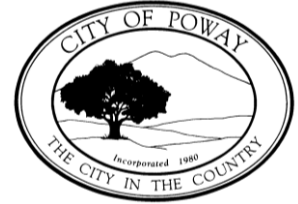
City of Poway

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Jessica Parks
Utilities Administrator
City of Poway Public Works Department

CITY OF POWAY

STEVE VAUS, Mayor
BARRY LEONARD, Deputy Mayor
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DAVE GROSCH, Councilmember
JOHN MULLIN, Councilmember



60-DAY PUBLIC HEARING NOTICE 2020 URBAN WATER MANAGEMENT PLAN

City of San Diego
Ms. Shauna Lorance, Director of Public Utilities
525 B Street
San Diego, CA 92101

March 9, 2021

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Sincerely,

City of Poway

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Jessica Parks
Utilities Administrator
City of Poway Public Works Department

CITY OF POWAY

STEVE VAUS, Mayor
BARRY LEONARD, Deputy Mayor
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DAVE GROSCH, Councilmember
JOHN MULLIN, Councilmember



60-DAY PUBLIC HEARING NOTICE 2020 URBAN WATER MANAGEMENT PLAN

San Diego Association of Governments
Mr. Hasan Ikhata, Executive Director
401 B Street Suite 800
San Diego, CA 92101

March 9, 2021

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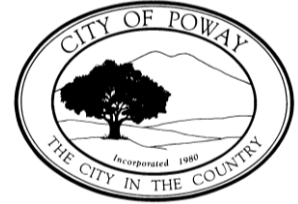
City of Poway



Jessica Parks
Utilities Administrator
City of Poway Public Works Department

CITY OF POWAY

STEVE VAUS, Mayor
BARRY LEONARD, Deputy Mayor
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DAVE GROSCH, Councilmember
JOHN MULLIN, Councilmember



60-DAY PUBLIC HEARING NOTICE 2020 URBAN WATER MANAGEMENT PLAN

San Diego Local Area Formation Commission
Keene Simonds, Executive Director
9335 Hazard Way Suite 200
San Diego, CA 92123

March 9, 2021

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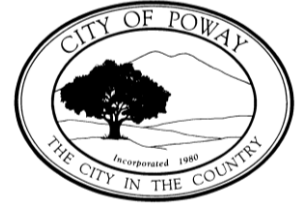
City of Poway

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60-DAY PUBLIC HEARING NOTICE 2020 URBAN WATER MANAGEMENT PLAN

City of Escondido
Mr. Christopher W. McKinney, Director of Utilities
201 North Broadway Second Floor
Escondido, CA 92025

March 9, 2021

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City of Poway



Jessica Parks
Utilities Administrator
City of Poway Public Works Department

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Appendix C. DWR Submittal Tables

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Appendix C - DWR Submittal Tables

Submittal Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 *
<i>Add additional rows as needed</i>			
CA3710015	Poway, City of	14,195	9,185
TOTAL		14,195	9,185
* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.			
NOTES:			

Appendix C - DWR Submittal Tables

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

Appendix C - DWR Submittal Tables

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
<input type="checkbox"/>	Supplier is a wholesaler
<input checked="" type="checkbox"/>	Supplier is a retailer
Fiscal or Calendar Year (select one)	
<input type="checkbox"/>	UWMP Tables are in calendar years
<input checked="" type="checkbox"/>	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
7/1	
Units of measure used in UWMP * (select from drop down)	
Unit	AF
* <i>Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</i>	
NOTES: Fiscal year reporting from 7/1/2019 to 6/30/2020	

Appendix C - DWR Submittal Tables

Submittal Table 2-4 Retail: Water Supplier Information Exchange
The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name
<i>Add additional rows as needed</i>
San Diego County Water Authority
NOTES:

Appendix C - DWR Submittal Tables

Submittal Table 3-1 Retail: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045(opt)
	49,062	50,960	50,960	50,960	50,971	51,176
NOTES: SANDAG 2050 Regional Growth Forecast, Series 14 (Version 17) - modified to remove East Poway population not served by municipal system; 2020 value from DOF minus East Poway population.						

Appendix C - DWR Submittal Tables

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable ¹ Water - Actual			
Use Type	2020 Actual		
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume ²
Add additional rows as needed			
Single Family		Drinking Water	5,533
Multi-Family		Drinking Water	425
Commercial		Drinking Water	1,168
Industrial		Drinking Water	102
Landscape		Drinking Water	441
Landscape	Raw Water for Golf Course	Raw Water	516
Agricultural irrigation		Drinking Water	36
Losses		Drinking Water	474
Sales/Transfers/Exchanges to other Suppliers	Sales to SDCWA (for Ramona MWD)	Drinking Water	79
TOTAL			8,774
¹ Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. ² Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.			
NOTES: 1. Commercial use includes institutional use and special district facilities, such as schools, churches, and the hospital. 2. Landscape use includes metered irrigation, minus recycled water irrigation use, plus potable water added to supplement recycled water demands.			

Appendix C - DWR Submittal Tables

Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)						
	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable <i>From Tables 4-1R and 4-2 R</i>	8,774	10,087	10,344	10,589	10,717	11,046
Recycled Water Demand ¹ <i>From Table 6-4</i>	411	450	450	450	450	450
Optional Deduction of Recycled Water Put Into Long-Term Storage ²						
TOTAL WATER USE	9,185	10,537	10,794	11,039	11,167	11,496
<p>¹ Recycled water demand fields will be blank until Table 6-4 is complete ² Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier may deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3.</p>						
NOTES:						

Appendix C - DWR Submittal Tables

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss ^{1,2}
01/2015	668
01/2016	528
07/2017	591
07/2018	722
07/2019	474
¹ Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet. ²	
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.	
NOTES: Does not include authorized unmetered flows.	

Appendix C - DWR Submittal Tables

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i>	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	Sections 3.3 and 3.4
Are Lower Income Residential Demands Included In Projections? <i>Drop down list (y/n)</i>	Yes
NOTES:	

Appendix C - DWR Submittal Tables

Submittal Table 5-1 Baselines and Targets Summary From SB X7-7 Verification Form <i>Retail Supplier or Regional Alliance Only</i>				
Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	<i>1999</i>	<i>2008</i>	<i>263</i>	<i>210</i>
5 Year	<i>2003</i>	<i>2007</i>	<i>264</i>	
<i>*All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)</i>				
NOTES: 				

Appendix C - DWR Submittal Tables

Submittal Table 5-2: 2020 Compliance SB X7-7 2020 Compliance Form <i>Retail Supplier or Regional Alliance Only</i>				From
2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* <i>(Adjusted if applicable)</i>		
<i>167</i>	<i>0</i>	<i>0</i>	<i>210</i>	<i>Y</i>
<i>*All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)</i>				
NOTES:				

Appendix C - DWR Submittal Tables

Submittal Table 6-1 Retail: Groundwater Volume Pumped						
<input checked="" type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
<input type="checkbox"/>	All or part of the groundwater described below is desalinated.					
Groundwater Type Drop Down List <i>May use each category multiple times</i>	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
<i>Add additional rows as needed</i>						
TOTAL		0	0	0	0	0
* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.						
NOTES:						

Appendix C - DWR Submittal Tables

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020						
<input type="checkbox"/>	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2020 service area covered by wastewater collection system <i>(optional)</i>					
	Percentage of 2020 service area population covered by wastewater collection system <i>(optional)</i>					
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i> <i>Drop Down List</i>
City of Poway	Metered	3,195	San Diego Metropolitan Wastewater Department	North City Water Reclamation Plant (NCWRP)	No	
City of Poway	Estimated	64	City of Escondido	Hale Avenue Resource Recovery Facilities (HARRF)	No	
Total Wastewater Collected from Service Area in 2020:		3,259				
* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.						
NOTES:						

Appendix C - DWR Submittal Tables

Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020											
<input checked="" type="checkbox"/>	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.										
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional) ²	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area? <i>Drop down list</i>	Treatment Level <i>Drop down list</i>	2020 volumes ¹				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
									411		
Total							0	0	0	411	0

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

² If the **Wastewater Discharge ID Number** is not available to the UWMP preparer, access the SWRCB CIWQS regulated facility website at <https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=RegulatedFacility>

NOTES: No wastewater is treated within Poway's service area.

Appendix C - DWR Submittal Tables

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area											
<input type="checkbox"/>	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.										
Name of Supplier Producing (Treating) the Recycled Water:			City of San Diego, North City Water Reclamation Plant								
Name of Supplier Operating the Recycled Water Distribution System:			City of Poway								
Supplemental Water Added in 2020 (volume) <i>Include units</i>			99 APY								
Source of 2020 Supplemental Water			City of Poway, potable water								
Beneficial Use Type <i>additional rows if needed.</i>	<i>Insert</i>	Potential Beneficial Uses of Recycled Water (Describe)	Amount of Potential Uses of Recycled Water (Quantity) <i>Include volume units¹</i>	General Description of 2020 Uses	Level of Treatment <i>Drop down list</i>	2020 ¹	2025 ¹	2030 ¹	2035 ¹	2040 ¹	2045 ¹ (opt)
Agricultural irrigation											
Landscape irrigation <i>(exc golf courses)</i>		Landscape irrigation <i>(excludes golf courses)</i>	400-500	Irrigation in Business Park	Tertiary	411	450	450	450	450	450
Golf course irrigation											
Commercial use											
Industrial use											
Geothermal and other energy production											
Seawater intrusion barrier											
Recreational impoundment											
Wetlands or wildlife habitat											
Groundwater recharge (IPR)											
Reservoir water augmentation (IPR)											
Direct potable reuse											
Other (Description Required)											
2020 Internal Reuse						411	450	450	450	450	450
¹ <i>Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</i>											
NOTES: Recycled water purchases based on contract agreement with the City of San Diego and potential for development of additional areas of the Business Park.											

Appendix C - DWR Submittal Tables

Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual

<input type="checkbox"/>	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.
--------------------------	---

Beneficial Use Type	2015 Projection for 2020 ¹	2020 Actual Use ¹
<i>Insert additional rows as needed.</i>		
Agricultural irrigation		
Landscape irrigation (exc golf courses)	645	411
Golf course irrigation		
Commercial use		
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Reservoir water augmentation (IPR)		
Direct potable reuse		
Other (Description Required)		
Total	645	411

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

NOTE:

Appendix C - DWR Submittal Tables

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
<input type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
5-11	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use *
<i>Add additional rows as needed</i>			
Assist customers with retrofit costs	The City may offer rebates or financing to offset the cost of switching to recycled water use	2020-2035	177
Total			177
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.			
NOTES: Based on planned Community Road and Pomerado Road expansion projects.			

Appendix C - DWR Submittal Tables

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
<input type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
<input checked="" type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
5-12	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down List</i>	Expected Increase in Water Supply to Supplier* <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Supplier Name</i>				
<i>Add additional rows as needed</i>						
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.						
NOTES: Beginning in 2035, a conceptual indirect potable reuse (IPR) project [North County One Water Program] is anticipated to provide approximately 2,000 AFY of additional local water supply to the City.						

Appendix C - DWR Submittal Tables

Submittal Table 6-8 Retail: Water Supplies — Actual				
Water Supply		2020		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Additional Detail on Water Supply	Actual Volume*	Water Quality Drop Down List
Add additional rows as needed				
Purchased or Imported Water	Purchased raw water from SDCWA	9,374	Raw Water	--
Recycled Water	Purchased Recycled Water from the City of San Diego	411	Recycled Water	--
Total		9,785		0
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.				
NOTES:				

Appendix C - DWR Submittal Tables

Submittal Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply * Report To the Extent Practicable									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		2025		2030		2035		2040		2045 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed											
Purchased or Imported Water	Purchased raw water from SDCWA	10,087		10,344		10,589		10,717		11,046	
Recycled Water	Purchased Recycled Water from the City of San Diego	450		450		450		450		450	
	Total	10,537	0	10,794	0	11,039	0	11,167	0	11,496	0
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.											
NOTES: 1. Purchased water supply based on projected water available per Table 2-8 of SDCWA's Draft 2020 UWMP. 2. Recycled water supply is based on Appendix F (Table F-4) of the SDCWA's Draft 2020 UWMP and the agreement with the City of San Diego. 3. Beginning in 2035, a conceptual indirect potable reuse (IPR) project [North County One Water Program] is anticipated to provide approximately 2,000 AFY of additional local water supply to the City.											

Appendix C - DWR Submittal Tables

Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)			
Year Type	Base Year <small>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020</small>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	% of Average Supply
Average Year	1986-2018		100%
Single-Dry Year	2015		107%
Consecutive Dry Years 1st Year	2011		107%
Consecutive Dry Years 2nd Year	2012		108%
Consecutive Dry Years 3rd Year	2013		108%
Consecutive Dry Years 4th Year	2014		108%
Consecutive Dry Years 5th Year	2015		109%
<i>Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.</i>			
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.			
NOTES:			

Appendix C - DWR Submittal Tables

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals (autofill from Table 6-9)	10,537	10,794	11,039	11,167	11,496
Demand totals (autofill from Table 4-3)	10,537	10,794	11,039	11,167	11,496
Difference	0	0	0	0	0
NOTES:					

Appendix C - DWR Submittal Tables

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals*	11,253	11,527	11,789	11,926	12,277
Demand totals*	11,253	11,527	11,789	11,926	12,277
Difference	0	0	0	0	0
<i>*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</i>					
NOTES:					

Appendix C - DWR Submittal Tables

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	11,304	11,580	11,843	11,980	12,333
	Demand totals	11,304	11,580	11,843	11,980	12,333
	Difference	0	0	0	0	0
Second year	Supply totals	11,345	11,622	11,886	12,024	12,378
	Demand totals	11,345	11,622	11,886	12,024	12,378
	Difference	0	0	0	0	0
Third year	Supply totals	11,386	11,664	11,929	12,067	12,422
	Demand totals	11,386	11,664	11,929	12,067	12,422
	Difference	0	0	0	0	0
Fourth year	Supply totals	11,428	11,707	11,973	12,112	12,469
	Demand totals	11,428	11,707	11,973	12,112	12,469
	Difference	0	0	0	0	0
Fifth year	Supply totals	11,444	11,723	11,989	12,128	12,485
	Demand totals	11,444	11,723	11,989	12,128	12,485
	Difference	0	0	0	0	0
Sixth year <i>(optional)</i>	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.						
NOTES:						

Appendix C - DWR Submittal Tables

Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)	
2021	Total
Total Water Use	10,211
Total Supplies	10,211
Surplus/Shortfall w/o 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 % Use Reduction from WSCP action	0%
2022	Total
Total Water Use	10,893
Total Supplies	10,893
Surplus/Shortfall w/o 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 % Use Reduction from WSCP action	0%
2023	Total
Total Water Use	11,595
Total Supplies	11,595
Surplus/Shortfall w/o 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 % Use Reduction from WSCP action	0%
2024	Total
Total Water Use	12,320
Total Supplies	12,320
Surplus/Shortfall w/o 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 % Use Reduction from WSCP action	0%
2025	Total
Total Water Use	13,171
Total Supplies	13,171
Surplus/Shortfall w/o 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 % Use Reduction from WSCP action	0%

Appendix C - DWR Submittal Tables

Submittal Table 8-1 Water Shortage Contingency Plan Levels		
Shortage Level	Percent Shortage Range	Shortage Response Actions <i>(Narrative description)</i>
1	Up to 10%	Level 1 corresponds to Poway Level 1. Includes voluntary water shortage actions to achieve demand reductions, such as providing refills at restaurants and laundering at hotels upon request only.
2	Up to 20%	Level 2 corresponds to Poway Level 2. Mandates the voluntary actions included under Level 1 and includes additional measures focused on reducing outdoor water use such as limiting landscape irrigation for residential and commercial properties to a schedule, imposing time limits for lawn watering, and requiring covers for pools and spas.
3	Up to 30%	Level 3 corresponds to Poway Level 3. Includes mandatory Level 1 and 2 actions and additional actions focused on reducing outdoor water use such as further limiting landscape irrigation for residential and commercial properties, prohibiting emptying and refilling of swimming pools and spas, and prohibiting vehicle washing except at facilities using recycled or recirculating water.
4	Up to 40%	Level 4 corresponds to Poway Level 3. Refer to the description provided for Level 3 above.
5	Up to 50%	Level 5 corresponds to Poway Level 4. Includes mandatory Level 1, 2, 3, and 4 actions and additional actions focused on reducing outdoor water use such as prohibiting all landscape irrigation (with exceptions for commercial growers, nurseries, and other listed uses).
6	>50%	Level 6 corresponds to Poway Level 4. Refer to the description provided for Level 5 above.
NOTES:		

Appendix C - DWR Submittal Tables

Submittal Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUData online submittal tool. Select those that apply.</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>For Retail Suppliers Only Drop Down List</i>
<i>Add additional rows as needed</i>				
Level 1	Other - Prohibit use of potable water for washing hard surfaces	1%		No
Level 1	Landscape - Restrict or prohibit runoff from landscape irrigation	0.10%		No
Level 1	Landscape - Limit landscape irrigation to specific times	4%	Irrigate residential and commercial landscapes, and nursery or commercial grower's products before 10 a.m. and after 6 p.m. only.	No
Level 1	Other - Require automatic shut of hoses	1%		No
Level 1	Water Features - Restrict water use for decorative water features, such as fountains	2%		No
Level 1	Wash vehicles only using a hand-held hose equipped with a positive shut-off nozzle and a bucket, or a high pressure/low volume wash system	< 0.1%		No
Level 1	CII - Lodging establishment must offer opt out of linen service	0.20%		No
Level 1	CII - Other CII restriction or prohibition	0.20%	Do not use single-pass cooling equipment in new commercial applications	No
Level 1	CII - Other CII restriction or prohibition	0.20%	Use a water recirculation system for commercial conveyor car washes and all new commercial laundry systems	No
Level 1	Other	1%	Run only fully loaded dishwashers and washing machines	No
Level 1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	1%	Repair all water leaks within five days of notification by the City of Poway	No
Level 1	Other - Prohibit use of potable water for construction and dust control	< 0.1%	Use recycled or non-potable water for construction purposes when available	No
Level 1	Landscape - Limit landscape irrigation to specific days	6%	Reset irrigation clocks as necessary to water once per week in winter and not more than three times per week in summer	No
Level 1	Pools - Allow filling of swimming pools only when an appropriate cover is in place.	1%	Add water to maintain the level of water in swimming pools and spas only when necessary. A pool cover shall be installed on all single-family residential pools and spas	No
Level 1	CII - Restaurants may only serve water upon request	0.20%		No
Level 2	Landscape - Limit landscape irrigation to specific days	8%	Landscape watering shall be conducted only in conformance with landscape watering schedules and restrictions for residential and commercial properties	Yes
Level 2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	1%	All leaks must be repaired within 72 hours of notification	Yes
Level 2	Water Features - Restrict water use for decorative water features, such as fountains	0.20%	If the mandatory reduction level is less than 15 percent, ornamental fountains or similar water features shall not be operated for more than six hours per day. If the mandatory reduction level is more than 15 percent, ornamental fountains shall not be operated unless reclaimed water is used	Yes
Level 2	Pools and Spas - Require covers for pools and spas	1%	If the mandatory reduction level is less than 15 percent, pool covers shall be encouraged but not required. If the mandatory reduction level is more than 15 percent, pool covers will be required	Yes
Level 3	Landscape - Limit landscape irrigation to specific days	12%	Landscape watering shall be conducted only in conformance with landscape watering schedules and restrictions for residential and commercial properties	Yes
Level 3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	1%	Vehicles shall not be washed except at commercial carwashes that recirculate water or by high pressure/low volume wash systems	Yes
Level 3	Other water feature or swimming pool restriction	2%	Emptying and refilling of swimming pools and spas is prohibited	Yes
Level 3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	2%	All leaks must be repaired within 48 hours of notification	Yes
Level 4	Landscape - Prohibit all landscape irrigation	24%	With the exception of crops and landscape products of commercial growers or nurseries	Yes
Level 4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	4%	All leaks must be repaired within 24 hours of notification	Yes

NOTES: 1. Level 1 measures may be mandatory with a penalty when separate action is taken by City Council. Level 1 measures are mandatory under Level 2 through 4 water supply conditions. 2. Mandatory water shortage restrictions enforced in previous stages also apply to the current stage unless the current stage includes an equivalent action to reflect stricter measures, in which case the stricter measure would apply.

