



Public
Utilities



CITY OF SAN DIEGO

2020 Urban Water Management Plan

June 2021



The background of the slide is a scenic photograph of a large, calm lake with a deep blue surface. In the foreground, there are grassy banks and a small wooden pier extending into the water. The middle ground is filled with a dense line of palm trees and other lush vegetation. In the far distance, a range of mountains is visible under a clear, bright blue sky. The overall atmosphere is peaceful and natural.

Plan Preparation

**The 2020 San Diego UWMP was prepared
on behalf of:**

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LIST OF ABBREVIATIONS AND ACRONYMS

AAC	All-American Canal	MCE	maximum credible seismic event
AB	Assembly Bill	mgd	million gallons per day
Act	Urban Water Management Planning Act	MPE	most probable seismic event
AFY	acre-feet per year	MWD	Metropolitan Water District of Southern California
AWE	Alliance for Water Efficiency	NCPWF	North City Pure Water Facility
AWP	Advanced Water Purification	NCWRP	North City Water Reclamation Plant
AWWA	American Water Works Association	NMFS	National Marine Fisheries Service
BDCP	Bay-Delta Conservation Plan	NSA	Northern Service Area
Cal-Am	California American Water Company	oF	degrees Fahrenheit
CAP	Climate Action Plan	PLWTP	Point Loma Wastewater Treatment Plant
CAMX	Western Electricity Coordinating Council California eGrid subregion	PPIC	Public Policy Institute of California
CC	Coachella Canal	PRV	Pressure Reducing Valves
CCTAG	Climate Change Technical Advisory Group	PUD	Public Utilities Department
CDP	Carlsbad Desalination Project	PV	photovoltaic
CEQA	California Environmental Quality Act	QSA	Quantification Settlement Agreement
CII	commercial/institutional/industrial	Reclamation	US Bureau of Reclamation
City	City of San Diego	RCP	Representative Concentration Pathway
CLSP	Commercial Landscape Survey Program	RWS	Recycled Water System
CMIP5	Coupled Model Intercomparison Project Phase 5	SANDAG	San Diego Association of Governments
CRA	Colorado River Aqueduct	SB	Senate Bill
CSA	Central Service Area	SBWRP	South Bay Water Reclamation Plant
CVP	Central Valley Project	SDCCU	San Diego County Credit Union
DCP	Drought Contingency Plan	SDCWA	San Diego County Water Authority
Delta	Sacramento-San Joaquin Delta	SDG&E	San Diego Gas & Electric
DWR	Department of Water Resources	SGMA	Sustainable Groundwater Management Act of 2014
E&CSP	Emergency & Carryover Storage Project	SR	State Route
EIR	Environmental Impact Report	SRWBA	Semitropic-Rosamond Water Bank Authority
ESA	Endangered Species Act	SSA	Southern Service Area
ESP	Emergency Storage Project	SSJBS	Sacramento-San Joaquin Basin Study
ETo	evapotranspiration	State	State of California
GCM	global circulation model	SWP	State Water Project
GHG	greenhouse gas	SWRCB	State Water Resources Control Board
GPCD	gallons per capita daily	TDS	total dissolved solids
gpd	gallons per day	The Garden	The Water Conservation Garden
gpm	gallons per minute	ULFT	ultra-low flush toilet
GSA	Groundwater Sustainability Agency	USBR	U.S. Bureau of Reclamation
GSP	Groundwater Sustainability Plan	USFWS	U.S. Fish and Wildlife Service
IID	Imperial Irrigation District	UWMP	Urban Water Management Plan
IRP	Integrated Resources Plan	WBIC	Weather-based Irrigation Controller
JPA	Joint Powers Authority	WECC	Western Electricity Coordinating Council
kWh	kilowatt-hour	WRP	Water Reclamation Plant
LCR MSCP	Lower Colorado River Multi-Species Conservation Program	WSA	Water Supply Assessment
LRWRP	Long-Range Water Resources Plan	WSCP	Water Shortage Contingency Plan
M	magnitude	WTP	Water Treatment
MAF	million acre-foot	WUE	Water Use Efficiency to the Acronyms

SECTION

1

Introduction and Plan Requirements

As part of the California Urban Water Management Planning Act (Act) and resulting California Water Code, an urban water supplier must prepare, adopt and submit an Urban Water Management Plan (UWMP) to the California Department of Water Resources (DWR) every five years. The UWMP must describe the water supplier's service area, water demands and supplies, water conservation activities, and assess the reliability of water sources over a 20-year planning time frame. See **Appendix C** UWMP Checklist for California Water Code listings.