Appendix C - DWR Submittal Tables

Submittal Table 8-3: Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>
<i>Add additional rows as needed</i>			
All Levels	Offer Water Use Surveys	1%	
All Levels	Provide Rebates on Plumbing Fixtures and Devices	1%	
All Levels	Provide Rebates for Landscape Irrigation Efficiency	2%	
All Levels	Provide Rebates for Turf Replacement	1%	
Level 1	Expand Public Information Campaign	4%	Ask customers to voluntarily reduce water by 10 percent, inform customers of the water use efficiency measures, and encourage customers to utilize the water conservation incentives and programs offered by the City of Poway.
Levels 2, 3, and 4	Other	Variable	The City Council may establish water allocations for property receiving water service from the City of Poway.
Levels 2, 3, and 4	Implement or Modify Drought Rate Structure or Surcharge	2%	The City Council may implement a conservation rate structure
Levels 3, and 4	Moratorium or Net Zero Demand Increase on New Connections	Variable	
NOTES:			


Appendix C - DWR Submittal Tables

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

Appendix D. AWWA Water Loss Audits

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Appendix D - AWWA Water Loss Audits



AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association
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Water Audit Report for: City of Poway (CA3710015)

Reporting Year: 2020 7/2019 - 6/2020

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

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

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

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

WATER SUPPLIED

Volume from own sources:	+	?	1	112.300	acre-ft/yr
Water imported:	+	?	7	8,625.800	acre-ft/yr
Water exported:	+	?	7	79.200	acre-ft/yr
WATER SUPPLIED:				8,658.900	acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+	?	7	7,697.680	acre-ft/yr
Billed unmetered:	+	?	n/a	0.000	acre-ft/yr
Unbilled metered:	+	?	10	140.665	acre-ft/yr
Unbilled unmetered:	+	?	10	91.950	acre-ft/yr
AUTHORIZED CONSUMPTION:				7,930.295	acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

728.604 acre-ft/yr

Apparent Losses

Unauthorized consumption:	+	?		21.647	acre-ft/yr
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed					
Customer metering inaccuracies:	+	?	5	213.370	acre-ft/yr
Systematic data handling errors:	+	?	7	19.244	acre-ft/yr
Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed					
Apparent Losses:				254.262	acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:	?			474.342	acre-ft/yr
WATER LOSSES:				728.604	acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER:	?			961.220	acre-ft/yr
---------------------------	---	--	--	---------	------------

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+	?	8	278.6	miles
Number of <u>active AND inactive</u> service connections:	+	?	9	13,983	
Service connection density:	?			50	conn./mile main

Are customer meters typically located at the curbstop or property line? (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:	+	?	3	102.7	psi
-----------------------------	---	---	---	-------	-----

COST DATA

Total annual cost of operating water system:	+	?	10	\$19,752,775	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	10	\$5.51	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+	?	7	\$1,568.99	\$/acre-ft

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 74 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Water imported


2: Customer metering inaccuracies

3: Billed metered

AWWA Free Water Audit Software v5.0

Reporting Worksheet 1

Appendix D - AWWA Water Loss Audits



AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association

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Water Audit Report for: City of Poway (CA3710015)

Reporting Year: 2019 7/2018 - 6/2019

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

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

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

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

WATER SUPPLIED

Volume from own sources:	+	?	1	133.969	acre-ft/yr
Water imported:	+	?	7	8,677.100	acre-ft/yr
Water exported:	+	?	7	0.000	acre-ft/yr

WATER SUPPLIED: 8,777.213 acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	+	?	n/a	acre-ft/yr
Value:	+	?	5	0.39%

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

AUTHORIZED CONSUMPTION

Billed metered:	+	?	6	7,845.270	acre-ft/yr
Billed unmetered:	+	?	n/a	0.000	acre-ft/yr
Unbilled metered:	+	?	10	179.664	acre-ft/yr
Unbilled unmetered:	+	?	8	30.779	acre-ft/yr

AUTHORIZED CONSUMPTION: 8,055.713 acre-ft/yr

Click here: for help using option buttons below

Pcnt: Value: acre-ft/yr

Use buttons to select percentage of water supplied OR value

Pcnt: Value: acre-ft/yr

2.65% acre-ft/yr

0.25% acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

721.500 acre-ft/yr

Apparent Losses

Unauthorized consumption:	+	?	5	21.943	acre-ft/yr
---------------------------	---	---	---	--------	------------

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

Customer metering inaccuracies:	+	?	5	218.450	acre-ft/yr
Systematic data handling errors:	+	?	7	19.613	acre-ft/yr

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

Apparent Losses: 260.006 acre-ft/yr

Click here: for help using option buttons below

Pcnt: Value: acre-ft/yr

0.25% acre-ft/yr

2.65% acre-ft/yr

0.25% acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 461.494 acre-ft/yr

WATER LOSSES: 721.500 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 931.943 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+	?	8	288.8	miles
Number of active AND inactive service connections:	+	?	9	13,977	
Service connection density:	?			48	conn./mile main

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

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

Average operating pressure:	+	?	3	102.7	psi
-----------------------------	---	---	---	-------	-----

COST DATA

Total annual cost of operating water system:	+	?	10	\$23,097,825	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	9	\$8.78	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+	?	7	\$1,779.44	\$/acre-ft

WATER AUDIT DATA VALIDITY SCORE:
***** YOUR SCORE IS: 72 out of 100 *****

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

PRIORITY AREAS FOR ATTENTION:

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

1: Water imported


2: Billed metered

3: Customer metering inaccuracies

AWWA Free Water Audit Software v5.0

Reporting Worksheet 1

Appendix D - AWWA Water Loss Audits



AWWA Free Water Audit Software:
Reporting Worksheet

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Water Audit Report for: **City of Poway (CA3710015)**

Reporting Year: **2017-2018** 7/2017 - 6/2018

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

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

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

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

WATER SUPPLIED

Volume from own sources:	+	?	7	43.400	acre-ft/yr
Water imported:	+	?	7	10,457.790	acre-ft/yr
Water exported:	+	?	7	435.600	acre-ft/yr

WATER SUPPLIED: 9,992.700 acre-ft/yr

Master Meter and Supply Error Adjustments

	+	?	5	0.73%			acre-ft/yr
	+	?	5	0.73%			acre-ft/yr
	+	?	4	0.67%			acre-ft/yr

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

AUTHORIZED CONSUMPTION

Billed metered:	+	?	7	8,700.450	acre-ft/yr
Billed unmetered:	+	?	n/a	0.000	acre-ft/yr
Unbilled metered:	+	?	10	180.318	acre-ft/yr
Unbilled unmetered:	+	?	?	124.909	acre-ft/yr

Enter a positive value, otherwise a default percentage of 1.25% (of billed metered) is applied and a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: 9,005.677 acre-ft/yr

Click here: for help using option buttons below

Pcnt: Value: acre-ft/yr

Use buttons to select percentage of water supplied OR value

Pcnt: Value: acre-ft/yr

5.77% acre-ft/yr

0.25% acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

987.024 acre-ft/yr

Apparent Losses

Unauthorized consumption:	+	?		24.982	acre-ft/yr
---------------------------	---	---	--	--------	------------

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

Customer metering inaccuracies:	+	?	3	543.797	acre-ft/yr
Systematic data handling errors:	+	?	?	21.751	acre-ft/yr

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

Apparent Losses: 590.530 acre-ft/yr

Pcnt: Value: acre-ft/yr

0.25% acre-ft/yr

5.77% acre-ft/yr

0.25% acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 396.493 acre-ft/yr

WATER LOSSES: 987.024 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 1,292.250 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+	?	8	254.7	miles
Number of <u>active AND inactive</u> service connections:	+	?	9	20,547	
Service connection density:	?	?	?	81	conn./mile main

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

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

Average operating pressure:	+	?	3	102.7	psi
-----------------------------	---	---	---	-------	-----

COST DATA

Total annual cost of operating water system:	+	?	10		\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	9	\$9.53	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+	?	7	\$339.65	\$/acre-ft

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: Water imported

2: Customer metering inaccuracies

3: Billed metered

AWWA Free Water Audit Software v5.0

Reporting Worksheet 1

Appendix D - AWWA Water Loss Audits

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association
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 Click to add a comment

Water Audit Report for: **City of Poway (CA3710015)**

Reporting Year: **2016** **1/2016 - 12/2016**

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

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

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

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

WATER SUPPLIED

Volume from own sources:	+	?	1	75.970	acre-ft/yr
Water imported:	+	?	7	9,374.100	acre-ft/yr
Water exported:	+	?	7	328.600	acre-ft/yr
WATER SUPPLIED:				8,698.672	acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+	?	5	7,435.740	acre-ft/yr
Billed unmetered:	+	?	n/a	0.000	acre-ft/yr
Unbilled metered:	+	?	10	403.600	acre-ft/yr
Unbilled unmetered:	+	?	10	6.181	acre-ft/yr
AUTHORIZED CONSUMPTION:				7,845.521	acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

853.151 acre-ft/yr

Apparent Losses

Unauthorized consumption:	+	?	5	21.747	acre-ft/yr
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed					
Customer metering inaccuracies:	+	?	4	284.328	acre-ft/yr
Systematic data handling errors:	+	?	5	18.589	acre-ft/yr
Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed					
Apparent Losses:				324.664	acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:	?	528.487 acre-ft/yr			
WATER LOSSES:				853.151	acre-ft/yr

Master Meter and Supply Error Adjustments

	Pcnt:	Value:			
+	?	3	426.860	acre-ft/yr	
+	?	4	-0.02%	acre-ft/yr	
+	?	4	0.67%	acre-ft/yr	

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

Click here: for help using option buttons below

Use buttons to select percentage of water supplied OR value

	Pcnt:	Value:			
-	?	?	6.181	acre-ft/yr	
-	?	?	0.25%	acre-ft/yr	
-	?	?	3.50%	acre-ft/yr	
-	?	?	0.25%	acre-ft/yr	

NON-REVENUE WATER

NON-REVENUE WATER:	?	1,262.932 acre-ft/yr			
--------------------	---	-----------------------------	--	--	--

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+	?	9	313.0	miles	
Number of <u>active AND inactive</u> service connections:	+	?	9	13,930		
Service connection density:	?	45				conn./mile main

Are customer meters typically located at the curbside or property line? (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:	+	?	4	102.7	psi
-----------------------------	---	---	---	-------	-----

COST DATA

Total annual cost of operating water system:	+	?	10	19,023,240	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	9	\$5.44	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+	?	5	\$1,200.07	\$/acre-ft

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 68 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Water imported

2: Billed metered

3: Customer metering inaccuracies

AWWA Free Water Audit Software v5.0

Reporting Worksheet 1

Appendix D - AWWA Water Loss Audits

**AWWA Free Water Audit Software:
Reporting Worksheet**

WAS v5.0
American Water Works Association
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? Click to access definition

+ Click to add a comment

Water Audit Report for: **City of Poway**

Reporting Year: **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: ACRE-FEET PER YEAR

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

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

WATER SUPPLIED					
Volume from own sources:	+ ?	1	69.340	acre-ft/yr	
Water imported:	+ ?	7	8,386.123	acre-ft/yr	
Water exported:	+ ?	7	97.957	acre-ft/yr	
WATER SUPPLIED:			8,357.507	acre-ft/yr	

Master Meter and Supply Error Adjustments

	Pcnt:		Value:	
+ ?		n/a		acre-ft/yr
+ ?		n/a		acre-ft/yr
+ ?		4		acre-ft/yr

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

AUTHORIZED CONSUMPTION

Billed metered:	+ ?	5	7,498	acre-ft/yr	
Billed unmetered:	+ ?	n/a	0.000	acre-ft/yr	
Unbilled metered:	+ ?	10	188.9196	acre-ft/yr	
Unbilled unmetered:	+ ?	10	2.750	acre-ft/yr	
AUTHORIZED CONSUMPTION:			7,689.670	acre-ft/yr	

Click here: ?
for help using option buttons below

	Pcnt:		Value:	
+ ?				acre-ft/yr
			2.750	acre-ft/yr

Use buttons to select percentage of water supplied
OR
value

WATER LOSSES (Water Supplied - Authorized Consumption)

667.837 acre-ft/yr

Apparent Losses

Unauthorized consumption:	+ ?	5	20.894	acre-ft/yr	
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed					
Customer metering inaccuracies:	+ ?	4	209.061	acre-ft/yr	
Systematic data handling errors:	+ ?	5	18.745	acre-ft/yr	
Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed					
Apparent Losses:			248.699	acre-ft/yr	

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 419.138 acre-ft/yr

WATER LOSSES: 667.837 acre-ft/yr

Click here: ?
for help using option buttons below

	Pcnt:		Value:	
+ ?				acre-ft/yr
		0.25%		acre-ft/yr
		2.65%		acre-ft/yr
		0.25%		acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 859.507 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+ ?	9	289.0	miles
Number of <u>active AND inactive</u> service connections:	+ ?	9	13,917	
Service connection density:	?		48	conn./mile main

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

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

Average operating pressure:	+ ?	4	102.7	psi
-----------------------------	---	---	-------	-----

COST DATA

Total annual cost of operating water system:	+ ?	10	\$22,328,642	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	9	\$5.44	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ?	5	\$1,611.22	\$/acre-ft

*** YOUR SCORE IS: 69 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Water imported

2: Billed metered

3: Customer metering inaccuracies

AWWA Free Water Audit Software v5.0
Reporting Worksheet 1

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Appendix E. SB X7-7 Verification and Compliance Forms

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Appendix E - SB X7-7 Verification Form

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 Table 2-3

SB X7-7 Table-1: Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	14,150	Acre Feet
	2008 total volume of delivered recycled water	594	Acre Feet
	2008 recycled water as a percent of total deliveries	4.20%	Percent
	Number of years in baseline period ¹	10	Years
	Year beginning baseline period range	1999	
	Year ending baseline period range ²	2008	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range ³	2007	

¹ If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.

² The ending year must be between December 31, 2004 and December 31, 2010.

³ The ending year must be between December 31, 2007 and December 31, 2010.

Appendix E - SB X7-7 Verification Form

SB X7-7 Table 2: Method for Population Estimates

Method Used to Determine Population (may check more than one)	
<input type="checkbox"/>	1. Department of Finance (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	2. Persons-per-Connection Method
<input type="checkbox"/>	3. DWR Population Tool
<input checked="" type="checkbox"/>	4. Other DWR recommends pre-review

NOTES: The City used adjusted Census data for baseline population figures. For 2015 and population projections, the City used adjusted SANDAG population projections. The City received approval from DWR to use both of these population sources.

Appendix E - SB X7-7 Verification Form

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	1999	47,828
Year 2	2000	48,724
Year 3	2001	48,761
Year 4	2002	48,803
Year 5	2003	49,403
Year 6	2004	49,801
Year 7	2005	49,991
Year 8	2006	49,857
Year 9	2007	50,144
Year 10	2008	50,483
<i>Year 11</i>		
<i>Year 12</i>		
<i>Year 13</i>		
<i>Year 14</i>		
<i>Year 15</i>		
5 Year Baseline Population		
Year 1	2003	49,403
Year 2	2004	49,801
Year 3	2005	49,991
Year 4	2006	49,857
Year 5	2007	50,144
2015 Compliance Year Population		
	2015	48,773

Appendix E - SB X7-7 Verification Form

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

	Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>Fm SB X7-7 Table(s) 4-A</i>	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>Fm SB X7-7 Table 4-B</i>	Water Delivered for Agricultural Use	Process Water <i>Fm SB X7-7 Table(s) 4-D</i>	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1999	14,358	0	0	0	618	0	13,740
Year 2	2000	15,537	0	0	0	550	0	14,987
Year 3	2001	13,977	0	0	0	420	0	13,556
Year 4	2002	15,265	0	0	0	59	0	15,206
Year 5	2003	14,411	0	0	0	376	0	14,035
Year 6	2004	15,470	0	0	0	57	0	15,413
Year 7	2005	14,172	0	0	0	28	0	14,145
Year 8	2006	15,873	0	0	0	764	0	15,109
Year 9	2007	15,679	0	0	0	586	0	15,093
Year 10	2008	14,150	0	0	0	194	0	13,956
10 - 15 year baseline average gross water use								14,524
5 Year Baseline - Gross Water Use								
Year 1	2003	14,411	0	0	0	376	0	14,035
Year 2	2004	15,470	0	0	0	57	0	15,413
Year 3	2005	14,172	0	0	0	28	0	14,145
Year 4	2006	15,873	0	0	0	764	0	15,109
Year 5	2007	15,679	0	0	0	586	0	15,093
5 year baseline average gross water use								14,759
2015 Compliance Year - Gross Water Use								
	2015	8,774	0	0	0	30	0	8,744
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3								

Appendix E - SB X7-7 Verification Form

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

Complete one table for each source.

Name of Source		Source 1		
This water source is:				
<input type="checkbox"/>	The supplier's own water source			
<input checked="" type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment <i>* Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1999	14,358		14,358
Year 2	2000	15,537		15,537
Year 3	2001	13,977		13,977
Year 4	2002	15,265		15,265
Year 5	2003	14,411		14,411
Year 6	2004	15,470		15,470
Year 7	2005	14,172		14,172
Year 8	2006	15,873		15,873
Year 9	2007	15,679		15,679
Year 10	2008	14,150		14,150
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	2003	14,411		14,411
Year 2	2004	15,470		15,470
Year 3	2005	14,172		14,172
Year 4	2006	15,873		15,873
Year 5	2007	15,679		15,679
2015 Compliance Year - Water into Distribution System				
2015	8,774			8,774
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				

Appendix E - SB X7-7 Verification Form

SB X7-7 Table 4-C.1: Process Water Deduction Eligibility					
Criteria 1					
Industrial water use is equal to or greater than 12% of gross water use					
Baseline Year <i>Fm SB X7-7 Table 3</i>	Gross Water Use Without Process Water Deduction	Industrial Water Use	Percent Industrial Water	Eligible for Exclusion Y/N	
10 to 15 Year Baseline - Process Water Deduction Eligibility					
Year 1	1999	13,740	137	1%	NO
Year 2	2000	14,987	150	1%	NO
Year 3	2001	13,556	132	1%	NO
Year 4	2002	15,206	134	1%	NO
Year 5	2003	14,035	123	1%	NO
Year 6	2004	15,413	124	1%	NO
Year 7	2005	14,145	138	1%	NO
Year 8	2006	15,109	129	1%	NO
Year 9	2007	15,093	131	1%	NO
Year 10	2008	13,956	152	1%	NO
Year 11	0	#REF!			NO
Year 12	0	#REF!			NO
Year 13	0	#REF!			NO
Year 14	0	#REF!			NO
Year 15	0	#REF!			NO
5 Year Baseline - Process Water Deduction Eligibility					
Year 1	2003	14,035	123	1%	NO
Year 2	2004	15,413	124	1%	NO
Year 3	2005	14,145	138	1%	NO
Year 4	2006	15,109	129	1%	NO
Year 5	2007	15,093	131	1%	NO
2015 Compliance Year - Process Water Deduction Eligibility					
2015		8,744	107	1%	NO

Appendix E - SB X7-7 Verification Form

SB X7-7 Table 4-C.2: Process Water Deduction Eligibility					
Criteria 2					
Industrial water use is equal to or greater than 15 GPCD					
Baseline Year <i>Fm SB X7-7 Table 3</i>	Industrial Water Use	Population	Industrial GPCD	Eligible for Exclusion Y/N	
10 to 15 Year Baseline - Process Water Deduction Eligibility					
Year 1	1999	137	47,828	3	NO
Year 2	2000	150	48,724	3	NO
Year 3	2001	132	48,761	2	NO
Year 4	2002	134	48,803	2	NO
Year 5	2003	123	49,403	2	NO
Year 6	2004	124	49,801	2	NO
Year 7	2005	138	49,991	2	NO
Year 8	2006	129	49,857	2	NO
Year 9	2007	131	50,144	2	NO
Year 10	2008	152	50,483	3	NO
<i>Year 11</i>	0		0		NO
<i>Year 12</i>	0		0		NO
<i>Year 13</i>	0		0		NO
<i>Year 14</i>	0		0		NO
<i>Year 15</i>	0		0		NO
5 Year Baseline - Process Water Deduction Eligibility					
Year 1	2003	123	49,403	2	NO
Year 2	2004	124	49,801	2	NO
Year 3	2005	138	49,991	2	NO
Year 4	2006	129	49,857	2	NO
Year 5	2007	131	50,144	2	NO
2015 Compliance Year - Process Water Deduction Eligibility					
2015		107	48,773	2	NO

Appendix E - SB X7-7 Verification Form

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

Criteria 3

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

Baseline Year <i>Fm SB X7-7 Table 3</i>	Gross Water Use Without Process Water Deduction <i>Fm SB X7-7 Table 4</i>	Industrial Water Use	Non-industrial Water Use	Population <i>Fm SB X7-7 Table 3</i>	Non-Industrial GPCD	Eligible for Exclusion Y/N	
10 to 15 Year Baseline - Process Water Deduction Eligibility							
Year 1	1999	13,740	137	13,604	47,828	254	NO
Year 2	2000	14,987	150	14,837	48,724	272	NO
Year 3	2001	13,556	132	13,424	48,761	246	NO
Year 4	2002	15,206	134	15,072	48,803	276	NO
Year 5	2003	14,035	123	13,912	49,403	251	NO
Year 6	2004	15,413	124	15,289	49,801	274	NO
Year 7	2005	14,145	138	14,007	49,991	250	NO
Year 8	2006	15,109	129	14,980	49,857	268	NO
Year 9	2007	15,093	131	14,962	50,144	266	NO
Year 10	2008	13,956	152	13,804	50,483	244	NO
5 Year Baseline - Process Water Deduction Eligibility							
Year 1	2003	14,035	123	13,912	49,403	251	NO
Year 2	2004	15,413	124	15,289	49,801	274	NO
Year 3	2005	14,145	138	14,007	49,991	250	NO
Year 4	2006	15,109	129	14,980	49,857	268	NO
Year 5	2007	15,093	131	14,962	50,144	266	NO
2015 Compliance Year - Process Water Deduction Eligibility							
2015	8,744	107	8,637	48,773	158	NO	

Appendix E - SB X7-7 Verification Form

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

Criteria 4

Disadvantaged Community

Use IRWM DAC Mapping tool

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

California Median Household Income	Service Area Median Household Income	Percentage of Statewide Average	Eligible for Exclusion? Y/N
2015 Compliance Year - Process Water Deduction Eligibility			
2010	\$53,046	\$94,000	177%
			NO

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

Appendix E - SB X7-7 Verification Form

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1999	47,828	13,740	256
Year 2	2000	48,724	14,987	275
Year 3	2001	48,761	13,556	248
Year 4	2002	48,803	15,206	278
Year 5	2003	49,403	14,035	254
Year 6	2004	49,801	15,413	276
Year 7	2005	49,991	14,145	253
Year 8	2006	49,857	15,109	271
Year 9	2007	50,144	15,093	269
Year 10	2008	50,483	13,956	247
10-15 Year Average Baseline GPCD				263
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2003	49,403	14,035	254
Year 2	2004	49,801	15,413	276
Year 3	2005	49,991	14,145	253
Year 4	2006	49,857	15,109	271
Year 5	2007	50,144	15,093	269
5 Year Average Baseline GPCD				264
2015 Compliance Year GPCD				
2015		48,773	8,744	160

SB X7-7 Table 6: Gallons per Capita per Day <i>Summary From Table SB X7-7 Table 5</i>	
10-15 Year Baseline GPCD	263
5 Year Baseline GPCD	264
2015 Compliance Year GPCD	160

Appendix E - SB X7-7 Verification Form

SB X7-7 Table 7: 2020 Target Method

Select Only One

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

SB X7-7 Table 7-A: Target Method 1

20% Reduction

10-15 Year Baseline GPCD	2020 Target GPCD
263	210

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

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

Appendix E - SB X7-7 Verification Form

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

5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target*	Calculated 2020 Target <i>Fm Appropriate Target Table</i>	Confirmed 2020 Target
264	251	210	210
* Maximum 2020 Target is 95% of the 5 Year Baseline GPCD			

SB X7-7 Table 8: 2015 Interim Target GPCD

Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
210	263	236

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments (in GPCD)					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD		
160	236	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	0	160	160	YES

Appendix E - SB X7-7 Compliance Form

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:

Appendix E - SB X7-7 Compliance Form

SB X7-7 Table 2: Method for 2020 Population Estimate	
Method Used to Determine 2020 Population (may check more than one)	
<input type="checkbox"/>	1. Department of Finance (DOF) or American Community Survey (ACS)
<input type="checkbox"/>	2. Persons-per-Connection Method
<input type="checkbox"/>	3. DWR Population Tool
<input checked="" type="checkbox"/>	4. Other DWR recommends pre-review
NOTES: DWR granted Poway approval for their population projection methodology on April 13, 2016.	

Appendix E - SB X7-7 Compliance Form

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	49,062
NOTES: Poway's Census-reported population minus East Poway population (other method approved by DWR on April 13, 2016).	

Appendix E - SB X7-7 Compliance Form

SB X7-7 Table 4: 2020 Gross Water Use							
Compliance Year 2020	2020 Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use*	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
	9,185			-		-	9,185
<p>* 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.</p>							
<p>NOTES:</p>							

Appendix E - SB X7-7 Compliance Form

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	Raw water from SDCWA		
This water source is (check one) :			
<input type="checkbox"/>	The supplier's own water source		
<input checked="" type="checkbox"/>	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System ¹	Meter Error Adjustment ² <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
	8,774	-	8,774
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			
NOTES: Raw water is treated to potable standards at Poway's Water Treatment Plant.			

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	Recycled water from City of San Diego		
This water source is (check one) :			
<input type="checkbox"/>	The supplier's own water source		
<input checked="" type="checkbox"/>	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System ¹	Meter Error Adjustment ² <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
	411		411
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			
NOTES:			

Appendix E - SB X7-7 Compliance Form

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

Appendix E - SB X7-7 Compliance Form

Data from this table will not be entered into WUEdata.
Instead, the entire table will be uploaded to WUEdata as a separate upload in Excel format.

SB X7-7 Table 4-C: 2020 Process Water Deduction Eligibility

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

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

NOTES:

Appendix E - SB X7-7 Compliance Form

Data from this table will not be entered into WUEdata.
 Instead, the entire table will be uploaded to WUEdata as a separate upload in
 Excel format.

SB X7-7 Table 4-C.1: 2020 Process Water Deduction Eligibility *(For use only by agencies that are deducting process water using Criteria 1)*

Criteria 1
 Industrial water use is equal to or greater than 12% of gross water use

2020 Compliance Year	2020 Gross Water Use Without Process Water Deduction	2020 Industrial Water Use	Percent Industrial Water	Eligible for Exclusion Y/N
	9,185		0%	NO

NOTES:

Appendix E - SB X7-7 Compliance Form

Data from this table will not be entered into WUEdata.
Instead, the entire table will be uploaded to WUEdata as a separate upload in Excel
format.

SB X7-7 Table 4-C.2: 2020 Process Water Deduction Eligibility <i>(For use only by agencies that are deducting process water using Criteria 2)</i>				
Criteria 2 Industrial water use is equal to or greater than 15 GPCD				
2020 Compliance Year	2020 Industrial Water Use	2020 Population	2020 Industrial GPCD	Eligible for Exclusion Y/N
		49,062	-	NO
NOTES:				

Appendix E - SB X7-7 Compliance Form

Data from this table will not be entered into WUEdata.
 Instead, the entire table will be uploaded to WUEdata as a separate upload in Excel format.

SB X7-7 Table 4-C.3: 2020 Process Water Deduction Eligibility *(For use only by agencies that are deducting process water using Criteria 3)*

Criteria 3

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

2020 Compliance Year	2020 Gross Water Use Without Process Water Deduction <i>Fm SB X7-7 Table 4</i>	2020 Industrial Water Use	2020 Non-industrial Water Use	2020 Population <i>Fm SB X7-7 Table 3</i>	Non-Industrial GPCD	Eligible for Exclusion Y/N
	9,185		9,185	49,062	167	NO

NOTES:

Appendix E - SB X7-7 Compliance Form

Data from this table will not be entered into WUEdata.
 Instead, the entire table will be uploaded to WUEdata as a separate upload in
 Excel format.

SB X7-7 Table 4-C.4: 2020 Process Water Deduction Eligibility <i>(For use only by agencies that are deducting process water using Criteria 4)</i>					
Criteria 4 Disadvantaged Community. A “Disadvantaged Community” (DAC) is a community with a median household income less than 80 percent of the statewide average.					
SELECT ONE "Disadvantaged Community" status was determined using one of the methods listed below:					
1. IRWM DAC Mapping tool https://gis.water.ca.gov/app/dacs/					
<input type="checkbox"/>	If using the IRWM DAC Mapping Tool, include a screen shot from the tool showing that the service area is considered a DAC.				
2. 2020 Median Income					
<input type="checkbox"/>	California Median Household Income*	Service Area Median Household Income	Percentage of Statewide Average	Eligible for Exclusion? Y/N	
	2020	\$75,235		0%	YES
	*California median household income 2015 -2019 as reported in US Census Bureau QuickFacts.				
NOTES					

Appendix E - SB X7-7 Compliance Form

Data from these tables will not be entered into WUEdata. Instead, the
entire tables will be uploaded to WUEdata as a separate upload in Excel format.

This table(s) is only for Suppliers that deduct process water from their 2020 gross water use.

SB X7-7 Table 4-D: 2020 Process Water Deduction - Volume *Complete a*
separate table for each industrial customer with a process water exclusion

Name of Industrial Customer		<i>Enter Name of Industrial Customer 1</i>			
Compliance Year 2020	Industrial Customer's Total Water Use *	Total Volume Provided by Supplier*	% of Water Provided by Supplier	Customer's Total Process Water Use*	Volume of Process Water Eligible for Exclusion for this Customer
					-

* 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:

Appendix E - SB X7-7 Compliance Form

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water <i>Fm SB X7-7 Table 4</i>	2020 Population <i>Fm</i> <i>SB X7-7 Table 3</i>	2020 GPCD
9,185	49,062	167
NOTES:		

Appendix E - SB X7-7 Compliance Form

SB X7-7 Table 9: 2020 Compliance							
Actual 2020 GPCD ¹	Optional Adjustments to 2020 GPCD					2020 Confirmed Target GPCD ^{1,2}	Did Supplier Achieve Targeted Reduction for 2020?
	Enter "0" if Adjustment Not Used			TOTAL Adjustments ¹	Adjusted 2020 GPCD ¹ <i>(Adjusted if applicable)</i>		
	Extraordinary Events ¹	Weather Normalization ¹	Economic Adjustment ¹				
167	-	-	-	-	167	210	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.							
NOTES:							

Appendix F. Energy Intensity Calculations

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Appendix F - Energy Intensity Calculations

Urban Water Supplier:

City of Poway

Water Delivery Product (If delivering more than one type of product use Table O-1C)

Retail Potable Deliveries

Table O-1B: Recommended Energy Reporting - Total Utility Approach

Enter Start Date for Reporting Period	7/1/2019	Urban Water Supplier Operational Control		
End Date	6/30/2020			
<input type="checkbox"/> Is upstream embedded in the values reported?		Sum of All Water Management Processes	Non-Consequential Hydropower	
<i>Water Volume Units Used</i>	AF	Total Utility	Hydropower	Net Utility
<i>Volume of Water Entering Process (volume unit)</i>		8,774	0	8,774
<i>Energy Consumed (kWh)</i>		2,749,209	0	2,749,209
<i>Energy Intensity (kWh/volume)</i>		313.3	0.0	313.3

Quantity of Self-Generated Renewable Energy

0 kWh

Data Quality (*Estimate, Metered Data, Combination of Estimates and Metered Data*)

Metered Data

Data Quality Narrative:

Energy data is metered energy billing data from the San Diego Gas & Electric (SDG&E) for fiscal year 2020 (July 1, 2019 through June 30, 2020). Consumption data is total metered potable water consumption.

Narrative:

Poway purchases raw water from SDCWA, which is treated at the City's Berglund WTP prior to distributing to customers. Therefore, the City's energy demands include the energy requirements for treatment as well as conveyance, distribution, and local storage.

Appendix F - Energy Intensity Calculations

Urban Water Supplier:

City of Poway

Table O-2: Recommended Energy Reporting - Wastewater & Recycled Water				
Enter Start Date for Reporting Period		7/1/2019		Urban Water Supplier Operational Control
End Date		6/30/2020		
Water Management Process				
<input type="checkbox"/>	Is upstream embedded in the values reported?		Collection / Conveyance	Treatment
			Discharge / Distribution	Total
Volume of Water Units Used		AF		
<i>Volume of Wastewater Entering Process (volume units selected above)</i>		0	0	0
<i>Wastewater Energy Consumed (kWh)</i>		0	0	0
<i>Wastewater Energy Intensity (kWh/volume)</i>		0.0	0.0	-
<i>Volume of Recycled Water Entering Process (volume units selected above)</i>		411	0	-
<i>Recycled Water Energy Consumed (kWh)</i>		99,791	0	0
<i>Recycled Water Energy Intensity (kWh/volume)</i>		242.8	0.0	0.0

Quantity of Self-Generated Renewable Energy related to recycled water and wastewater operations

0 kWh

Data Quality (Estimate, Metered Data, Combination of Estimates and Metered Data)

Metered Data

Data Quality Narrative:

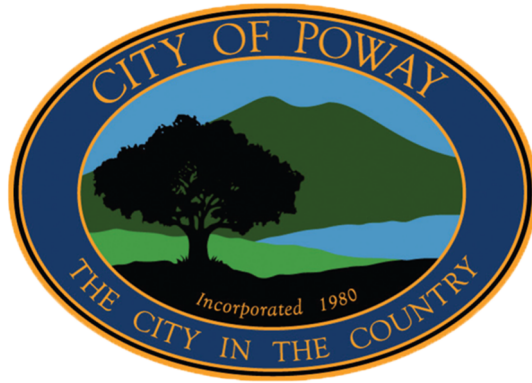
Energy data is metered energy billing data from the San Diego Gas & Electric (SDG&E) for fiscal year 2020 (July 1, 2019 through June 30, 2020). Consumption data is total metered potable water consumption.

Narrative:

Poway purchases recycled water from the City of San Diego which is conveyed and distributed to customers.

Appendix G. Water Shortage Contingency Plan

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City of Poway

Water Shortage Contingency Plan

Final

Prepared by:



May 2021

Prepared by:

Jessica Parks, City of Poway

Angelina Martinez, City of Poway

Andree Johnson, Woodard & Curran

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List of Abbreviations

AF	acre-feet
AFY	acre-feet per year
AWIA	American Water Infrastructure Act
CII	Commercial, Industrial, and Institutional
City	City of Poway
CWC	California Water Code
DWR	California Department of Water Resources
ESP	Emergency Storage Project
MG	million gallons
MGD	million gallons per day
MHM Plan	Multi-Hazard Mitigation Plan for San Diego County
MWD Plan	Metropolitan Water District of Southern California Water Shortage Contingency Plan
PMC	Poway Municipal Code
Poway	City of Poway
SDCWA	San Diego County Water Authority
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act
WSCP	Water Shortage Contingency Plan
WTP	Water Treatment Plant

Water Shortage Contingency Plan

1.1. Introduction

This Water Shortage Contingency Plan (WSCP or Plan) addresses water supply contingency planning and drought planning for the City of Poway (City or Poway). Poway currently obtains all of its potable water supply from the San Diego County Water Authority (SDCWA), which is expected to continue into the future. Therefore, the City's WSCP and its subsequent response actions are directly linked to SDCWA's water supply reliability.

It should be noted that the DWR requires water suppliers use their standardized submittal tables in the Plan. Some of the tables provided in this WSCP have titles that are designated by DWR to ensure compliance with Water Code Section 10644 (a)(2), which states "*The plan, or amendments to the plan, submitted to the department ... shall include any standardized forms, tables, or displays specified by the department*".

Water Shortage Contingency Legislation

Poway's *Water Conservation Plan, Chapter 8.94* of the Poway Municipal Code (PMC), was adopted by the City Council on November 18, 2008, as Ordinance 682. Poway is creating this WSCP to supplement its *Water Conservation Plan* in order to comply with the new 2018 legislation that was adopted in response to the 2015 drought. This WSCP was adopted in May 2021.

Pursuant to the new 2018 legislation, water suppliers must address several requirements with prescriptive elements in their WSCPs, which include, but are not limited to:

- Describe key attributes and procedures for conducting an annual water supply reliability assessment;
- Adjust to six standard water shortage response levels (progressive ranges of 10%, 20%, 30%, 40%, 50%, and greater than 50% shortage) or crosswalk the six standard stages to the supplier's existing four stages;
- Quantify estimated water savings associated with each shortage response action;
- Describe communication protocols and public outreach measures;
- Identify monitoring and reporting procedures to track compliance; and
- Discuss methods to reevaluate and improve the WSCP.

The purpose of a WSCP is to establish water management requirements necessary to conserve water, enable effective water supply planning, and assure reasonable and beneficial use of water. The WSCP is also meant to prevent waste of water, unreasonable use of water, and unreasonable methods of water use. Additionally, the WSCP aims to assure adequate supplies of water are available to meet the needs of the public, and to further public health, safety, and welfare, while also recognizing that water is a scarce natural resource that requires careful management not only in times of drought, but at all times.

Poway's *Water Conservation Plan* identifies four levels of action in response to a water supply shortage (Levels 1 through 4). To meet the new WSCP requirement outlined above, Poway elected to crosswalk its existing four stages (or levels) of action with the six standard stages. Poway's *Water Conservation Plan* defines the water use efficiency measures that are applicable at all times to all

persons or businesses using City water, though these measures are not mandatory until Level 2 (or by separate, specific action of the Poway City Council at Level 1). Level 1 water conservation measures are voluntary and will be promoted through local and regional public education and awareness measures. During water conservation Levels 2 through 4, conservation measures and water-use restrictions are mandatory and become progressively restrictive in order to attain escalating conservation goals. Level 4 includes the City's strictest mandatory use restrictions to achieve a conservation target above 40%. Violations of the City's WSCP may be subject to administrative, civil, and criminal penalties and remedies as specified in the *Water Conservation Plan* and as provided elsewhere in the PMC.

The City's *Water Conservation Plan* specifies the procedural and administrative requirements for implementing a water shortage condition. Examples of situations that could trigger determination of a water shortage condition include:

- General water supply shortage;
- Limited capacity in the SDCWA's distribution facilities;
- Potential for a major failure of the supply or distribution facilities belonging to the Metropolitan Water District of Southern California (MWD), SDCWA, and/or the City; or
- Conditions prevailing in San Diego County that require available water resources be put to maximum beneficial use.

1.2. Annual Water Supply and Demand Assessment

Beginning in 2022, pursuant to the new requirements discussed in California Water Code (CWC) 10632.1, water suppliers will be required to submit a water supply and demand assessment report (Annual Assessment) to the Department of Water Resources (DWR) on or before July 1st of each year. The Annual Assessment will be used to evaluate short-term water supply reliability for the upcoming fiscal year. Poway's Annual Assessment will consider existing and projected water supply sources (including imported water from SDCWA), unconstrained customer demand, planned water use for the current year assuming that the following year will be dry, infrastructure capabilities and constraints, and any other local factors that may influence or disrupt water supplies. Because Poway obtains all of its potable water supply from the SDCWA, evaluation criteria and procedures for conducting Poway's Annual Assessment will be aligned with the criteria and procedures used for SDCWA's annual assessment. The City's timeline for developing its Annual Assessment is presented in **Table 1-1**.

Table 1-1: Annual Assessment Process and Timeline

Time Frame	Step	Action
March - April	1(a)	Poway estimates available local supplies.
	1(b)	Poway coordinates with SDCWA to gather necessary information for SDCWA to conduct its wholesaler assessment.
April - May	2(a)	SDCWA announces member agency allocation determination for current year.
	2(b)	SDCWA determines carryover (and emergency storage apportionments if under emergency).
	2(c)	Poway conducts its Annual Assessment:
	(i)	Poway determines total available supply – inclusive of imported water supply.
	(ii)	Poway determines infrastructure constraints (including water quality conditions limiting local sources).
	(iii)	Poway determines expected demand for current year and one subsequent dry year, anticipated to be based on regional projections from SDCWA.
June	(iv)	Poway compares supply and demand and makes a determination of the water supply reliability.
	3(a)	Poway City Council reviews and approves Annual Assessment determination.
	3(b)	Poway coordinates with SDCWA on submittal of the report. Annual Assessment report to be submitted to the state by July 1.
NOTES: The process outlined above is provided as a guideline and may be modified based on conditions present during the evaluation period.		