The state's 2020 UWMP Guidebook allows cities/agencies to select units of measurements and reporting year types. Units are required to remain consistent throughout the UWMP. Reporting years are recommended to also remain consistent throughout the 2020 UWMP. For this UWMP:

- For all compliance tables showing water demands, conservation and supplies, the unit of measurement is acre-feet per year (AFY)
- When reporting water treatment and wastewater treatment flows, as well as capacities of treatment, the unit of measurement is million gallons per day (mgd)
- Unless otherwise noted in text or tables, reporting years are fiscal years, which are July 1 and ends June 30 for the City of San Diego (City)

This section provides the purpose of the plan and an overview of the City, water resources issues, and major water resources initiatives, and it also summarizes the UWMP requirements, its preparation and coordination with other agencies, as well as public notification and plan adoption.

1.1 PURPOSE OF 2020 URBAN WATER MANAGEMENT PLAN

The UWMP is a foundational business support document for an urban water supplier. For the City, this update to its 2015 UWMP emphasizes a cross-functional, systems approach that is intended to better guide and integrate any subsequent water resources studies, facilities master planning, and various regulatory reporting and assessment activities at the City, regional and state levels beyond a basic profiling of the City's water system.

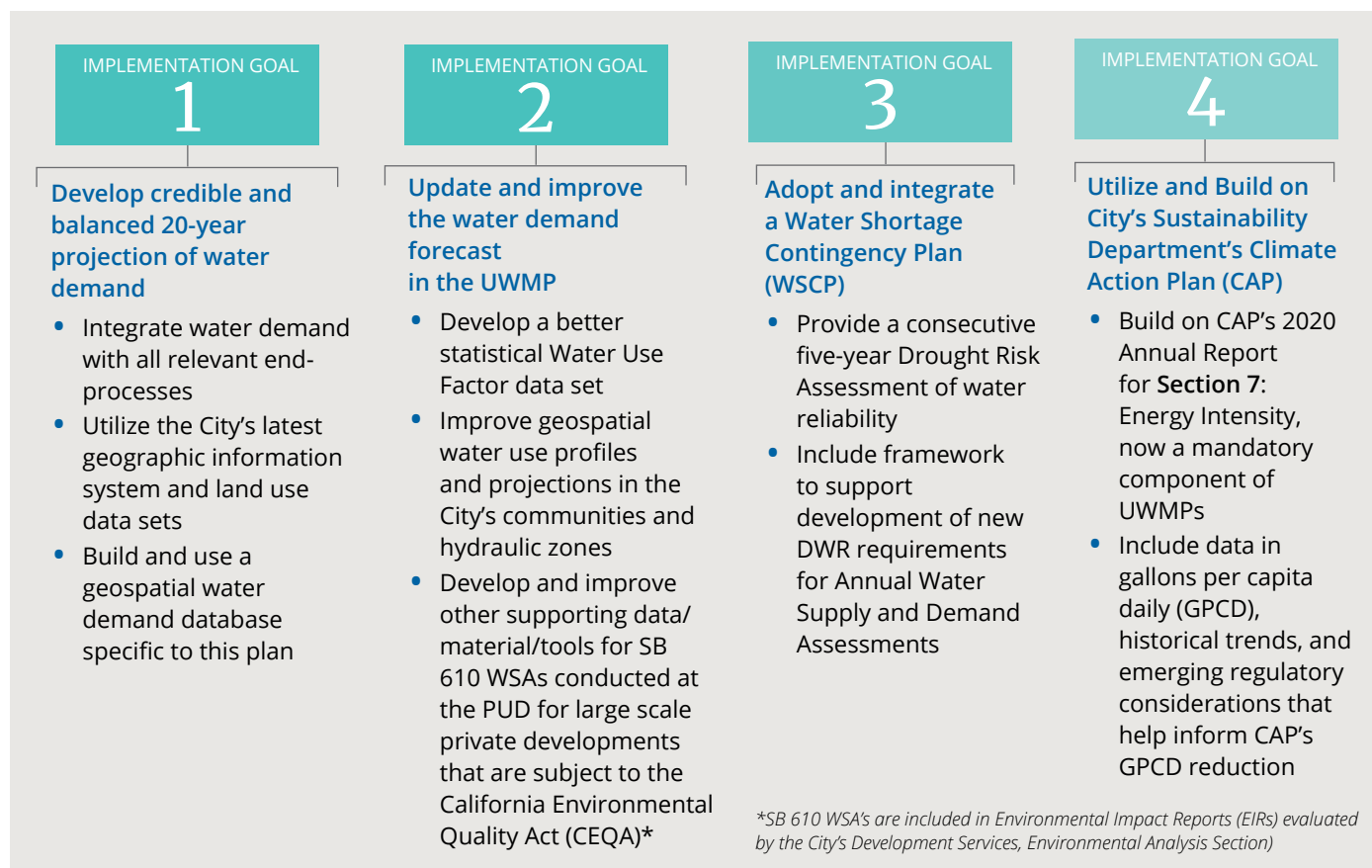
Key Highlights



Miramar Reservoir

- Per state law, the City updates its Urban Water Management Plan every five years. This update is for 2020–2025. Its planning horizon is out to 2045. This plan also supports the City's Climate Action Plan (CAP).
- Considering existing and future water supply sources, the City's balance of imported to local water will change from 95% imported in the 1990's to more than 50% local by 2045 due to significant investments.