Poway will perform its water supply and demand assessment annually in spring each year to assess short-term reliability for the upcoming fiscal year. Results of the analysis will be discussed in a report and presented to the City Council in June. If the analysis projects a supply deficit, the City Council will vote to determine the appropriate shortage response level and associated actions necessary to reduce demand to ensure adequate supply. Because the City purchases water from the SDCWA, the Annual Assessment will be conducted in coordination with the SDCWA’s annual assessment. As such, the timeline for conducting the City’s Annual Assessment is based on the SDCWA’s timeline.

1.3. Stages of Action

In 2008, SDCWA developed a Model Drought Response Conservation Program Ordinance for use by SDCWA Member Agencies. DWR’s *2008 Updated Urban Drought Guidebook* was used as a reference. SDCWA’s model drought ordinance is an appendix to its 2015 Urban Water Management Plan (UWMP). Poway used the 2008 SDCWA model ordinance to develop its *Water Conservation Plan*, which was first adopted by the Poway City Council on December 2, 2008 as *PMC Chapter 8.94*. The current version of *Chapter 8.94* is provided as an attachment to this WSCP. Poway’s ordinance identifies four water shortage response levels, which are described in detail below.

The *Water Conservation Plan* encourages efficient water use, discourages wasteful water use practices, and establishes water use efficiency measures. Water use efficiency measures apply on a voluntary basis at all times and are mandatory upon declaration of a Water Shortage Response Level 1, based on separate action by the City Council, and automatically remain mandatory with the declaration of a Response Level 2, 3, or 4. The water use efficiency measures that are encouraged at all times as listed in the PMC Section 8.94.040 are as follows:

- Do not wash down paved surfaces
- Do not allow water waste from inefficient landscape irrigation

- Irrigate residential and commercial landscapes before 10 a.m. and after 6 p.m. only
- Use a hand-held hose equipped with a positive shut-off nozzle or bucket for watering landscaped areas not irrigated by a landscape irrigation system
- Irrigate nursery and commercial grower’s products before 10 a.m. and after 6 p.m. only. Water is permitted at any time using a hand-held hose equipped with a positive shut-off nozzle or bucket
- Use only recirculated water to operate ornamental fountains
- Wash vehicles only using a hand-held hose equipped with a positive shut-off nozzle and a bucket, or a high pressure/low volume wash system
- Offer guests in hotels the option of not laundering towels and linens daily
- Do not use single-pass cooling equipment in new commercial applications
- Use a water recirculation system for commercial conveyor car washes and all new commercial laundry systems
- Run only fully loaded dishwashers and washing machines
- Repair all water leaks within five days of notification by the City of Poway
- Use recycled or non-potable water for construction purposes when available

Table 1-2 presents the six standard water shortage response levels and connects them to the stages outlined in Poway’s *Water Conservation Plan*.

Table 1-2: Stages of Water Shortage Contingency Plan

DWR Table 8-1: Retail - Stages of Water Shortage Contingency Plan			
Standard Level	Percent Supply Reduction	Poway Level	Shortage Response Actions
Level 1	up to 10%	Level 1 (up to 10%)	Level 1 corresponds to Poway Level 1. Includes voluntary water shortage actions to achieve demand reductions, such as providing refills at restaurants and laundering at hotels upon request only.
Level 2	up to 20%	Level 2 (up to 20%)	Level 2 corresponds to Poway Level 2. Mandates the voluntary actions included under Level 1 and includes additional measures focused on reducing outdoor water use such as limiting landscape irrigation for residential and commercial properties to a schedule, imposing time limits for lawn watering, and requiring covers for pools and spas.
Level 3	up to 30%	Level 3 (up to 40%)	Level 3 corresponds to Poway Level 3. Includes mandatory Level 1 and 2 actions and additional actions focused on reducing outdoor water use such as further limiting landscape irrigation for residential and commercial properties, prohibiting emptying and refilling of swimming pools and spas, and prohibiting vehicle washing except at facilities using recycled or recirculating water.
Level 4	up to 40%	Level 3 (up to 40%)	Level 4 corresponds to Poway Level 3. Refer to the description provided for Level 3 above.

DWR Table 8-1: Retail - Stages of Water Shortage Contingency Plan			
Standard Level	Percent Supply Reduction	Poway Level	Shortage Response Actions
Level 5	up to 50%	Level 4 (above 40%)	Level 5 corresponds to Poway Level 4. Includes mandatory Level 1, 2, 3, and 4 actions and additional actions focused on reducing outdoor water use such as prohibiting all landscape irrigation (with exceptions for commercial growers, nurseries, and other listed uses).
Level 6	above 50%	Level 4 (above 40%)	Level 6 corresponds to Poway Level 4. Refer to the description provided for Level 5 above.

Each of Poway’s four shortage response levels are discussed in more detail below.

Level 1 – Water Shortage Watch (up to 10% reduction)

The City of Poway will enter into a Water Shortage Response Level 1 when SDCWA notifies its member agencies that a demand reduction of up to 10% is required due to water supply shortages resulting from drought in order to ensure sufficient supplies will be available to meet anticipated demands. The City Manager may declare a Level 1 condition upon a written determination of the existence of facts and circumstances supporting the determination. During a Water Shortage Response Level 1, the City of Poway will increase public outreach efforts to encourage the following voluntary water conservation measures:

- Reset irrigation clocks as necessary to water once per week in winter and not more than three times per week in summer.
- Add water to maintain the level of water in swimming pools and spas only when necessary. A pool cover shall be installed on all single-family residential pools and spas.
- Serve and refill water in restaurants only upon request.

Additionally, the water use efficiency measures in PMC Section 8.94.040, and additional measures under the Level 1 Response may become mandatory upon separate action by the City Council.

Level 2 – Water Shortage Alert (up to 20% reduction)

The City of Poway will enter into a Water Shortage Response Level 2 when SDCWA notifies its member agencies that a demand reduction of up to 20% is required due to water supply shortages resulting from drought in order to ensure sufficient supplies will be available to meet anticipated demands. The City Manager may declare a Level 2 Response, implementing mandatory water use restrictions, with ratification by the City Council by resolution. During a Water Shortage Response Level 2, all water conservation measures under PMC section 8.94.040, and under Level 1, become mandatory with the addition of the following measures:

- Landscape watering shall be conducted only in conformance with landscape watering schedules and restrictions for commercial and residential properties as approved by the City Manager.
- All leaks must be repaired within 72 hours of notification by the City of Poway.
- If the mandatory reduction level is less than 15 percent, ornamental fountains or similar water features shall not be operated for more than six hours per day. If the mandatory

reduction level is more than 15 percent, ornamental fountains shall not be operated unless reclaimed water is used.

- If the mandatory reduction level is less than 15 percent, pool covers shall be encouraged but not required. If the mandatory reduction level is more than 15 percent, pool covers will be required.

During a Level 2 condition, the City of Poway's City Council may establish a water allocation for property receiving water service from the City of Poway. Additionally, the City Council may implement a conservation rate structure designed to encourage water conservation.

Level 3 – Water Shortage Critical (up to 40% reduction)

The City of Poway will enter into a Water Shortage Response Level 3 when SDCWA notifies its member agencies that a demand reduction of up to 40% is required due to water supply shortages resulting from drought in order to ensure sufficient supplies will be available to meet anticipated demands. The City Manager may declare a Level 3 Response with ratification by the City Council by resolution. During a Water Shortage Response Level 3, all water conservation measures under PMC Section 8.94.040, Level 1 and Level 2 are mandatory with the addition of the following mandatory measures:

- Landscape watering shall be conducted only in conformance with landscape watering schedules and restrictions for commercial and residential properties as approved by the City Manager.
- Vehicles shall not be washed except at commercial carwashes that recirculate water or by high pressure/low volume wash systems.
- Emptying and refilling of swimming pools and spas is prohibited.
- All leaks must be repaired within 48 hours of notification by the City of Poway.

Upon declaration of a Water Shortage Response Level 3 and by separate action of the City Council, the City of Poway may suspend consideration of annexation to its service area. The City Council may establish a water allocation for property receiving water service from the City of Poway and the City is authorized to implement a conservation rate structure, including penalties for using water in excess of set allocations. Additionally, the City can, by separate Council action, mandate that no new water service shall be provided, and no new meters will be installed.

Level 4 – Water Shortage Emergency (above 40% reduction)

The City of Poway will enter into a Water Shortage Response Level 4 when SDCWA notifies its member agencies that a demand reduction greater than 40% is required due to water supply shortages resulting from drought in order to ensure sufficient supplies will be available to meet anticipated demands. The City of Poway may declare a Level 4 condition in the manner and on the grounds provided in CWC Section 350. All conservation measures under Levels 1-3 must be adhered to with the addition of the following measures:

- All landscape irrigation is prohibited with the exception of crops and landscape products of commercial growers and nurseries.
- All leaks must be repaired within 24 hours of notification by the City of Poway.

Upon declaration of a water shortage emergency, the City Council may establish a water allocation for property receiving water service from the City of Poway. Additionally, the City Council may

implement a conservation rate structure, including penalties for using water in excess of set allocations.

1.4. Shortage Response Actions

Poway’s Municipal Code includes mandatory prohibitions on the waste of water. **Table 1-3** provides the response actions associated with each water shortage response level, a quantitative estimate of how much each action is anticipated to reduce demands, and whether the City of Poway enforces the measure with a penalty or charge. Each of the four water shortage response levels identified in Poway’s *Water Conservation Plan* identifies water use restrictions of increasing severity. As described above, measures under a Level 1 condition are voluntary with no penalty, unless a separate action is taken by the City Council to make the measures mandatory and enforceable by penalty or fines as described under **Section 1.5**.

Table 1-3: Restrictions and Prohibitions on End Users

DWR Table 8-2 Retail: Restrictions and Prohibitions on End Uses				
Level ²	Demand Reduction Actions	Shortage Gap Reduction	Additional Explanation or Reference (<i>optional</i>)	Penalty, Charge, or Other Enforcement?
Level 1	Other - Prohibit use of potable water for washing hard surfaces	1%		No ¹
Level 1	Landscape - Restrict or prohibit runoff from landscape irrigation	0.1%		No
Level 1	Landscape - Limit landscape irrigation to specific times	4%	Irrigate residential and commercial landscapes, and nursery or commercial grower's products before 10 a.m. and after 6 p.m. only.	No
Level 1	Other - Require automatic shut of hoses	1%		No
Level 1	Water Features - Restrict water use for decorative water features, such as fountains	2%		No
Level 1	Wash vehicles only using a hand-held hose equipped with a positive shut-off nozzle and a bucket, or a high pressure/low volume wash system	< 0.1%		No
Level 1	CII - Lodging establishment must offer opt out of linen service	0.2%		No

DWR Table 8-2 Retail: Restrictions and Prohibitions on End Uses				
Level ²	Demand Reduction Actions	Shortage Gap Reduction	Additional Explanation or Reference (<i>optional</i>)	Penalty, Charge, or Other Enforcement?
Level 1	CII - Other CII restriction or prohibition	0.2%	Do not use single-pass cooling equipment in new commercial applications	No
Level 1	CII - Other CII restriction or prohibition	0.2%	Use a water recirculation system for commercial conveyor car washes and all new commercial laundry systems	No
Level 1	Other	1%	Run only fully loaded dishwashers and washing machines	No
Level 1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	1%	Repair all water leaks within five days of notification by the City of Poway	No
Level 1	Other - Prohibit use of potable water for construction and dust control	< 0.1%	Use recycled or non-potable water for construction purposes when available	No
Level 1	Landscape - Limit landscape irrigation to specific days	6%	Reset irrigation clocks as necessary to water once per week in winter and not more than three times per week in summer	No
Level 1	Pools - Allow filling of swimming pools only when an appropriate cover is in place.	1%	Add water to maintain the level of water in swimming pools and spas only when necessary. A pool cover shall be installed on all single-family residential pools and spas	No
Level 1	CII - Restaurants may only serve water upon request	0.2%		No
Level 2	Landscape - Limit landscape irrigation to specific days	8%	Landscape watering shall be conducted only in conformance with landscape watering schedules and restrictions for residential and commercial properties	Yes
Level 2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	1%	All leaks must be repaired within 72 hours of notification	Yes

DWR Table 8-2 Retail: Restrictions and Prohibitions on End Uses				
Level ²	Demand Reduction Actions	Shortage Gap Reduction	Additional Explanation or Reference (<i>optional</i>)	Penalty, Charge, or Other Enforcement?
Level 2	Water Features - Restrict water use for decorative water features, such as fountains	0.2%	If the mandatory reduction level is less than 15 percent, ornamental fountains or similar water features shall not be operated for more than six hours per day. If the mandatory reduction level is more than 15 percent, ornamental fountains shall not be operated unless reclaimed water is used	Yes
Level 2	Pools and Spas - Require covers for pools and spas	1%	If the mandatory reduction level is less than 15 percent, pool covers shall be encouraged but not required. If the mandatory reduction level is more than 15 percent, pool covers will be required	Yes
Level 3	Landscape - Limit landscape irrigation to specific days	12%	Landscape watering shall be conducted only in conformance with landscape watering schedules and restrictions for residential and commercial properties	Yes
Level 3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	1%	Vehicles shall not be washed except at commercial carwashes that recirculate water or by high pressure/low volume wash systems	Yes
Level 3	Other water feature or swimming pool restriction	2%	Emptying and refilling of swimming pools and spas is prohibited	Yes
Level 3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	2%	All leaks must be repaired within 48 hours of notification	Yes
Level 4	Landscape - Prohibit all landscape irrigation	24%	With the exception of crops and landscape products of commercial growers or nurseries	Yes
Level 4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	4%	All leaks must be repaired within 24 hours of notification	Yes

NOTES: ¹ Level 1 measures may be mandatory with a penalty when separate action is taken by City Council. Level 1 measures are mandatory under Level 2 through 4 water supply conditions.² Mandatory water shortage restrictions enforced in previous stages also apply to the current stage unless the current stage includes an equivalent action to reflect stricter measures, in which case the stricter measure would apply.

1.5. Communication Protocols

Upon a water shortage declaration action by the City Manager (Level 1), the City will increase its public education and outreach efforts to expand public awareness of the need to implement the voluntary water conservation practices. Upon a water shortage declaration action by the City Council (Levels 2-4), the City will expand its public information campaign to notify the public of the mandatory water conservation measures. Poway will provide notice of the water shortage rules and regulations to all residents and businesses within its service area, in addition to its customers of record, through a variety of media and communications methods, such as print or internet.

Upon declaration of a Level 1 shortage, the City Manager may publish a notice of the determination in one or more newspapers, including a newspaper of general circulation within the City. Upon declaration of a Level 2-4 shortage or Water Shortage Emergency, Poway shall coordinate with the City Manager and shall publish a copy or summary of the resolution in a newspaper used for publication of official notices at least one time within five (5) days of the declaration. If Poway establishes a water allocation under Water Shortage Response Levels 3-4, the City will provide notice of the allocation by including it in the regular billing statement for water service fees or charges or by any other mailing to the address to which the City customarily mails the billing statement for fees or charges for ongoing water service. Upon declaration of any water shortage condition level, the City may also post notice on its website.

If possible, Poway may activate its public information campaign prior to a formal water shortage declaration to provide customers with advanced notice of impending water use restrictions. The City could continually update its webpage to notify residents of current and planned shortage levels and modify and expand the webpage, as necessary. During the 2015 drought, the City utilized bill inserts to inform its customers of water shortage levels and the associated mandatory demand reduction actions. Other actions that Poway may take to increase public outreach are contacting large water users and businesses that are most likely to be seriously affected directly in writing and/or providing public notifications for non-English speakers.

Poway's shortage response actions are similarly aligned to the SDCWA's actions; therefore, any public outreach and messaging campaigns conducted by SDCWA will also benefit the City as it triggers different levels.

1.6. Penalties, Charges, Other Enforcement of Prohibitions

PMC Chapter 8.94 Section 140 addresses enforcement provisions associated with the City's *Water Conservation Plan*, including penalties for violating the water use restrictions. A summary of the penalties for violation of any provisions of the *Water Conservation Plan* is provided in **Table 1-4**. Additional penalties for violation of a City ordinance may apply, as set forth in Chapters 1.08 and 1.10 of the PMC.

Table 1-4: Summary of Water Conservation Plan Enforcement Provisions

Violation	Penalty
First	Letter of Warning
Second	\$100 fine
Third	\$200 fine
Fourth and above	\$500 fine and possible installation of a flow restrictor
Further Violation	Termination of water service

1.7. Consumption Reduction Methods

The *Water Conservation Plan* includes water use efficiency measures applicable at all times to all persons or businesses using City of Poway water, though the measures are not mandatory until Level 2 (or by separate, specific action of the Poway City Council at Level 1). **Table 1-5** provides the consumption reduction measure implemented by the Poway to reduce water demands throughout its service area.

Table 1-5: Consumption Reduction Methods

DWR Table 8-3: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods			
Level	Supply Augmentation Methods by Water Supplier	Shortage Gap Reduction	Additional Explanation or Reference (<i>optional</i>)
All Levels	Offer Water Use Surveys	1%	
All Levels	Provide Rebates on Plumbing Fixtures and Devices	1%	
All Levels	Provide Rebates for Landscape Irrigation Efficiency	2%	
All Levels	Provide Rebates for Turf Replacement	1%	
Level 1	Expand Public Information Campaign	4%	Ask customers to voluntarily reduce water by 10 percent, inform customers of the water use efficiency measures, and encourage customers to utilize the water conservation incentives and programs offered by the City of Poway.
Levels 2, 3, and 4	Other	Variable	The City Council may establish water allocations for property receiving water service from the City of Poway.
Levels 2, 3, and 4	Implement or Modify Drought Rate Structure or Surcharge	2%	The City Council may implement a conservation rate structure
Levels 3, and 4	Moratorium or Net Zero Demand Increase on New Connections	Variable	

1.8. Determining Water Shortage Reductions

Should Poway need to implement measures to reduce water use, an analysis of water use data would be completed, including an assessment of metered water deliveries by customer sector (i.e., customer water sales). Customer water meters are read bi-monthly, divided throughout the City into four billing cycles. Other ways to measure water use include comparisons of the amount of water purchased monthly from SDCWA and the volume of water treated at the City's Water Treatment Plant (WTP) and placed into the distribution system.

1.9. Refinement Procedures

Poway's WSCP is a living document, and as such can be responsive to the effectiveness of conservation measures in the midst of a water shortage. During declared shortage levels, Poway will analyze monthly monitoring data and convene the City Council to determine if adaptive measures need to be taken to achieve the necessary shortage reduction levels. In the case that the measures are not working as desired, the City will add new actions or refine current actions to achieve greater savings. Measures from a higher stage could be adopted into the current stage, such as requiring leak repairs within 24 hours for Stage 3 rather than 48 hours. When updates are needed, Poway will coordinate with all appropriate City departments to refine the plan and provide updated information and measures to City Council for approval.

1.10. Revenue and Expenditure Impacts

Water shortages in Poway would likely impact revenues and implementation of a water shortage program would impact expenditures for additional supply of raw water, changes to computer programs, and changes to the billing process.

Poway's *Water Conservation Plan* includes four water shortage response levels, including three levels of mandatory conservation, from up to 20% to more than 40%. Reductions in potable water sales would result in a reduction in revenue. The impact would depend on the amount of sales reduction and the length of water shortage conditions. For example, if sales declined by 10% for several months, the impact on revenue and operations would be mild. If a severe water shortage occurred, necessitating that the City declare a Level 4 Water Shortage Emergency, requiring mandatory reduced water use of greater than 40%, the revenue impact would be substantial, particularly during high water usage times of the year and for an extended duration.

Measures to overcome revenue impacts would include purchasing less raw water from SDCWA and processing less water at the WTP (potentially resulting in decreased chemical and energy costs). Potable water in reservoirs would be sold first, and the raw water in the Lake Poway reservoir would be accessed for treatment. The City Council could consider adjustments to water rates and billing strategy. Rates are adopted by Resolution of the City Council following an extensive public notification process as required by Proposition 218.

All water sales in Poway, both potable and recycled, are metered. Customers receive water bills bi-monthly and are charged based on metered use. The rate includes components for treatment, delivery, pumping, capital replacement, debt service, and administration. Millions of dollars have been invested in the WTP, reservoirs, and distribution system. Fixed costs and maintenance expenses occur regardless of customer usage. The "capacity" and "commodity" billing structure provide financial stability for the water system even in times of drought or heavy rain. Conservation, even during a water shortage, will not have a long-term significant financial impact because the City Council adjusts rates to balance "capacity" costs and "commodity" costs. As a result, use of financial reserves to address decreased water sales during a water shortage is minimized. Often, use of financial reserves are not necessary; however, during the 2015 prolonged drought, reserves were used. To replenish the depleted financial reserves, the City Council adopted Ordinance 784 in January 2016. Ordinance 784 increased water and sewer rates and included a temporary "drought surcharge" of \$0.75 per unit of water used. This temporary surcharge restored the reserve to pre-2015 drought levels and was eliminated in December 2018.

Financial analysis of revenues and expenditures associated with the City's water system occurs continuously in several ways, including:

- **Rate Adjustments** – Periodically the City conducts a thorough analysis of water system revenues and expenditures related to establishing water rates. Water rates must be set to recover operating and capital costs, while at the same time, not over-collecting revenue. When the City’s cost to purchase water from SDCWA is adjusted, the rate model must be evaluated to determine if any adjustments are necessary. The process of reviewing rates includes detailed analysis of water sales. The financial impact of significantly decreased water sales as a result of a water shortage would be evaluated.
- **Annual Operating Budget, Capital Infrastructure Plan, and Water Fund Reserves** – Annually as the City prepares the operating budget for the water system and manages the budget during the year, staff assesses the current water supply situation and consumption patterns to assess revenue impacts. Based on reduced water sales, City staff adjusts capital, replacement and rehabilitation, and operation and maintenance expenditures. The City also establishes reserve funds which may be accessed in an emergency or other type of unexpected financial situation. The City’s formally adopted reserve policy calls for maintaining a Water Fund reserve balance at 20% of the total Water Operating budget.

During years when the City experiences higher than average rainfall, water sales tend to decrease, which also impacts actual revenue compared to projections.

1.11. Catastrophic Supply Interruption

This section discusses Poway’s local contingency planning efforts to prepare for a catastrophic water supply interruption, including the City’s interruption plan, *Water Conservation Plan*, and its specific methods to reduce water use by 50% or more if necessary. This section also discusses the measures that SDCWA has taken to increase supply reliability for its member agencies.

Local Supply Reliability Planning

The City of Poway meets federal and state guidelines for planning for potential hazards. CWC Section 10632 (a)(3) requires the UWMP to describe actions that would be taken by the water supplier to prepare for a catastrophic interruption of water supply including, but not limited to, a regional power outage, earthquake, or other disaster. Poway has a catastrophic supply interruption plan that includes interruption of raw water from SDCWA, interruption of Poway’s delivery and distribution systems, and non-drought related events. A summary of the City’s catastrophic supply interruption plan is provided below in **Table 1-6**.

Table 1-6: Catastrophic Supply Interruption Plan

Catastrophic Event	Plan
Regional Power Outage	Use emergency generators at critical facilities.
Earthquake affecting Poway’s Raw Water Supply	Use stored water in Lake Poway and implement the <i>Water Conservation Plan</i>
System Failure affecting Poway’s Raw Water Supply	Use stored water in Lake Poway and implement the <i>Water Conservation Plan</i>
System Failure at Poway Water Treatment Plant	Isolate problem areas of plant and operate plant manually
System Failure in Poway Distribution System	Isolate problem areas and restore service outward from the Treatment Plant

In 1970-1971, the Poway Municipal Water District constructed Lake Poway to store 3,300 AF (about 1,075 MG) of raw water for catastrophic interruptions of the water supply. The dam is inspected and monitored on a regular basis. This volume is approximately 32% of the City's average annual deliveries over the past 10 years and would provide the City with adequate water supplies for approximately three to six months, depending on the season and conservation levels.

If a major catastrophe affected the ability of SDCWA to provide Poway with raw water, Poway would still have raw water in Lake Poway and some potable water in storage reservoirs. For example, assuming Lake Poway is at its maximum operating level, and the City Council activated the 20% level of the *Water Conservation Plan*, the City could provide water to its customers for up to four months (6 MGD). If major regional raw water supply deficiencies occurred, the extent to which Poway could meet water demand from its customers would be proportional to conservation. For example, if Poway's supply of imported raw water was totally disrupted and Poway instituted 50% conservation, it is estimated that the City could supply potable water to Poway customers for up to six months (4 MGD).

Currently, Poway's WTP is its only source of potable water. The City is currently working with the SDCWA to establish a treated water connection along the Ramona Aqueduct. At the March 25, 2021 SDCWA Board meeting, Poway's formal request for a new treated water connection was approved. Poway is currently working on the design of the treated water connection and estimates completion of construction by 2025.

In response to regional wildfires in 2003 and 2007, Poway implemented a comprehensive plan to ensure backup power and redundant water sources for pumped zones. Every pump station now has provisions to operate using mobile and stationary generators purchased by the City. Poway also maintains diesel generators at the WTP so it can continue operating in the event of a power outage.

Poway is currently updating its Emergency Response Plan pursuant to Section 2013(b) of the American Water Infrastructure Act (AWIA) of 2018, which requires that community water suppliers serving populations greater than 3,300 develop or update an Emergency Response Plan that incorporates the findings of their risk and resilience assessments.

Emergency Storage Project and Supply Reliability

In order to provide sufficient emergency water storage to supply to its member agencies during an extended period, the SDCWA implemented the Emergency Storage Project (ESP) in 2014. The ESP is a system of reservoirs, pipelines, pump stations, and other conveyance facilities intended to improve San Diego's regional water storage capacity and allow stored emergency water to be delivered to SDCWA's member agencies within San Diego County during a prolonged regional interruption. The pipelines that carry imported water from MWD to San Diego cross several major fault lines on their way to San Diego County. Consequently, an earthquake, drought, or other disaster could interrupt San Diego County's imported water supply for up to six months. The ESP facilities can be used to help deliver emergency water supplies to member agencies during two- and six-month emergency events in which the region is either completely unable or only partially able to receive imported water deliveries due to a disaster that renders their transmission system inoperable. By providing interconnections within regional facilities, the ESP is designed to make water available to the San Diego region even during catastrophic conditions when there is an interruption in imported water deliveries.

The regional emergency water supply reservoirs (with their ESP capacity) are Olivenhain (18,000 AF), Lake Hodges (20,000 AF), and San Vicente (52,100 AF). The actual amount of ESP water to be delivered to a particular member agency during an emergency event will depend on many factors such as member agency demands, local supplies, infrastructure, availability of MWD supplies, and

duration of emergency. The ESP was designed to provide a total of 90,100 AF of stored water to meet the region's emergency needs through at least 2030 and recent trends in regional water demand indicate this volume of emergency storage will serve the region beyond 2045. SDCWA's Board of Directors may also authorize that supplies from the ESP be used in a prolonged drought or other water shortage situations where imported and local supplies do not meet 75% of the SDCWA's member agencies urban demands.

As discussed in the SDCWA's Draft UWMP, SDCWA anticipates that it will have more than enough available supply to meet its own demands and the demands of its member agencies under a five-year multi-year drought scenario. Therefore, if Poway anticipates a shortage, it can augment supply and offset the anticipated deficit by purchasing more water from the SDCWA.

Seismic Risk Assessment and Mitigation Plan

CWC 10632.5 requires an urban water supplier to include within its UWMP a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities. Pursuant to CWC 10632.5(c), an urban water supplier may comply with this requirement by submitting a copy of the most recently adopted multi-hazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the multi-hazard mitigation plan addresses seismic risk.

In 2004, the City completed a Hazard Mitigation Plan as part of the County of San Diego's Hazard Mitigation Plan submitted to the State of California Office of Emergency Services. The City of Poway also completed a vulnerability assessment of its water system and submitted it and the emergency response plan to the Environmental Protection Agency and the State of California.

Excerpts of the Multi-Hazard Mitigation Plan for San Diego County (MHM Plan) are provided in Appendix H of the 2020 UWMP, including a hazard assessment specific to Poway and a general evaluation of regional seismic risks. The MHM Plan was prepared with input from SDCWA and under the federal Disaster Mitigation Act of 2000.

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Appendix H. Excerpts from San Diego County Multi-Hazard Mitigation Plan

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Appendix H - Excerpts from San Diego County Multi-Hazard Mitigation Plan

5.9 CITY OF POWAY

The City of Poway (Poway) reviewed a set of jurisdictional-level hazard maps including detailed critical facility information and localized potential hazard exposure/loss estimates to help identify the top hazards threatening their jurisdiction. In addition, LPGs were supplied with exposure/loss estimates for Poway summarized in Table 5.15-1. See Section 4.0 for additional details.

**Table 5.15-1
Summary of Potential Hazard-Related Exposure/Loss in Poway**

Hazard Type	Exposed Population	Residential		Commercial		Critical Facilities	
		Number of Residential Buildings	Potential Exposure/Loss for Residential Buildings (x \$1,000)	Number of Commercial Buildings	Potential Exposure/Loss for Commercial Buildings (x \$1,000)	Number of Critical Facilities	Potential Exposure for Critical Facilities (x \$1,000)
Coastal Storm / Erosion	0	0	0	0	0	0	0
Sea Level Rise	0	0	0	0	0	0	0
Dam Failure	197	11	3,097	5	1,614	0	0
Earthquake (Annualized Loss - Includes shaking, liquefaction and landslide components)	51,126*	15,684*	917*	153*	339*	105*/106*	3,239/12,695*
Floods (Loss)							
100 Year	2,158	338	95,147	195	68,182	15	6,560
500 Year	4,199	1,127	317,251	367	128,587	21	8,267
Rain-Induced Landslide							
High Risk	2,515	874	169,170	56	317,358	5	106,157
Moderate Risk	11,354	4,030	1,120,165	27	98,302	39	261,013
Tsunami	0	0	0	0	0	0	0
Wildfire/ Structure Fire							
Fire regime II & IV	43,624	15,054	4,237,701	12,366	4,328,138	196	813,205

*Represents best available data at this time.

Appendix H - Excerpts from San Diego County Multi-Hazard Mitigation Plan

After reviewing the localized hazard maps and exposure/loss table above, the following hazards were identified by the Poway LPG as their top five. A brief rationale for including each of these is included.

- **Wildfire:** historical data and destructive potential.
- **Flooding:** historical data.
- **Geologic Hazards (Landslide, rockslide, earthquake):** not from epicenter in Poway area, but because of possible damage to our electricity, water supplies, and wastewater collection system. In addition, landslides and/or rockslides may occur on Poway Grade and Pomerado Road as a result from earthquake or heavy rains.
- **Manmade Hazards:** are considered potential hazards.
- **Drought:** lasting effects of drought are considered potential hazards

5.9.1 Capabilities Assessment

The LPG identified current capabilities available for implementing hazard mitigation activities. The Capability Assessment (Assessment) portion of the jurisdictional mitigation plan identifies administrative, technical, legal and fiscal capabilities. This includes a summary of departments and their responsibilities associated to hazard mitigation planning as well as codes, ordinances, and plans already in place associated to hazard mitigation planning. The second part of the Assessment provides Poway's fiscal capabilities that may be applicable to providing financial resources to implement identified mitigation action items.

Appendix H - Excerpts from San Diego County Multi-Hazard Mitigation Plan

Existing Institutions, Plans, Policies and Ordinances

The following is a summary of existing departments in Poway and their responsibilities related to hazard mitigation planning and implementation, as well as existing planning documents and regulations related to mitigation efforts within the community. The administrative and technical capabilities of Poway, as shown in Table 5.15-2, provides an identification of the staff, personnel, and department resources available to implement the actions identified in the mitigation section of the Plan. Specific resources reviewed include those involving technical personnel such as planners/engineers with knowledge of land development and land management practices, engineers trained in construction practices related to building and infrastructure, planners and engineers with an understanding of natural or manmade hazards, floodplain managers, surveyors, personnel with GIS skills and scientists familiar with hazards in the community.

**Table 5.15-2
City of Poway: Administrative and Technical Capacity**

Staff/Personnel Resources	Y/N	Department/Agency and Position
A. Planner(s) or engineer(s) with knowledge of land development and land management practices	Y	Development Services – Planners, Engineers
B. Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Development Services – Engineers, Consultants; Safety Services – Fire Marshal
C. Planners or Engineer(s) with an understanding of natural and/or manmade hazards	Y	Development Services – Planners, Engineers
D. Floodplain manager	Y	Development Services - Planner, Engineers
E. Surveyors	Y	Development Services - Consultants
F. Staff with education or expertise to assess the community's vulnerability to hazards	Y	Development Services – Planners, Engineers Public Works – Managers; Safety Services – Chief Officers
G. Personnel skilled in GIS and/or HAZUS	Y	Administrative Services – IT Staff
H. Scientists familiar with the hazards of the community	Y	Development Services - Consultants
I. Emergency manager	Y	City Manager Office – City Manager Safety Services – Emergency Manager
J. Grant writers	Y	All Departments – Various Staff

Appendix H - Excerpts from San Diego County Multi-Hazard Mitigation Plan

The legal and regulatory capabilities of Poway are shown in Table 5.15-3, which presents the existing ordinances and codes that affect the physical or built environment of Poway. Examples of legal and/or regulatory capabilities can include: the City’s building codes, zoning ordinances, subdivision ordinances, special purpose ordinances, growth management ordinances, site plan review, general plans, capital improvement plans, economic development plans, emergency response plans, and real estate disclosure plans.

**Table 5.15-3
City of Poway: Legal and Regulatory Capability**

Regulatory Tools (ordinance, codes, plans)	Local Authority (Y/N)	Does State Prohibit (Y/N)
A. Building code	Y	N
B. Zoning ordinance	Y	N
C. Subdivision ordinance or regulations	Y	N
D. Special purpose ordinances (floodplain management, storm water management, hillside or steep slope ordinances, wildfire ordinances, hazard setback requirements)	Y	N
E. Growth management ordinances (also called “smart growth” or anti-sprawl programs)	Y	N
F. Site plan review requirements	Y	N
G. General or comprehensive plan	Y	N
H. A capital improvements plan	Y	N
I. An economic development plan	Y	N
J. An emergency response plan	Y	N
K. A post-disaster recovery plan	Y	N
L. A post-disaster recovery ordinance	Y	N
M. Real estate disclosure requirements	Y	N

Appendix H - Excerpts from San Diego County Multi-Hazard Mitigation Plan

Fiscal Resources

Table 5.15-4 shows specific financial and budgetary tools available to Poway such as community development block grants; capital improvements project funding; authority to levy taxes for specific purposes; fees for water, sewer, gas, or electric services; impact fees for homebuyers or developers for new development; ability to incur debt through general obligations bonds; and withholding spending in hazard-prone areas.

Table 5.15-4
City of Poway: Fiscal Capability

Financial Resources	Accessible or Eligible to Use (Yes/No)
A. Community Development Block Grants (CDBG)	Yes
B. Capital improvements project funding	Yes
C. Authority to levy taxes for specific purposes	No-requires 2/3 voter approval. Poway has special districts for LMD and Lighting.
D. Fees for water, sewer, gas, or electric service	Yes for water and sewer
E. Impact fees for homebuyers or developers for new developments/homes	Yes
F. Incur debt through general obligation bonds	No-requires 2/3 voter approval
G. Incur debt through special tax and revenue bonds	No-requires 2/3 voter approval
H. Incur debt through private activity bonds	No
I. Withhold spending in hazard-prone areas	Yes, subject to Council approval.

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Goals, Objectives and Actions

Listed below are Poway's specific hazard mitigation goals, objectives and related potential actions. For each goal, one or more objectives have been identified that provide strategies to attain the goal. Where appropriate, the City has identified a range of specific actions to achieve the objective and goal.

The goals and objectives were developed by considering the risk assessment findings, localized hazard identification and loss/exposure estimates, and an analysis of the jurisdiction's current capabilities assessment. These preliminary goals, objectives and actions were developed to represent a vision of long-term hazard reduction or enhancement of capabilities. To help in further development of these goals and objectives, the LPG compiled and reviewed current jurisdictional sources including the City's planning documents, codes, and ordinances. In addition, City representatives met with consultant staff and/or OES to specifically discuss these hazard-related goals, objectives and actions as they related to the overall Plan. Representatives of numerous City departments involved in hazard mitigation planning, including Fire, Police, and Public Works provided input to the Poway LPG. The Poway LPG members were:

- Mark Sanchez, Jon Canavan, Susy Turnbull - Safety Services
- Pat Ryan, Tom Howard, Eric Heidemann - Public Works
- Jim Lyons, Joe Lim - Development Services
- Brad Rosen, Information Technology

Once developed, City staff will present plan to the City Manager for submission to Cal OES and FEMA. Upon approval from FEMA, staff will present Plan to City Council for adoption.

Public meetings were held throughout the County to present these preliminary goals, objectives and actions to citizens and to receive public input. At these meetings, specific consideration was given to hazard identification/profiles and the vulnerability assessment results. The following sections present the hazard-related goals, objectives and actions as prepared by Poway's LPG in conjunction with the Hazard Mitigation Working Group, locally elected officials, and local citizens.

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Goals

The City of Poway has developed the following 4 Goals for their Hazard Mitigation Plan

- Goal 1. Promote resistance to the effects of disasters upon development and infrastructure.
- Goal 2. Promote public understanding, support and demand for effective hazard mitigation.
- Goal 3. Reduce the possibility of damage and losses to people, existing assets and critical facilities/infrastructure due to:
 - a. Wildfires
 - b. Flooding
 - c. Geological Hazards (landslide, rockslide, earthquake)
 - d. Manmade Hazards
- Goal 4. Reduce possibility of damages and losses to existing assets, particularly people, critical facilities/infrastructure and city owned facilities due to severe weather, including extreme heat and drought.

5.9.1.1 Objectives and Actions

The City of Poway developed the following broad list of objectives and actions to assist in the implementation of each of their 4 identified goals. The City of Poway developed objectives to assist in achieving their hazard mitigation goals. For each of these objectives, specific actions were developed that would assist in their implementation. A discussion of the prioritization and implementation of the action items is provided in Section 5.9.2.3.