- This plan includes a new water reliability analysis that shows the value of efforts to diversify the City's water supply sources under scenarios considering drought, climate change and seismic events.

The City developed the 2020 UWMP with the following implementation goals in mind:



The design of the UWMP integrates data and projects demand and supply to help inform other City and state planning efforts. This includes the City's various plans and assessments described in this section, as well as State Water Resources Control Board (SWRCB) reporting and Water Resources Planning. The public will have access to the UWMP and its appendices to inform water supply and demand assessments that are needed for development plans. **Figure 1-1** illustrates the interaction between the City's UWMP and other City and State planning efforts.

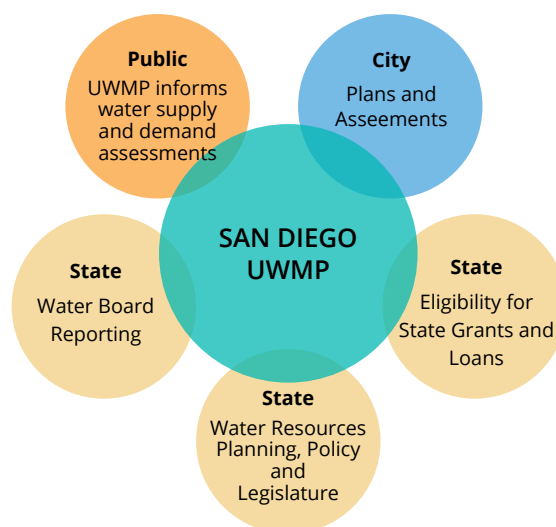


Figure 1-1: Interaction Between the City of San Diego UWMP and Other City and State Planning Efforts

1.2 OVERVIEW OF THE CITY WATER AND WASTEWATER SYSTEMS

The City is a major metropolis with a diverse community that consistently ranks as one of the world's most desirable cities to live, work and visit. As of the 2010 United States Census, the City ranked by population as the eighth largest city in the U.S. and second largest city in California. The City is in the southwestern corner of the state and nation. It is bound on the west by the Pacific Ocean, to the south by the international border with Mexico, and to the east and north by developed neighboring cities. The proximity to Mexico and its rich history has molded the City into a vibrant international community. The City's partnerships with Tijuana, Mexico on multiple economic projects and issues have benefited the entire region culturally and economically. The City's main industries of tourism, defense, cutting edge technology and international trade attract businesses and employees to the area, leading to opportunity for its residents and a desired lifestyle.