Goal 1: Promote resistance to the effects of disasters upon development and infrastructure.		New, existing or both
<i>Objective 1.A: The General Plan can be updated to further promote resistance to the effects of disasters upon development and infrastructure.</i>		
Action 1.A.1	Evaluate and revise General Plan policies as necessary.	Both
Action 1.A.2	Review and update FEMA maps regarding flood risk in Poway as necessary.	Both
Action 1.A.3	Evaluate ways to improve road access for emergency vehicles in remote locations.	Both
Action 1.A.4	Update the Water Master Plan with particular attention to fire system upgrades as needed.	Both
Action 1.A.5	Upgrade and improve the use of technologies used in City's Emergency Operations Centers.	Both
Action 1.A.6	Maintain improved wildfire defensible space strategies.	Both

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Goal 2: Promote public understanding, support and demand for effective hazard mitigation.		New, Existing or Both
<i>Objective 2.A: Educate the public to increase their awareness of hazards and ways to mitigate damage.</i>		
Action 2.A.1	Conduct annual NIMS/SEMS/ICS review and training for appropriate City staff and the City Council.	Both
Action 2.A.2	Provide public education and outreach activities regarding disaster preparedness.	Both
Action 2.A.3	Maintain CERT program.	Both
Action 2.A.4	Partner with regional organizations focused on improved disaster preparedness. Continue to target disaster preparedness training to AFN populations (seniors and the disabled) in the community.	Both

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Goal 3: Reduce the possibility of damage and losses to people, new and existing assets, and critical facilities/ infrastructure due to: <u>wildfires, flooding, geological hazards (landslide, rockslide, earthquake), and manmade hazards.</u>		New, Existing or Both
<i>Objective 3.A: Plan and prepare for damage and loss from <u>wildfire.</u></i>		
Action 3.A.1	Update maps of potential wildfire areas in Poway.	Both
Action 3.A.2	Update fire control and evacuation plans for areas near wildland vegetation.	Both
Action 3.A.3	Update the existing safety plan developed by Safety Services for the High Valley area, including a third road into and out of the area	Both
Action 3.A.4	Upgrade road access, surface, and grade for fire safety equipment at identified locations.	Both
Action 3.A.5	Update the Water Master Plan. Evaluate adding hydrants, creating loops, and other means to improve pressure and volume where needed.	Both
Action 3.A.6	Evaluate possible use of certain City trails as auxiliary routes in emergency.	Both
<i>Objective 3.B: Plan and prepare for damage and loss due to <u>flooding.</u></i>		
Action 3.B.1	Provide sand and sand bags to the public for the prevention of flooding damage or loss.	Both
Action 3.B.2	Implement the Drainage Master Plan and, as appropriate, evaluate channel enlargement and/or detention basins to regulate flow.	Both
Action 3.B.3	Remove sediment and silt from channels as needed, and make structural improvements in floodways to increase capacity.	Both
Action 3.B.4	Update Poway Dam Inundation Plan as needed.	Both
Action 3.B.5	Continue to participate in the National Flood Insurance Program and requirement to review applications for conformance with NFIP standards.	New
<i>Objective 3.C: Plan and prepare for damage and loss due to <u>geological hazards (landslide, rockslide, earthquake).</u></i>		
Action 3.C.1	Develop an action plan to mitigate possible damage from landslide or rockslide on Poway Grade and Pomerado Road.	Both
Action 3.C.2	Continue program to improve and/or retrofit water distribution system and wastewater system to reduce the impact of earthquakes. This includes installation of seismic valves at critical water storage tanks, and creating a safe drainage corridor in the event a tank fails.	Both
Action 3.C.3	Provide specialized training to staff for disaster recovery responsibilities.	New

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Goal 4: Reduce the possibility of damage and losses to existing assets, particularly people, critical facilities/ infrastructure and city owned facilities due to severe weather, including extreme heat and drought.		New, Existing or Both
<i>Objective 4.A: Maximize the efficient use of water resources in order to improve the community's resiliency to long term drought and extreme heat conditions.</i>		
Action 4.A.1	Develop/Update Drought Response Plan in conjunction with the San Diego County Water Authority.	New
Action 4.A.2	Continue to participate in the National Weather Service StormReady Program.	New
<i>Objective 4.B: Educate the community about drought, its potential impacts and individual mitigation techniques that they can engage in to help prevent drought or reduce the impact of drought.</i>		
Action 4.B.1	Encourage residents to adopt drought tolerant landscaping or xeriscape practices.	Both
Action 4.B.2	Promote water conservation as a strategy to mitigate future drought conditions and include criteria for drought related mitigation actions.	Both

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Prioritization and Implementation of Action Items

Once the comprehensive list of jurisdictional goals, objectives, and action items listed above was developed, the proposed mitigation actions were prioritized. This step resulted in a list of acceptable and realistic actions that address the hazards identified in each jurisdiction. This prioritized list of action items was formed by the LPG weighing STAPLEE criteria

The Disaster Mitigation Action of 2000 (at 44 CFR Parts 201 and 206) requires the development of an action plan that not only includes prioritized actions but one that includes information on how the prioritized actions will be implemented. Implementation consists of identifying who is responsible for which action, what kind of funding mechanisms and other resources are available or will be pursued, and when the action will be completed.

The top 6 prioritized mitigation actions as well as an implementation strategy for each are:

Priority Action #1: Maintain improved wildfire defensible space strategies.

Coordinating Individual/Organization: Safety Services & Development Services

Potential Funding Source: City of Poway

Implementation Timeline: Annual action.

Priority Action #2: Partner with regional organizations focused on improved disaster preparedness.

Coordinating Individual/Organization: Safety Services & Community Services

Potential Funding Source: City of Poway

Implementation Timeline: On-going.

Priority Action #3: Maintain Community Emergency Response Team program.

Coordinating Individual/Organization: Safety Services

Potential Funding Source: City of Poway

Implementation Timeline: On-going.

Priority Action #4: Update the Water Master Plan. Evaluate adding hydrants, creating loops, and other means to improve pressure and volume where needed.

Coordinating Individual/Organization: Public Works & Development Services

Potential Funding Source: City of Poway

Implementation Timeline: FY 2017-2020

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Priority Action #5: Continue the removal of sediment and silt from channels as needed, and make structural improvements in floodways to increase capacity.

Coordinating Individual/Organization: Public Works

Potential Funding Source: City of Poway

Implementation Timeline: On-going.

Priority Action #6: Continue to evaluate and revise General Plan as necessary.

Coordinating Individual/Organization: Development Services

Potential Funding Source: City of Poway

Implementation Timeline: FY 2017-2020

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4.3.4 Earthquake

4.3.4.1 Nature of Hazard

An earthquake is a sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of the Earth's tectonic plates. The effects of an earthquake can be felt far beyond the site of its occurrence. They usually occur without warning and, after just a few seconds, can cause massive damage and extensive casualties. Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure. Ground motion is the vibration or shaking of the ground during an earthquake. When a fault ruptures, seismic waves radiate, causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter. Soft soils can further amplify ground motions. The severity of these effects is dependent on the amount of energy released from the fault or epicenter. One way to express an earthquake's severity is to compare its acceleration to the normal acceleration due to gravity. The acceleration due to gravity is often called "g". A 100% g earthquake is very severe. More damage tends to occur from earthquakes when ground acceleration is rapid. Peak ground acceleration (PGA) is a measure of the strength of ground movement. PGA measures the rate in change of motion relative to the established rate of acceleration due to gravity (980 cm/sec/sec). PGA is used to project the risk of damage from future earthquakes by showing earthquake ground motions that have a specified probability (10%, 5%, or 2%) of being exceeded in 50 years. These ground motion values are used for reference in construction design for earthquake resistance. The ground motion values can also be used to assess relative hazard between sites, when making economic and safety decisions.

Another tool used to describe earthquake intensity is the Richter scale. The Richter scale was devised as a means of rating earthquake strength and is an indirect measure of seismic energy released. The scale is logarithmic with each one-point increase corresponding to a 10-fold increase in the amplitude of the seismic shock waves generated by the earthquake. In terms of actual energy released, however, each one-point increase on the Richter scale corresponds to about a 32-fold increase in energy released. Therefore, a magnitude (M) 7 earthquake is 100 times (10 X 10) more powerful than a M5 earthquake and releases 1,024 times (32 X 32) the energy. An earthquake generates different types of seismic shock waves that travel outward from the focus or point of rupture on a fault. Seismic waves that travel through the earth's crust are called body waves and are divided into primary (P) and secondary (S) waves. Because P waves move faster (1.7 times) than S waves they arrive at the seismograph first. By measuring the time delay between arrival of the P and S waves and knowing the distance to the epicenter, seismologists can compute the Richter scale magnitude for the earthquake.

The Modified Mercalli Scale (MMI) is another means for rating earthquakes, but one that attempts to quantify intensity of ground shaking. Intensity under this scale is a function of distance from the epicenter (the closer to the epicenter the greater the intensity), ground acceleration, duration of ground shaking, and degree of structural damage. This rates the level of severity of an earthquake by the amount of damage and perceived shaking (Table 4.3-1).

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**Table 4.3-1
Modified Mercalli Intensity Scale**

MMI Value	Description of Shaking Severity	Summary Damage Description Used on 1995 Maps	Full Description
I.			Not felt
II.			Felt by persons at rest, on upper floors, or favorably placed.
III.			Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV.			Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing motorcars rock. Windows, dishes, doors rattle. In the upper range of IV, wooden walls and frame creak.
V.	Light	Pictures Move	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clock stop, start, change rate.
VI.	Moderate	Objects Fall	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster and masonry D cracked.
VII.	Strong	Nonstructural Damage	Difficult to stand. Noticed by drivers of motorcars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roofline. Fall of plaster, loose bricks, stones, tiles, cornices. Some cracks in masonry C. Small slides and caving in along sand or gravel banks. Concrete irrigation ditches damaged.
VIII.	Very Strong	Moderate Damage	Steering of motorcars affected. Damage to masonry C, partial collapse. Some damage to masonry B; none to masonry A. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, and elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Cracks in wet ground and on steep slopes.
IX.	Very Violent	Extreme Damage	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land.
X.			Rails bent greatly. Underground pipelines completely out of services.
XI.			Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.

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Several major active faults exist in San Diego County, including the Rose Canyon, La Nacion, Elsinore, San Jacinto, Coronado Bank and San Clemente Fault Zones. The Rose Canyon Fault Zone is part of the Newport-Inglewood fault zone, which originates to the north in Los Angeles, and the Vallecitos and San Miguel Fault Systems to the south in Baja California (see Figure 4.3.3). The Rose Canyon Fault extends inland from La Jolla Cove, south through Rose Canyon, along the east side of Mission Bay, and out into San Diego Bay. The Rose Canyon Fault is considered to be the greatest potential threat to San Diego as a region, due to its proximity to areas of high population. The La Nacion Fault Zone is located near National City and Chula Vista. The Elsinore Fault Zone is a branch of the San Andreas Fault System. It originates near downtown Los Angeles, and enters San Diego County through the communities of Rainbow and Pala; it then travels in a southeasterly direction through Lake Henshaw, Santa Ysabel, Julian; then down into Anza-Borrego Desert State Park at Agua Caliente Springs, ending at Ocotillo, approximately 40 miles east of downtown. The San Jacinto Fault is also a branch of the San Andreas Fault System. This fault branches off from the major fault as it passes through the San Bernardino Mountains. Traveling southeasterly, the fault passes through Clark Valley, Borrego Springs, Ocotillo Wells, and then east toward El Centro in Imperial County. This fault is the most active large fault within County of San Diego. The Coronado Bank fault is located about 10 miles offshore. The San Clemente Fault lies about 40 miles off La Jolla and is the largest offshore fault at 110 miles or more in length (Unified San Diego County Emergency Services Organization Operational Area Emergency Plan, 2014).

4.3.4.2 Disaster History

Historic documents record that a very strong earthquake struck San Diego on May 27, 1862, damaging buildings in Old Town and opening up cracks in the earth near the San Diego River mouth. This destructive earthquake was centered on either the Rose Canyon or Coronado Bank faults and descriptions of damage suggest that it had a magnitude of about 6.0 (M6). The strongest recently recorded earthquake in San Diego County was a M5.3 earthquake that occurred on July 13, 1986 on the Coronado Bank Fault, 25 miles west of Solana Beach. In recent years there have been several moderate earthquakes recorded within the Rose Canyon Fault Zone as it passes beneath the City of San Diego. Three temblors shook the city on 17 June 1985 (M3.9, 4.0, 3.9) and a stronger quake occurred on 28 October 1986 (M4.7) (Demere, SDNHM website 2003). The most recent significant earthquake activity occurred on June 15, 2004 with a M5.3 on the San Diego Trough Fault Zone approximately 50 miles SW of San Diego. It was reported as an IV on the MMI (Southern California Seismic Network).

4.3.4.3 Location and Extent/Probability of Occurrence and Magnitude

Figure 4.3.3 displays the location and extent of the profiled earthquake hazard areas for San Diego County. This is based on a USGS earthquake model that shows probabilistic peak ground acceleration for every location in San Diego County. Since 1984, earthquake activity in San Diego County has increased twofold over the preceding 50 years (Demere, SDNHM website 2003). All buildings that have been built in recent decades must adhere to building codes that require them to be able to withstand earthquake magnitudes that create a PGA of 0.4 or greater. Ongoing field and laboratory studies suggest the following maximum likely magnitudes for local faults: San Jacinto (M6.4 to 7.3), Elsinore (M6.5 to 7.3), Rose Canyon (M6.2 to 7.0), La Nacion (M6.2 to 6.6), Coronado Bank (M6.0 to 7.7), and San Clemente (M6.6 to 7.7) (Demere, SDNHM website 2003).

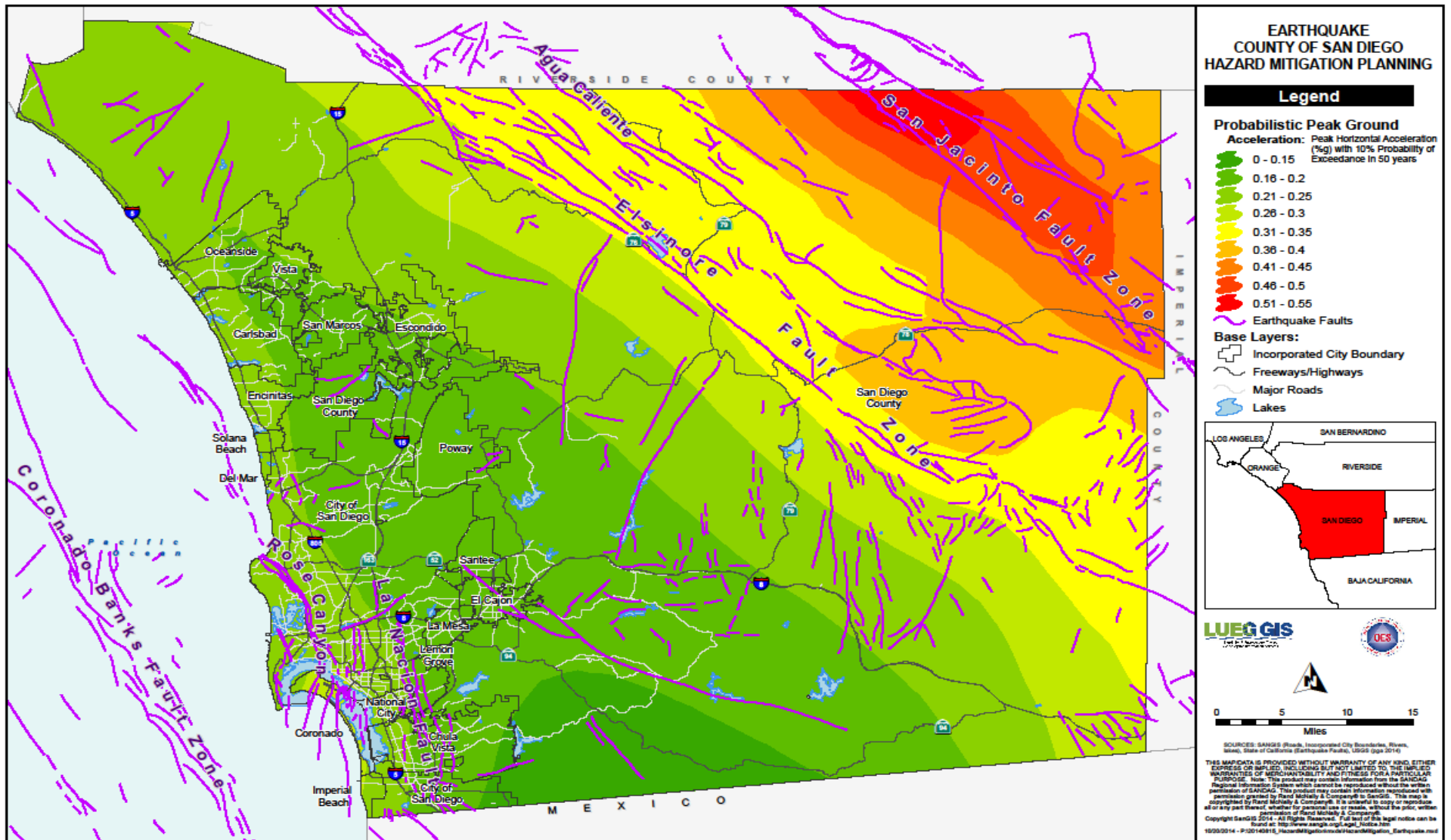
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Data used to profile earthquake hazard included probabilistic PGA data from the United States Geological Survey (USGS) and a Scenario Earthquake Shake map for Rose Canyon from the California Integrated Seismic Network (CISN) (refer to Attachment A for complete data matrix). From these data, the HMWG determined that risk level for earthquake is determined to be high if an area lies within a 0.3 or greater PGA designation. Earthquakes were modeled using HAZUS-MH, which uses base information to derive probabilistic peak ground accelerations much like the PGA map from USGS that was used for the profiling process.

The potential for an earthquake in the San Diego region is considered somewhat likely.

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Figure 4.3.3



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4.4.2.4 *Earthquake, Liquefaction and Earthquake-Induced Landslides*

The data used in the earthquake hazard assessment were: 100-, 250-, 500-, 750-, 1000-, 1500-, 2000-, and 2500- year return period USGS probabilistic hazards. Soil conditions for San Diego County as developed by USGS were also used, which allowed for a better reflection of amplification of ground shaking that may occur. The HAZUS software model, which was developed for FEMA by the National Institute of Building Services as a tool to determine earthquake loss estimates, was used to model earthquake and flood for this assessment. This software program integrates with a GIS to facilitate the manipulation of data on building stock, population, and the regional economy with hazard models. PBS&J updated this model in 2003 to HAZUS-MH (Multiple Hazard), which can model earthquake and flood, along with collateral issues associated with each model, such as liquefaction and landslide with earthquakes. This software was not released prior to the beginning of the planning process; however, PBS&J performed vulnerability and loss estimation models for earthquakes and flood for this project using the newer model.

Additionally, the earthquake risk assessment explored the potential for collateral hazards such as liquefaction and earthquake-induced landslides. Three cases were examined, one case with shaking only, a second case with liquefaction potential, and a third with earthquake-induced landslides. Once the model was complete, the identified vulnerable assets were superimposed on top of this information, resulting in three risk/loss estimates: 1) the aggregated exposure and building count (both dollar exposure and population) at the census block level for residential and commercial occupancies, 2) the aggregated population at risk at the census block level, and 3) the critical infrastructure at risk (schools, hospitals, airports, bridges, and other facilities of critical nature). These results were then aggregated and presented by hazard risk level per jurisdiction. Results for residential and commercial properties were generated as annualized losses, which average all eight of the modeled return periods (100-year through 2500-year events). For critical facility losses it was helpful to look at 100- and 500-year return periods to plan for an event that is more likely to occur in the near-term. In the near term, a 500-year earthquake would cause increased shaking, liquefaction and landslide, which would be expected to increase loss numbers. Exposure for annualized earthquake included buildings and population in the entire county because a severe or worst case scenario earthquake could affect any structure in the County. Furthermore, the annualized earthquake loss table also shows potential collateral exposure and losses from liquefaction and landslide separately; this is the additional loss from earthquake due to liquefaction or landslide caused by earthquakes and should be added to the shaking-only loss values to get the correct value. (The collateral liquefaction and landslide loss results for critical facilities were included with earthquake in Tables 4.4-11 and 4.4-12, to plan for an event that is more likely to occur in the near-term as discussed above).

Table 4.4-10 provides a breakdown of potential exposure and losses due to annualized earthquake events by jurisdiction. Tables 4.4-11 and 4.4-12 provide a breakdown of infrastructure and critical facility losses from 100-year and 500-year earthquakes, respectively. Approximately 2,800,000 people may be at risk from the annualized earthquake and earthquake-induced liquefaction hazards. In addition, special populations at risk that may be impacted by the earthquake hazard in San Diego County include 13,689 low-income households and 24,316 elderly persons.

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**Table 4.4-10
Potential Exposure and Losses from Annualized Earthquake Hazard by Jurisdiction**

Jurisdiction	Exposed Population	Residential Buildings at Risk					Commercial Buildings at Risk				
		Building Count	**Potential Loss from Shaking (x\$1000)	**Potential Additional Loss from Liquefaction (x\$1000)	**Potential Additional Loss from Landslide (x\$1000)	Potential Exposure (x\$1000)	Building Count	**Potential Loss from Shaking (x\$1000)	**Potential Additional Loss from Liquefaction (x\$1000)	**Potential Additional Loss from Landslide (x\$1000)	Potential Exposure (x\$1000)
Carlsbad	104,707	43,723	2,649	0	524	12,308,025	1,559	998	0	352	6,986,970
Chula Vista	232,095	77,457	3,086	332	586	21,804,146	2,184	772	50	262	9,788,033
Coronado	23,009	9,541	1,309	156	208	2,685,792	470	224	0	75	2,106,399
Del Mar	4,591	2,537	235	0	46	714,166	220	110	0	27	985,974
El Cajon	98,205	35,656	1,739	0	319	10,037,164	1,360	726	0	218	6,095,112
Encinitas	64,145	24,848	1,962	0	536	6,994,712	1,268	659	0	209	5,682,796
Escondido	143,071	47,044	2,743	0	399	13,242,886	1,835	1,149	0	339	8,223,920
Imperial Beach	28,243	9,859	680	149	94	2,775,309	346	87	8	34	1,550,668
La Mesa	56,880	25,333	1,026	0	121	7,131,240	952	318	0	82	4,266,578
Lemon Grove	25,650	8,824	454	0	56	2,483,956	365	95	0	32	1,635,821
National City	56,522	15,776	874	56	203	4,440,944	892	420	0	132	3,997,676
Oceanside	179,626	64,642	4,336	646	1,156	18,196,723	1,964	849	34	293	8,802,059
Poway	51,126	16,339	776	0	141	4,599,429	732	257	0	82	3,280,604
San Diego (City)	1,354,013	510,740	32,046	1,648	8,721	143,773,310	18,862	12,428	725	4,231	84,533,825
San Marcos	83,149	27,726	934	0	113	7,804,869	812	518	0	153	3,639,140
Santee	56,848	19,681	1,076	0	279	5,540,202	582	252	0	108	2,608,349
Solana Beach	13,547	6,512	573	62	108	1,833,128	322	312	15	84	1,443,107
Unincorporated-Rural	168,254	60,561	886	0	152	17,047,922	2,177	149	0	43	9,756,661
Unincorporated-Urban Core	333,626	108,042	8,963	1	2,113	30,413,823	3,560	1,123	0	329	15,954,852
Vista	96,100	30,707	1,597	0	251	8,644,021	1,163	411	0	116	5,212,217
Total	3,173,407	1,145,548	\$67,943	\$3,050	\$16,126	\$322,471,762	\$41,625	\$21,860	\$832	\$7,202	\$186,550,763

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Table 4.4-11

Potential Exposure to Critical Facilities and Infrastructure from 100-Year Earthquake Hazard by Jurisdiction

Jurisdiction	Data	AIR	BRDG	BUS	COM	ELEC	EMER	GOVT	HOSP	INFR	PORT	POT	WWTR	RAIL	SCH	TOTAL
Carlsbad	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chula Vista	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coronado	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Del Mar	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
El Cajon	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Encinitas	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Escondido	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Imperial Beach	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
La Mesa	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lemon Grove	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
National City	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oceanside	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poway	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Diego (City)	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Marcos	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santee	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solana Beach	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unincorporated - Rural	Number	15	30	1	19	0	26	0	8	437	0	0	1	0	28	565
	Exposure (x\$1000)	3,000,000	5,748	2,000	38,000	0	52,000	0	800,000	1,647	0	0	100,000	0	28,000	4,027,395
Unincorporated - Urban Core	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vista	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Number		15	30	1	19	0	26	0	8	437	0	0	1	0	28	565
Total Exposure (x\$1000)		3,000,000	5,748	2,000	38,000	0	52,000	0	800,000	1,647	0	0	100,000	0	28,000	4,027,395

Appendix H - Excerpts from San Diego County Multi-Hazard Mitigation Plan

Table 4.4-12

Potential Exposure to Critical Facilities and Infrastructure from 500-Year Earthquake Hazard by Jurisdiction

Jurisdiction	Data	AIR	BRDG	BUS	COM	ELEC	EMER	GOVTT	HOSP	INFR	PORT	POT	WWTR	RAIL	SCH	TOTAL
Carlsbad	Number	1	33	0	2	1	7	5	2	153	0	2	0	0	33	239
	Exposure (x\$1000)	200,000	6,323	0	4,000	10,000	14,000	10,000	200,000	247	0	200,000	0	0	33,000	677,570
Chula Vista	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coronado	Number	0	1	0	1	0	2	4	1	19	0	0	0	0	9	37
	Exposure (x\$1000)	0	192	0	2,000	0	4,000	8,000	100,000	30	0	0	0	0	9,000	123,222
Del Mar	Number	0	5	0	0	0	1	2	0	14	0	0	0	0	2	24
	Exposure (x\$1000)	0	958	0	0	0	2,000	4,000	0	10	0	0	0	0	2,000	8,968
El Cajon	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Encinitas	Number	0	16	0	1	0	6	3	3	85	0	1	0	7	25	147
	Exposure (x\$1000)	0	3,066	0	2,000	0	12,000	6,000	300,000	145	0	100,000	0	14,000	25,000	462,211
Escondido	Number	0	71	1	4	0	8	8	8	83	0	1	1	1	46	232
	Exposure (x\$1000)	0	13,604	2,000	8,000	0	16,000	16,000	800,000	211	0	100,000	100,000	2,000	46,000	1,103,815
Imperial Beach	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
La Mesa	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lemon Grove	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
National City	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oceanside	Number	1	43	2	4	0	10	12	11	124	0	1	0	8	43	259
	Exposure (x\$1000)	200,000	8,239	4,000	8,000	0	20,000	24,000	1,100,000	250	0	100,000	0	16,000	43,000	1,523,489
Poway	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Diego (City)	Number	2	115	3	15	4	24	35	4	239	47	1	0	5	68	562
	Exposure (x\$1000)	400,000	22,034	6,000	30,000	40,000	48,000	70,000	400,000	421	940,000	100,000	0	10,000	68,000	2,134,455
San Marcos	Number	0	12	0	2	0	8	3	2	59	0	0	0	2	28	116
	Exposure (x\$1000)	0	2,299	0	4,000	0	16,000	6,000	200,000	149	0	0	0	4,000	28,000	260,448
Santee	Number	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Exposure (x\$1000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solana Beach	Number	0	5	0	0	0	1	2	0	28	0	0	0	1	9	46
	Exposure (x\$1000)	0	958	0	0	0	2,000	4,000	0	47	0	0	0	2,000	9,000	18,005
Unincorporated - Rural	Number	30	188	2	31	2	76	1	12	1,145	0	0	4	0	63	1,554
	Exposure (x\$1000)	6,000,000	36,021	4,000	62,000	20,000	152,000	2,000	1,200,000	3,818	0	0	400,000	0	63,000	7,942,838
Unincorporated - Urban Core	Number	0	39	0	9	0	20	3	6	165	0	1	0	2	45	290
	Exposure (x\$1000)	0	7472.4	0	18000	0	40000	6000	600000	252	0	100000	0	4000	45000	820,725
Vista	Number	0	12	0	0	0	9	4	3	53	0	0	0	10	40	131
	Exposure (x\$1000)	0	2,299	0	0	0	18,000	8,000	300,000	101	0	0	0	20,000	40,000	388,400
Total Number		34	540	8	69	7	172	82	52	2,167	47	7	5	36	411	3,637
Total Exposure (x\$1000)		6,800,000	103,464	16,000	138,000	70,000	344,000	164,000	5,200,000	5,681	940,000	700,000	500,000	72,000	411,000	15,464,145

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Appendix I. Notice of Public Hearing, City Council Agenda Report, and Signed Resolutions of Adoption

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Appendix I - Notice of Public Hearing, City Council Agenda Report, and Signed Resolutions of Adoption



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Order ID: 7771257

* Agency Commission not included

GROSS PRICE * : \$168.08

PACKAGE NAME: Legal-PMDO-Legal Notices



Order ID: 7771257

* Agency Commission not included

GROSS PRICE * : \$168.08

PACKAGE NAME: Legal-PMDO-Legal Notices

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AdSize(s): 1 Column
Run Date(s): Thursday, May 6, 2021, Thursday, May 13, 2021
Color Spec. B/W

Preview

**NOTICE OF CITY COUNCIL
PUBLIC HEARING**

NOTICE IS HEREBY GIVEN that the City Council of the City of Poway will hold a Public Hearing to consider the following item: Adoption of the City of Poway's 2020 Water Shortage Contingency Plan (WSCP). The Draft WSCP is available for public review at the City of Poway, Public Works Administration, 14467 Lake Poway Road, Poway, CA or by visiting the City's website at www.poway.org/317. Upon conclusion of the public hearing, the City Council may revise, change, modify and/or adopt the Draft 2020 WSCP.

DATE OF MEETING: May 18, 2021

TIME OF MEETING: 7:00 p.m.

LOCATION OF MEETING:

**City Council Chamber
13325 Civic Center Drive
Poway, CA 92064**

PROJECT NAME: 2020 Water Shortage Contingency Plan

STAFF: Jessica Parks

EMAIL: jparks@poway.org

PHONE NUMBER: (858) 668-4703

ANY INTERESTED PERSON may review the staff report and obtain additional information by contacting the staff or visiting the City's website. The staff report is released the Tuesday before the hearing date and is available by visiting the City's website at <https://poway.org/636/Council-Meetings>.

If you wish to express comments in favor or against the above, you may participate by phone or online (details available at <https://poway.org/636/Council-Meetings>) or submit your comments in writing to the City Clerk, City of Poway. If you

Appendix I - Notice of Public Hearing, City Council Agenda Report, and Signed Resolutions of Adoption



Printed: 4/14/2021 11:55:46 AM

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Order ID: 7771257

* Agency Commission not included

GROSS PRICE * : \$168.08

PACKAGE NAME: Legal-PMDO-Legal Notices

the city clerk, city attorney, if you have any questions regarding the process of this meeting, you may contact the City Clerk's Office at 858-668-4530 or email cityclerk@poway.org. If you challenge the matter in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City Council at, or prior to, the public hearing. If you have special needs requiring assistance at the meeting, please call the City Clerk's Office at least 24 hours prior to the meeting so that accommodations can be arranged. Published in the Poway News Chieftain on Thursday, May 6 & 13, 2021. Order No. 21-019. PO7771257

Appendix I - Notice of Public Hearing, City Council Agenda Report, and Signed Resolutions of Adoption



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Order ID: 7771260

* Agency Commission not included

GROSS PRICE * : **\$179.12**

PACKAGE NAME: Legal-PMDO-Legal Notices



Order ID: 7771260

* Agency Commission not included

GROSS PRICE * : \$179.12

PACKAGE NAME: Legal-PMDO-Legal Notices

Product(s): Pomerado, CApublicnotice.com_UTCP
AdSize(s): 1 Column
Run Date(s): Thursday, May 20, 2021, Thursday, May 27, 2021
Color Spec. B/W

Preview

**NOTICE OF CITY COUNCIL
PUBLIC HEARING**

NOTICE IS HEREBY GIVEN that the City Council of the City of Poway will hold a Public Hearing to consider the following item: Adoption of the City of Poway's 2020 Urban Water Management Plan (UWMP) and an Addendum to the 2015 UWMP to address Delta Resilience. The Draft 2020 UWMP and Addendum to the 2015 UWMP are available for public review at the City of Poway, Public Works Administration, 14467 Lake Poway Road, Poway, CA or by visiting the City's website at www.poway.org/317. Upon conclusion of the public hearing, the City Council may revise, change, modify and/or adopt the Draft 2020 UWMP and an Addendum to the 2015 UWMP.

DATE OF MEETING: June 1, 2021

TIME OF MEETING: 7:00 p.m.

LOCATION OF MEETING:

**City Council Chamber
13325 Civic Center Drive
Poway, CA 92064**

**PROJECT NAME: 2020 URBAN
WATER MANAGEMENT PLAN**

STAFF: Jessica Parks

EMAIL: jparks@poway.org

PHONE NUMBER: (858) 668-4703

ANY INTERESTED PERSON may review the staff report and obtain additional information by contacting the staff or visiting the City's website. The staff report is released the Tuesday before the hearing date and is available by visiting the City's website at <https://poway.org/636/Council-Meetings>.

If you wish to express comments in favor or against the above, you may participate by phone or online

Appendix I - Notice of Public Hearing, City Council Agenda Report, and Signed Resolutions of Adoption



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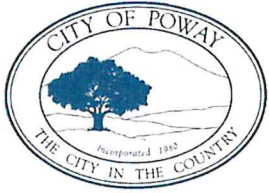
Order ID: 7771260

* Agency Commission not included

GROSS PRICE * : \$179.12

PACKAGE NAME: Legal-PMDO-Legal Notices

may participate by phone or online (details available at <https://poway.org/636/Council-Meetings>) or submit your comments in writing to the City Clerk, City of Poway. If you have any questions regarding the process of this meeting, you may contact the City Clerk's Office at 858-668-4530 or email cityclerk@poway.org. If you challenge the matter in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City Council at, or prior to, the public hearing. If you have special needs requiring assistance at the meeting, please call the City Clerk's Office at least 24 hours prior to the meeting so that accommodations can be arranged. Published in the Poway News Chieftain on Thursday, May 20 & 27, 2021. Order No. 21-020. PO7771260



AGENDA REPORT

City of Poway

CITY COUNCIL

DATE: June 1, 2021

TO: Honorable Mayor and Members of the City Council

FROM: Eric Heidemann, Director of Public Works *EH*

CONTACT: Jessica Parks, Utilities Administrator *JP*
(858) 668-4703 or jparks@poway.org

SUBJECT: Adoption of the City of Poway's 2020 Urban Water Management Plan and Addendum to the City of Poway's 2015 Urban Water Management Plan

Summary:

To confirm that water agencies are adequately planning to meet existing and future water demands under normal conditions and for extended dry periods, the California Department of Water Resources (DWR) requires water agencies that either provide over 3,000 acre-feet (AF) of water annually or serve more than 3,000 urban connections prepare an Urban Water Management Plan (UWMP). As the City of Poway (Poway) has approximately 14,200 water service connections and provides over 3,000 AF of water annually, staff has prepared Poway's 2020 UWMP which provides a framework for long-term water planning and develops a long-term water resource plan to ensure that enough water will be available to meet both current and planned water demands. Poway will also append its 2015 UWMP through an addendum to meet requirements of the Delta Plan Policy by demonstrating reduced regional reliance on the Delta.

Recommended Action:

It is recommended that the City Council take public input, close the public hearing, and adopt the Resolutions.

Discussion:

DWR requires urban water suppliers that either provide over 3,000 AF of water annually or serve more than 3,000 urban connections to submit an UWMP every five years (California Water Code §10610-§10656 and §10608). The format of the UWMP is highly prescribed by DWR in order to achieve informational consistency. Additionally, to be eligible for state grants and loan programs, an agency must have an updated DWR approved UWMP.

Poway strives to continue to provide a safe and reliable supply of water to the customers within its service area through nearly 14,200 municipal service connections (as of 2020). To demonstrate future reliability, the 2020 UWMP discusses the following components: water demands, and system uses,

Appendix I - Notice of Public Hearing, City Council Agenda Report, and Signed Resolutions of Adoption

water use baselines and targets (to measure water conservation), water supplies, water supply reliability, water shortage contingency planning, and demand management measures.

In order to comply with state law, Poway's 2020 UWMP must be finalized, adopted by the Council, and submitted to DWR by July 1, 2021. A public hearing must be held prior to the adoption of the 2020 UWMP and may be held in conjunction with the adoption hearing. Additionally, Poway will be appending its 2015 UWMP through an addendum to meet the requirements of the Delta Plan Policy WR P1 *Reduce Reliance on the Delta through Improved Regional Water Self-Reliance* (California Code of Regulations, Title 23 §5003) by demonstrating reduced regional reliance on the Delta. The 2020 UWMP will also meet the Delta Plan Policy WR P1 Delta requirements.

2020 UWMP Highlights

Water Supply Reliability:

The UWMP details the City's water reliability assessment through 2045. The City's water supply portfolio includes imported water purchased from the San Diego County Water Authority (SDCWA), recycled water purchased from the City of San Diego, and local surface water runoff from Lake Poway (which is variable and not included in the supply projections). Poway receives approximately 99% of its drinking water from SDCWA and therefore, Poway's UWMP is aligned with the SDCWA 2020 UWMP water supply and demand projections.

SDCWA used a statistical modeling approach to develop its long-range demand forecast which included data from various sources including San Diego's Association of Governments (SANDAG) regional growth forecast. The SDCWA's 2020 UWMP reports that future imported and stored water would be sufficient to meet future demands of all its member agencies under normal conditions, as well as single dry year and multiple dry year assessments. The City utilized the demand forecast model prepared by SDCWA and Poway's historical water use data to formulate water use projections for 2025, 2030, 2035, 2040, and 2045.

Poway's projected potable, raw, and recycled water demands are presented in **Table 1** below. The projections also include active and passive conservation savings. "Active" conservation is water conserved by the implementation of demand management programs such as turf-replacement, or state-mandated water use reductions (e.g., no hosing off driveways, no runoff when irrigating, etc.). "Passive" conservation is water saved by the implementation of various regulations and codes such as appliance standards and the water efficiency landscape ordinance.

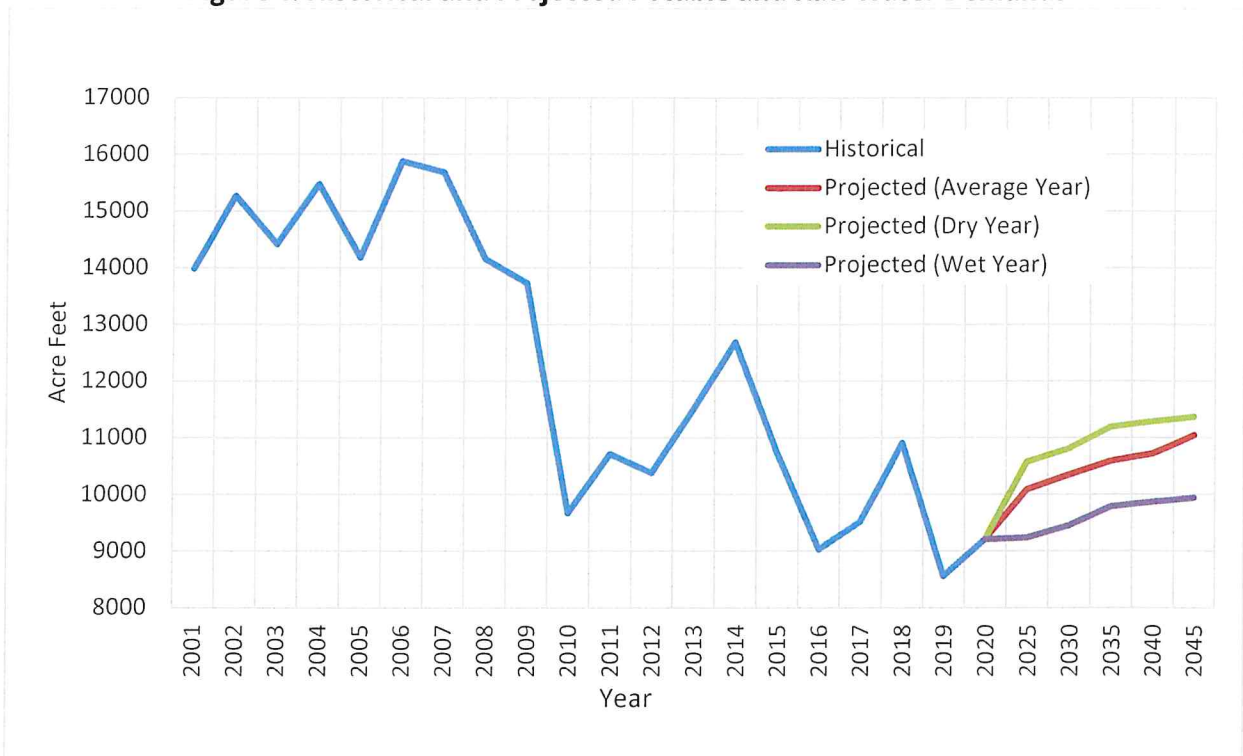
Table 1: Total Potable and Raw Water Demands

Total Potable and Raw Water Demands					
	2025	2030	2035	2040	2045
Baseline Water Demands	11,936	12,231	12,566	12,832	13,086
Recycled Water Demands	(450)	(450)	(450)	(450)	(450)
Active/Passive Conservation	(1,399)	(1,437)	(1,527)	(1,665)	(1,590)
Total Potable and Raw Water Demands	10,087	10,344	10,589	10,717	11,046

The total projected demands in **Table 1** are Poway's forecasted water demands during an average year with normal precipitation as projected by the SDCWA. However, future water use in Poway is anticipated to be variable depending on the actual conditions throughout the year; and therefore,

water use during a dry year and wet year have also been projected based on Poway's historical demands and estimated range of demand projections founded on the type of year. **Figure 1** illustrates projected demands during average, dry and wet years along with Poway's historical demands for the past twenty years.

Figure 1: Historical and Projected Potable and Raw Water Demands



Drought Risk Assessment:

Pursuant to a new requirement from DWR, a water supplier must include in its 2020 UWMP a Drought Risk Assessment (DRA) to compare supplies and demands over a five-year consecutive dry period, or extended drought. Poway's DRA reports that during an extended drought, the City could purchase additional supplies from SDCWA to overcome shortages to fully meet projected demands. **Table 2** demonstrates a dry five-year scenario with increased demands and supplies available.