The City's climate is semiarid with cycles of multi-year droughts. Historical average rainfall amounts do not provide adequate local water supplies for the City; water demands currently require that most of its water be imported from outside of the region. At approximately 340 square miles, the City has varying topography ranging from coastal shores to inland mountain areas, each with its own distinct microclimate. This varied geography and semiarid climate require sophisticated and innovative water and wastewater systems.

For more than 100 years, the City has continually and proactively invested in its water supply system to maintain a reliable water supply for residents and businesses. The City's evaluation of demand and supplies in this UWMP reflect an integrated approach to water resource management, as shown in **Figure 1-2**, where the full cycle of water, stormwater and wastewater are presented. Sources of supply could come from surface water resources and/or imported and the environment (output) could include ocean and lake.

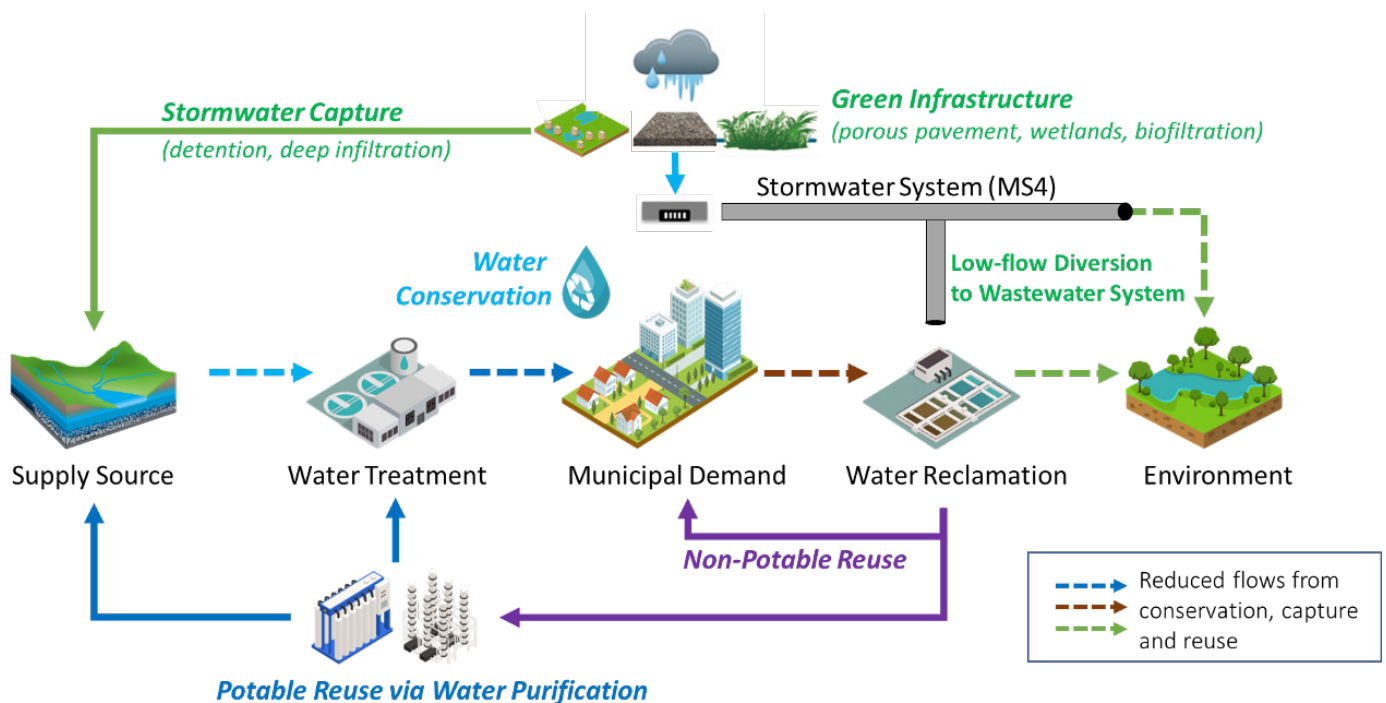


Figure 1-2: Integrated Urban Water Resources Management (Source: CDM Smith)