Table 2: Drought Risk Assessment

Five-Year Drought Risk Assessment Table*					
	2021	2022	2023	2024	2025
Projected Normal Year Demands (AFY)	9,455	9,726	9,996	10,267	10,537
Demand Projection Multiplier (Change from Normal Year)	108%	112%	116%	120%	125%
Projected Five-Year Drought Demands (AFY)	10,211	10,893	11,595	12,320	13,171
Total Supplies (AFY)	10,211	10,893	11,595	12,320	13,171
Surplus/Shortfall	0	0	0	0	0
Resulting % Use Reduction from WSCP Action	0%	0%	0%	0%	0%

*Includes Recycled Water, Excludes Conservation

Appendix I - Notice of Public Hearing, City Council Agenda Report, and Signed Resolutions of Adoption

Compliance with SB X7-7:

The Water Conservation Act of 2009, known as SB X7-7, or 20% by 2020, required water suppliers to reduce their per person (or per capita) water use by at least 20% by the year 2020. Water suppliers that do not achieve the required water use reductions are potentially ineligible to receive State funding. Poway achieved its water use reduction goal, reducing water use by approximately 20% more than its target, as shown in **Table 3**. Poway's baseline gallons per person, per day (GPCD) was 263 GPCD. Poway was required to meet its SB X7-7 target of 210 GPCD by the end of 2020. Poway's actual 2020 per capita use was 167 GPCD.

Table 3: SB X7-7 Target and Compliance

SB X7-7 Target and 2020 Compliance			
Baseline GPCD (1999 – 2008)	SB X7-7 2020 Target GPCD	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?
263	210	167	Yes

Water Shortage Contingency Plan:

In order to comply with the State's new legislation, Poway developed a Water Shortage Contingency Plan (WSCP) to supplement its existing Water Conservation Plan (Poway Municipal Code Chapter 8.94). The City adopted the WSCP at its May 18, 2021 public hearing. Pursuant to the new legislation, Poway's WSCP addresses several new requirements, including, but not limited to: describing key attributes and procedures for conducting an annual water supply reliability assessment, crosswalk the State's six standard water shortage response levels to Poway's existing four levels, quantify estimated water savings associated with each shortage response action, describe communication protocols and public outreach measures, identify monitoring and reporting procedures to track compliance, and discuss methods to reevaluate and improve the WSCP. The WSCP document is included in the UWMP as Appendix G. The WSCP will be reviewed every five years in conjunction with the UWMP update and can also be updated as needed independent of the UWMP.

2015 UWMP Addendum on Delta Reliance:

To address the requirements of the Delta Plan Policy WR P1 *Reduced Reliance on the Delta Through Improved Regional Water Self-Reliance* (California Code of Regulations, Title 23 §5003), Poway is required to append its 2015 UWMP through an addendum to demonstrate reduced reliance on the Delta. DWR has proposed the Delta Conveyance Project to develop new diversion and conveyance facilities in the Delta necessary to restore and protect the reliability of State Water Project (the conveyance of water from the San Joaquin/Bay Delta area to Southern California) water deliveries. As part of assessing whether to approve the Delta Conveyance Project, DWR is preparing an environmental impact report pursuant to the requirements of the California Environmental Quality Act. As Poway does benefit from the proposed Delta Conveyance Project, documentation is required to be included in the City's 2015 and 2020 UWMP.

UWMP Adoption:

DWR requires water suppliers to conduct a public hearing to consider adoption of the 2020 UWMP. To streamline the process of a public hearing for both the 2020 UWMP and the 2015 UWMP addendum, Poway has elected to hold one public hearing for both UWMPs to receive public comments and adopt separate resolutions for each UWMP. Attachment A is the resolution for the 2020 UWMP, and Attachment C is the resolution for the 2015 addendum.

Appendix I - Notice of Public Hearing, City Council Agenda Report, and Signed Resolutions of Adoption

Environmental Review:

This item is not subject to review under the California Environmental Quality Act (CEQA).

Fiscal Impact:

None with this action.

Public Notification:

The draft 2020 UWMP report was posted to the City's website, <https://poway.org/317/Water>, on April 30, 2021. Water Code Section 10621 requires water agencies to notify key stakeholders, at least sixty days in advance of the public hearing, that the UWMP is being reviewed and changes to the plan are being considered. Notification letters were sent to SDCWA, the City of San Diego, City of Escondido, Ramona Municipal Water District, the County of San Diego, the San Diego Association of Governments, and the San Diego County Local Agency Formation Commission on March 9, 2021. Per Water Code §10642, and in accordance with Government Code §6066, a Notice of City Council Public Hearing was published in the *Poway News Chieftain* on Thursday, May 20, 2021. A second Notice of City Council Public Hearing was published in the same publication on Thursday, May 27, 2021.

Attachments:

- A. Resolution Adopting the 2020 Urban Water Management Plan
- B. Executive Summary of the 2020 Urban Water Management Plan
- C. Resolution Adopting an Addendum to the 2015 Urban Water Management Plan on Delta Reliance
- D. Addendum for the 2015 UWMP Appendix H: Delta Reliance
- E. An electronic copy of the complete 2020 Urban Water Management Plan is available at <https://poway.org/DocumentCenter/View/8190/Public-Review-Draft-2020-UWMP>

Reviewed/Approved By:

Reviewed By:

Approved By:

Wendy Kaserman
Assistant City Manager

Alan Fenstermacher
City Attorney

Chris Hazeltine
City Manager

RESOLUTION NO. 21-030

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF
POWAY, CALIFORNIA, ADOPTING THE CITY OF POWAY'S
2020 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California legislature enacted Assembly Bill 797 (Water Code §10610 et. seq., known as the Urban Water Management Planning Act of 1983, and as amended subsequently) (the "Act"), which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, prepare an Urban Water Management Plan (the "Plan"), the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the City of Poway is an urban water supplier that provides service to approximately 14,200 connections (potable, raw, and recycled);

WHEREAS, the Act requires the Plan to be reviewed at least once every five years, and that the City of Poway make any amendments or changes to its Plan which are indicated by the review;

WHEREAS, in compliance with the Act the City of Poway has adopted a Plan in 1996 (Resolution No. 96-003), which was reviewed and modified by a Plan in 2000 (Resolution No. 00-118), which was reviewed and modified by a Plan in 2005 (Resolution No. 05-096), which was reviewed and further modified by a Plan in 2011 (Resolution No. 11-030), and which was most recently reviewed and modified by a Plan in 2016 (Resolution No. 16-015) (the "2015 Plan");

WHEREAS, the 2015 Plan was reviewed for consistency and compliance with the Act, resulting in the development of a new Plan (the "2020 Plan"), which is required to be submitted electronically to the California Department of Water Resources (DWR) by July 1, 2021, after public review and hearing; and a copy filed with the DWR and California State Library within thirty days of adoption;

WHEREAS; while preparing the 2020 Plan, the City of Poway coordinated its efforts with other appropriate agencies in the area, including the San Diego County Water Authority, County of San Diego, City of San Diego, City of Escondido, Ramona Municipal Water District, San Diego County Local Agency Formation Commission and San Diego Association of Governments;

WHEREAS; the City of Poway has prepared the 2020 Plan, which modifies the 2015 Plan, and evaluates future water supplies and demands over the next 25 years to assist with planning reasonable and beneficial use of water; tracks water conservation compliance; and provides information to the public about water supplies and water management programs in the Poway service area; and

WHEREAS; the 2020 Plan was on file at the City of Poway Public Works Administration Building, on the City of Poway's website, and available for review by the public prior to a properly noticed public hearing held by the Poway City Council regarding said Plan on June 1, 2021.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Poway as follows:

SECTION 1: In accordance with California Water Code §10652 of the Act, the preparation and adoption of the 2020 Plan is not subject to the California Environmental Quality Act Division 13 (commencing with section 21000) of the Public Resources Code.

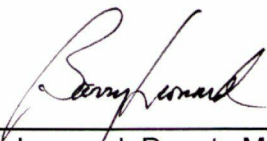
SECTION 2: The City of Poway 2020 Urban Water Management Plan is hereby approved and adopted by changes incorporated by the City Council as a result of input received (if any) at the public hearing and ordered filed with the City Clerk. The 2020 Plan hereby changes and replaces the 2015 Plan, which shall no longer be the Plan for the City of Poway effective immediately.

SECTION 3: In accordance with Water Code § 10621(d) and 10644(a)(1)-(2), an electronic copy of the Plan and Resolution will be submitted to DWR no later than July 1, 2021.

SECTION 4: The City Clerk is hereby authorized and directed to file the 2020 Plan with the DWR and the California State Library within 30 days after this date.

PASSED, ADOPTED AND APPROVED at a Regular Meeting of the City Council of the City of Poway, California on the 1st day of June, 2021 by the following vote, to wit:

AYES:	MULLIN, FRANK, GROSCH, LEONARD
NOES:	NONE
ABSENT:	VAUS
DISQUALIFIED:	NONE



Barry Leonard, Deputy Mayor

ATTEST:



Vaida Pavolas, CMC, City Clerk

RESOLUTION NO. 21-029

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF
POWAY, CALIFORNIA, ADOPTING AN ADDENDUM TO THE
2015 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California legislature enacted Assembly Bill 797 (Water Code §10610 et seq., known as the Urban Water Management Planning Act of 1983, and as amended subsequently) (the "Act"), which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, prepare an Urban Water Management Plan (the "Plan"), the primary objective of which is to plan for the conservation and efficient use of water;

WHEREAS, the City of Poway is an urban water supplier that provides service to approximately 14,200 connections (potable, raw, and recycled).

WHEREAS, the Act requires the Plan to be reviewed at least once every five years, and that the City of Poway make any amendments or changes to its Plan which are indicated by the review;

WHEREAS, pursuant to the Sacramento-San Joaquin Delta Reform Act of 2009 (Water Code §85000, et seq.), the Delta Plan, and Water Code §85201, which declares that the State's policy is to "reduce reliance on the Delta in meeting California's future water needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency," urban water suppliers are encouraged by the California Department of Water Resources (DWR) and the Delta Stewardship Council (DSC) to consider adopting an Addendum to their 2015 Plans to demonstrate consistency with the Delta Plan Policy WR P1 to Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (Cal. Code Regs. Title 23, §5003);

WHEREAS, the City of Poway has prepared an Addendum to its 2015 Plan in accordance with the Delta Plan Policy WR P1, and in accordance with applicable legal requirements, has undertaken certain coordination, notice, public involvement, public comment, and other procedures in relation to its Addendum;

WHEREAS; in accordance with the Act and Delta Plan Policy WR P1, the City of Poway has prepared its Addendum to the 2015 Plan with its own staff, with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its Addendum to its Plan, and has also utilized DWR's Urban Water Management Plan Guidebook 2020, including its related appendices, in preparing its Addendum to the 2015 Plan;

WHEREAS; in accordance with applicable law, including Water Code §10642, and Government Code §6066, a Notice of a Public Hearing regarding Poway's Addendum to the 2015 Plan was published in the Poway News Chieftain on Thursday, May 20, 2021, and a second Notice of City Council Public Hearing was published in the same publication on Thursday, May 27, 2021; and

WHEREAS; in accordance with applicable law, including but not limited to Water Code §10642, a public hearing was held on June 1, 2021 in order to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the Addendum to the 2015 Plan and issues related thereto.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Poway as follows:

SECTION 1: In accordance with California Water Code §10652 of the Act, the preparation and adoption of the Plan, including addenda thereto, is not subject to the California Environmental Quality Act Division 13 (commencing with section 21000) of the Public Resources Code.


SECTION 2: The Addendum to the City of Poway's 2015 Urban Water Management Plan to demonstrate consistency with the Delta Plan Policy to Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance is hereby approved and adopted as amended by changes incorporated by the City Council as a result of input received (if any) at the public hearing and ordered filed with the City Clerk;

SECTION 3: In accordance with Water Code § 10621(d) and 10644(a)(1)-(2), an electronic copy of the Addendum and Resolution will be submitted to DWR no later than July 1, 2021.

SECTION 4: The City Clerk is hereby authorized and directed to file the Addendum to the 2015 Plan with the DWR and the California State Library within 30 days after this date.


PASSED, ADOPTED AND APPROVED at a Regular Meeting of the City Council of the City of Poway, California on the 1st day of June, 2021 by the following vote, to wit:

AYES:	MULLIN, FRANK, GROSCH, LEONARD
NOES:	NONE
ABSENT:	VAUS
DISQUALIFIED:	NONE



Barry Leonard, Deputy Mayor

ATTEST:



Vaida Pavolias, CMC, City Clerk

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Appendix J. Addendum on Delta Reliance

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Appendix J - Addendum on Delta Reliance

Reporting on Reduced Delta Reliance

Regulatory Background

Urban water suppliers that anticipate participating in or receiving water from a proposed project, such as a multiyear water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Sacramento-San Joaquin Delta (Delta) are required to demonstrate reduced reliance on the Delta in their 2015 and 2020 Urban Water Management Plans (UWMPs) that can then be used in the certification of consistency process to demonstrate consistency with Delta Plan Policy WR P1, *Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance* (California Code Regulations, Title 23, §5003).¹ The Delta Plan Policy WR P1 identifies UWMP as the tool to demonstrate consistency with the state policy that suppliers that carry out or take part in covered actions must reduce their reliance on the Delta.²

The City of Poway's (City or Poway) information on its reduced reliance on the Delta is documented below and can be used in future certifications of consistency with WR P1 for potential future water supply covered actions in the Delta.

City of Poway Reliance on Delta Watershed

Poway currently purchases about 99% of its water supply from the San Diego County Water Authority (SDCWA). All of the water the City purchases from SDCWA is raw water, which is treated at the City's Water Treatment Plant (WTP) and distributed to customers through the City's potable water system. Purchased water from the SDCWA includes both raw imported water and a blend of treated imported and desalinated seawater. The rest of Poway's supply comes from two sources, raw water from Lake Poway and recycled water from the City of San Diego. Lake Poway captures a small amount of rain and surface runoff during rain events; however, because the quantity of Lake Poway runoff is relatively minimal, not reliable, and offset by naturally occurring evaporation and seepage, it is not considered a planned water supply source. Therefore, nearly all of Poway's potable water is sourced from the SDCWA through raw water purchases. SDCWA's imported water supplies are primarily sourced from the Colorado River via transfers from Imperial Irrigation District (IID), and from the State Water Project (SWP) and Central Valley Project (CVP) via Metropolitan Water District of Southern California (MWD).

Poway's only imported water supplies that originate in the Delta watershed are imported water supplies delivered by the SDCWA via the Metropolitan Water District of Southern California (MWD). Recognizing that the Delta supplies are threatened by uncertain long-term reliability issues associated with drought shortages, climate change, seismic events, environmental impacts, and flow restrictions, and that imported water purchases are becoming increasingly expensive, the City has taken actions to reduce demand for imported water from SDCWA, as supplied by MWD, and is continuing to explore future opportunities to continue to reduce its reliance on imported water.

As part of its *Final 2020 UWMP*, SDCWA completed a Delta Reliance analysis to evaluate reduced Delta reliance consistent with Appendix C in the California Department of Water Resources' (DWR)

¹ *Urban Water Management Plan Guidebook 2020*, California Department of Water Resources, August 2020, p. C-1.

² *Ibid.*, p. C-2.

Appendix J - Addendum on Delta Reliance

UWMP Guidebook 2020 (DWR Guidebook). Given that Poway’s only potential source of water from the Delta watershed is water purchased from SDCWA, the City relies on SDCWA’s Delta reliance analysis to also demonstrate reduced regional reliance on the Delta.

SDCWA Reduced Reliance on Delta Watershed

SDCWA’s *Final 2020 UWMP* documents consistency with WR P1 by quantifying the water supplies that contribute to regional self-reliance and demonstrating reduced reliance on the Delta watershed, as summarized below.

Quantification of Water Supplies that Contribute to Regional Self-Reliance

Water suppliers must report the expected outcome for measurable improvement in regional self-reliance as a reduction in water used from the Delta watershed. **Table 1** lists the sources of water supplies and volumes that contribute to regional self-reliance.³ As shown in the table, SDCWA’s reliance on the Delta watershed, and consequently Poway’s reliance on the Delta watershed, decreases over time as the percent of water supplies that contribute to regional self-reliance increase over time. Poway’s individual supplies that contribute to regional self-reliance can be found in Chapter 5: System Water Supplies of the City’s 2015 UWMP and 2020 UWMPs.

Table 1 – 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 (opt)
Water Use Efficiency	79,960	6,737	74,141	62,411	66,921	73,035	81,625	85,698
Water Recycling	33,668	38,660	40,459	42,993	46,493	46,593	46,693	46,793
Stormwater Capture and Use	-	-	-	-	-	-	-	-
Advanced Water Technologies	-	-	56,000	56,000	56,000	56,000	56,000	56,000
Conjunctive Use Projects	-	-	-	-	-	-	-	-
Local and Regional Water Supply and Storage Projects	235,924	250,436	355,120	402,599	423,959	484,021	480,521	480,521
Other Programs and Projects the Contribute to Regional Self-Reliance	-	-	-	-	-	-	-	-
Water Supplies Contributing to Regional Self-Reliance	349,552	295,833	525,720	564,003	593,373	659,649	664,839	669,012

Service Area Water Demands without Water Use Efficiency	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (opt)
Service Area Water Demands without Water Use Efficiency	795,410	654,022	661,722	618,169	645,165	671,509	695,860	716,469

Change in Regional Self Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (opt)
Water Supplies Contributing to Regional Self-Reliance	349,552	295,833	525,720	564,003	593,373	659,649	664,839	669,012
Change in Water Supplies Contributing to Regional Self-Reliance	-	(53,719)	176,168	214,451	243,821	310,097	315,287	319,460

Change in Percentage Regional Self Reliance (As a Percent of Water Demand without WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (opt)
Percentage of Water Supplies Contributing to Regional Self-Reliance	43.9%	45.2%	79.4%	91.2%	92.0%	98.2%	95.5%	93.4%
Change in Percentage of Water Supplies Contributing to Regional Self-Reliance	-	102.9%	180.8%	207.6%	209.3%	223.5%	217.4%	212.5%

Demonstration of Reduced Reliance on Water Supplies from the Delta Watershed

Water suppliers are required to report on the expected outcomes for measurable reductions in water supplies from the Delta watershed. For Poway, the only potential source of water from the Delta watershed is water purchased from SDCWA via MWD. Because water provided by MWD to SDCWA can include supplies that commingle Delta watershed and CVP supplies, SDCWA (and therefore Poway) must wholesale incorporate the MWD’s forecast as a reasonable methodology to forecast the percent of MWD water supply from the Delta watershed and the CVP, at least until MWD provides the methodology approved by the DSC as anticipated. To serve as placeholder for

³ *Final 2020 UWMP*, San Diego County Water Authority, May 2021, Appendix J, Table 2.

Appendix J - Addendum on Delta Reliance

this requirement, **Table 2** calculates the reduced reliance on the Delta watershed within the entirety of the MWD service area.⁴

Table 2 – Calculation of Reliance on Water Supplies from Delta Watershed⁵

Water Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (opt)
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	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (opt)
Service Area Water Demands without Water Use Efficiency Savings	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 (opt)
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
Change in Water Supplies from the Delta Watershed		(419,000)	(417,000)	(301,000)	(310,000)	(312,000)	(314,000)	(314,000)

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

The CVP/SWP contract supplies in **Table 2** include MWD's SWP Table A and Article 21 supplies.⁶ The values in **Table 2** do not include supplies from San Luis Carryover storage or Central Valley storage programs. The transfers and exchanges of supplies from the Delta watershed shown in **Table 2** include supplies from the San Bernardino Valley MWD Program, Yuba River Accord Purchase Program, the San Gabriel Valley MWD Program, and other generic SWP and Central Valley transfers and exchanges. Additional information can be found in Section 3.2 and Appendix 3 of MWD's *Draft 2020 UWMP*.⁷

⁴ *Draft 2020 UWMP*, Metropolitan Water District of Southern California, February 2021, Appendix 11, Table A.11-3.

⁵ Metropolitan Water District of Southern California, *Draft 2020 UWMP*, February 2021, Appendix 11, Table A.11-3.

⁶ *Ibid.*, p. A.11-7.

⁷ *Ibid.*, pgs. A.11-7 – 11-8.

Prepared By



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