The City's water and wastewater systems are maintained and operated by the PUD. In addition to serving water customers for the City, the PUD also provides wholesale water deliveries to several communities outside of the City. Its water system:

- Extends more than 404 square miles
- Delivers a current average of 175,000 AFY or 156 mgd
- Includes an extensive raw water system with nine reservoirs that capture local runoff from rainfall and store purchased imported water, which is then sent to its three water treatment plants for treatment and distribution

The City's wastewater system collects, treats and disposes of nearly 180 mgd of sewage from a 450-mile service area; included in this are more than 2.2 million people, including the City's own customers and customers from other cities/agencies (see Table 2-6). The City also has a separate recycled water system (RWS) that currently extends approximately 99 miles. The City's two water reclamation plants currently provide recycled water to meet non-potable (not for drinking) water demands. In 2020, the City provided 8,195 AFY of non-potable recycled water within the City and 4,232 AFY to three wholesale customers. Potable reuse through the Pure Water project is currently under development.



Point Loma Wastewater Treatment Plant's Biogas Generation System

1.3 IMPORTANT REGULATORY CHANGES SINCE THE 2015 URBAN WATER MANAGEMENT PLAN

For 2020 UWMPs, the Water Code Division 6, Part 2.6, Chapter 3 (Urban Water Management Plans) has added six new reporting requirements to those previously required in 2015. These new requirements are described below.

- Develop a Water Shortage Contingency Plan (WSCP): 10632: Every urban water supplier shall prepare and adopt a WSCP as part of its UWMP that consists of each of the following elements (effective January 1, 2019):
 - » The analysis of water supply reliability conducted pursuant to Section 10635 (effective 1997).
 - » The procedures used in conducting an annual water supply and demand assessment that include the written decision-making process that an urban water supplier will use each year to determine its water supply reliability, as well as the key data inputs and assessment methodology used to evaluate the supplier's reliability for the current year and one dry year.
 - » Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages, and a greater than 50 percent shortage. Shortage levels apply to hydrological or other local water supply conditions, as well as to a catastrophic interruption of water supplies. An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with this requirement by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.
 - » Shortage response actions that align with the defined shortage levels and include supply augmentation actions, demand reduction actions, operational changes, mandatory water use prohibitions, and an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

- » Communication protocols to inform customers, the public, interested parties, and local, regional, and state governments, regarding current or predicted shortages and any shortage response actions determined by the annual water supply and demand assessment.
- » Customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions.
- » A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions as well as a statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1. The WSCP should also include a statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency.
- » A description of the financial consequences of, and responses for, drought conditions, including a description of potential revenue reductions and expense increases associated with activated shortage response actions, a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions, and a description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.
- » Monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and meeting state reporting requirements.
- » Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the WSCP to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.
- Incorporate regional and local seismic risk assessments or plans:
 - 10632.5: The WSCP shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each water system facility and mitigate those vulnerabilities, which should be updated when the urban water supplier updates its UWMP. A supplier may comply by submitting a copy of the most recent adopted local hazard mitigation plan or multi-hazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multi-hazard mitigation plan addresses seismic risk.
 - Develop a 5-consecutive year Drought Risk Assessment:
 - 10635: Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in its UWMP. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its UWMP update. The drought risk assessment shall:
 - » Describe the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.
 - » Determine the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.
 - » Compare the total water supply sources available to the water supplier with the total projected water use for the drought period.
 - » Consider the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

- Include an analysis of utility energy intensity:
10631.2: An UWMP shall include any of the following information that the urban water supplier can readily obtain (effective January 1, 2019):
 - » An estimate of the amount of energy used to extract or divert water supplies.
 - » An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
 - » An estimate of the amount of energy used to treat water supplies.
 - » An estimate of the amount of energy used to distribute water supplies through its distribution systems.
 - » An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
 - » An estimate of the amount of energy used to place water into or withdraw from storage.
 - » Any other energy-related information the urban water supplier deems appropriate.
- Consider climate in the water supply and demand :
10630: A supplier's level of water management planning can be commensurate with the numbers of customers served and the volume of water supplied, while accounting for impacts from climate change (effective January 1, 2019).
10631: A plan shall be adopted in accordance with this chapter (effective January 1, 2020) and shall describe the service area of the supplier, including current and projected population, climate, and other social, economic, and demographic factors affecting the supplier's water management planning. The description must include:
 - » The projected population estimates in five-year increments to 20 years or as far as data is available.
 - » The current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning.

1.4 RELATED WATER POLICIES AND PLANS

The City's UWMP was prepared with the understanding of several related water policies and plans that are summarized below.

1.4.1 City's Comprehensive Policy for a Sustainable Water Supply in San Diego

Policy CP-400-15 adopted by the City Council has several relevant goals related to the UWMP:

- Support the use of SB 610 Water Supply Assessments (SB 610 WSA) related to land-use decisions.
- Support and encourage low-water use plumbing, landscaping, and irrigation materials in public and private development.
- Support economically sound activities that reduce the City's reliance on imported sources of water and increase local supplies.

It states that the policy's implementation and any of its updates are to be informed by the latest UWMP every five-years based on state-required updates of these plans.

1.4.2 City's General Plan and City Community Plans

The City's General Plan is its constitution for development, creating the foundation upon which all land use decisions within its jurisdiction are based. It expresses community vision and values, and it embodies public policy for future land use, both public and private. The General Plan, which was adopted in 2008, contains the following elements (chapters): Land Use and Community Planning; Mobility; Economic Prosperity; Public Facilities, Services and Safety; Urban Design; Recreation; Historic Preservation; Conservation; Noise; and Housing. Within the document, the City of Villages strategy focuses growth into mixed-use activity centers that are pedestrian-friendly districts linked to an improved regional transit system. Additionally, the City is in the process of developing and adding an

Environmental Justice element to its General Plan.

To provide greater detail, the General Plan identifies more than 50 community plan areas. A community plan contains a land use map and classifications, and tailored goals and policies, and services a long-range development guide along with the Citywide General Plan. As part of on-going program, the City has been updating the community plans to be consistent with the General Plan goals and policies.

The Conservation Element in the General Plan contains goals and policies that addresses water resources management. It focusses on approaches to conserve water resources and protect drinking water sources. The Element also addresses the need to integrate water resource planning into the land use planning process and plan with regional and statewide water agencies.

Water resources and the need to integrate water resource planning into the land use process are addressed in the General Plan Conservation Element. The assessment of impacts under CEQA may be aided by an understanding of supplies and demands as presented in a UWMP or similar other supply and demand assessment, such as Senate Bill (SB) 610 WSAs, that allow the entity preparing the EIR to assess impacts to water supplies, as well as impacts to drainage, wastewater, reclamation/reuse and water quality.

1.4.3 City's Climate Action Plan and Resiliency Plan

The City's CAP provides a roadmap to significantly reduce greenhouse gases by 2035 and make San Diego a leader in clean technology, renewable energy and green jobs. The specific 2035 goals in the plan are: (1) to eliminate half of the City's greenhouse gas emissions, and (2) to use 100 percent renewable energy. The CAP also includes the promotion of energy and water-efficient buildings through a mix of regulatory mandates and incentives to improve building performance, as well as goals for the reduction of daily per capita water consumption. Specific measures related to the water-energy nexus,

water conservation and sustainability include:

- Crafting ordinances to require disclosure of a building's energy and water use to potential homebuyers, installing weather-based sprinkler controls (sensors that shut off system after rain), and prioritizing drought resistant landscaping
- Supporting water rate structures that encourage conservation and water use efficiency, resulting in large reductions in water use per capita (~20 percent) from 2010 to 2020
- Capturing methane from wastewater treatment with goal of 98 percent by 2035

Additionally, Climate Resilient SD will be the City's comprehensive climate adaptation and resiliency plan. It relates to Strategy 5 of the CAP for the City to develop a standalone climate adaptation plan to identify vulnerabilities, take early action, integrate adaptation into CAP efforts, capitalize on co-benefits and increase local resilience. It also relates to social equity goals in the CAP by prioritizing communities of concern to ensure that investments and resources are prioritized for those with the greatest needs and vulnerabilities. Its vulnerability assessment has been performed, including measuring the vulnerability of water and wastewater infrastructure for assets such as dams, pipes, pump stations, reservoirs and treatment plans. At the time of writing this document, planning efforts to complete the Climate Resilient SD were not yet complete.

1.4.4 City's Water Shortage Contingency Plan

Due to increasing strain caused by more frequent and extreme drought, the City must be prepared for potential constraints on its local and imported water supply. The City's WSCP provides the plan in the event of a declared water emergency or enactment of more stringent restrictions on water use. The WSCP details six potential levels of water shortage and the specific actions the City would take to reduce water use and increase additional supplies to address the water shortage. A plan for communicating water use mandates to the public is also presented within the document. The WSCP is included in **Appendix E**.

1.4.5 San Diego County Water Authority 2020 UWMP

The San Diego County Water Authority (SDCWA) is the regional wholesale provider of imported water that supplements local water supplies for 24 retail water purveyors in San Diego County, including the City. This makes SDCWA a vital partner in ensuring water supply reliability for the City's water customers. The California Water Code requires coordination in preparation of UWMPs with any wholesale water providers or other agencies that share common infrastructure for the delivery of water, wastewater and recycled water services. Thus, the SDCWA's 2020 UWMP is to be considered a supplemental reference to the City's 2020 UWMP. As a member of SDCWA, the City will assist SDCWA as-needed in working with the Metropolitan Water District of Southern California (MWD), DWR, the County of San Diego and other relevant local water agencies in the region.

1.5 PLAN COORDINATION

Preparation of this 2020 UWMP was coordinated with multiple local and regional agencies and the public, as shown in **Table 1-1**. As part of this coordination, the City provided its 2020 UWMP to the wholesale water provider, SDCWA. Availability of imported water, regional water demands and conservation were also coordinated with SDCWA. Wastewater and recycled water use data was coordinated with the Wastewater Branch of the City's PUD. As the City's wastewater system is used to treat wastewater for participating agencies outside the City via a joint powers agreement, coordination with these entities also occurred. To prepare the City's water demand forecast, coordination with the San Diego Association of Governments (SANDAG) was necessary to obtain the most recent demographic projections for the City. A 60-day notice of the public hearing for the 2020 UWMP was sent to the County of San Diego, City of Del Mar, City of Poway and all other cities in San Diego County on February 5, 2021. On March 1, 2021, the draft report was available for public comment, and a 30-day notice of the public hearing was sent to the agencies listed above. A copy of these notices of the public hearing and a list of local agency recipients are provided in **Appendix A**. Additionally, the City participated in webinars, meetings and workshops hosted by DWR that discussed the 2020 UWMP Guidelines and Act requirements.

Table 1-1 City of San Diego UWMP Coordination with Outside Agencies

Agency	Coordination
SDCWA	Imported water availability, regional water demands and conservation
SANDAG	Demographic data
Wholesale Cities	Public meeting announcement
Cities/Agencies served by San Diego's Wastewater System	Wastewater flows, treatment and recycled water use
DWR	UWMP requirements

1.6 PUBLIC PARTICIPATION AND PLAN ADOPTION

Prior to adoption of this 2020 UWMP, the public was invited to provide input on the draft version of this document. The City issued a public notice on March 1, 2021, describing the 2020 UWMP and inviting the public to comment on the 2020 UWMP between March 1, 2021 and April 5, 2021. The public notice also listed locations where the public could read the Draft 2020 UWMP, and it provided the month of the public hearing to adopt the 2020 UWMP. A copy of this public notice is included in **Appendix A**. Copies of the 2020 UWMP were available for inspection on the City's website. A legal notice of public hearing was published in The Daily Transcript on May 6, 2021 and May 11, 2021.

Prior to the adoption of the 2020 UWMP, multiple public meetings were also held to present it to the City's :

- Independent Rates Oversight Committee March 15, 2021
- Council Environment Committee April 15, 2021

These public meetings involved a discussion of the 2020 UWMP components including a summary of the City's status relative to meeting its per capita water demand targets. The 2020 UWMP was presented and adopted at a public hearing of the City Council during one of its regularly scheduled public hearings on May 18, 2021; the City Council also adopted the WSCP at that time. A copy of the Resolution of Adoption is provided in **Appendix A**. The 2020 UWMP was submitted to DWR (electronically), the California State Library and County of San Diego County within 30 days of adoption and is available to the public on the City's website.

Outside of the 2020 UWMP preparation process, the City also continually provides multiple opportunities for the public to learn about and comment on water supply issues. The PUD proactively reaches out to the public through its annual Drinking Water Quality Report, also known as a Consumer Confidence Report, that provides information on how customer's drinking water compares to state standards. It also engages customers by conducting public presentations and staffing informational tables at community events. It also continually updates the City's website related to water use and regularly works with media outlets to secure accurate and complete coverage of its water programs.



*Pure Water San Diego
Contractor EXPO*

1.7 PLAN ORGANIZATION

San Diego's 2020 UWMP is divided into eight sections that are generally organized as presented in DWR's UWMP Guidelines. Each section is briefly described below:



In addition, there are 6 appendices in this 2020 UWMP that: (1) document the plan's public involvement/review; (2) provide a UWMP checklist for DWR use; (3) provide DWR compliance tables; (4) document the City's WSCP and emergency policies; and (5) provide other useful and pertinent information.

SECTION

2

Utility Service Area Description

After a brief overview of the history, this section describes the utility's: geography and demographics; climate and resiliency; water supply sources and utility systems; and the wastewater treatment and water reclamation systems.

In 1901, the City purchased its initial water system from the San Diego Water Company and the Southern California Mountain Water Company. Between 1913 and 1943, the City developed eight additional reservoirs to capture local runoff from rainfall to meet growing water demands. Prior to 1944, all the water supply provided by the City was from impounded local runoff from rainfall and some limited groundwater sources. As the City grew, it became clear that new sources of water were needed. In 1944, the SDCWA was formed as a countywide wholesale water agency to transport imported water from the Colorado River to the City and other communities in the County. The SDCWA joined MWD in that same year. As Southern California's regional wholesale water provider, MWD owns and operates the Colorado River Aqueduct (CRA), which was constructed in the 1930s. In 1947, Colorado River water from MWD's CRA was delivered to the City via the San Diego County aqueducts.

As the population and economy of California grew, MWD and some 30 other public water agencies signed a contract to develop the State Water Project (SWP). Initiated in the early 1960s, this ambitious civil works project was the largest of its kind in the nation. Its massive undertaking involved constructing a series of reservoirs, large conveyance pipelines and canals, and massive pump stations designed to bring water from the Sacramento-San Joaquin Delta (Delta) to the central and southern regions of California. MWD is the largest member of the State Water Contractors and receives approximately 50 percent of water deliveries from the SWP, which is managed by DWR. In 1978, water from the SWP was delivered to the City, blending with CRA water.

The PUD serves the City's residents and businesses by providing water, wastewater and recycled water services. The water and wastewater systems it manages are among the largest and most complex in the nation.

Recent Demographic and Water Use Trends for City of San Diego



Water-wise San Diego home landscape

- While the City's population has grown an average of about 1 percent annually since 2010, total water demand has decreased during this same period. This decrease in water demand is due to: (1) greater levels of water use efficiency from plumbing codes and landscape ordinances; (2) utility rebates for customers to replace non-conserving water fixtures with efficient devices; and (3) customer responses from state- and City-imposed water use restrictions during recent droughts. These combined actions have reduced water demand from its 2007 peak of more than 250,000 AFY to its current average demand of approximately 175,000 AFY.
- While household population in the City has grown by 8 percent since 2010, total housing units have grown by only 5 percent over the same period. Of the 25,865 housing units that were added in these last 10 years, more than 20,000 (77 percent) were higher density, multi-family style housing.
- Many areas of the City are built out and have had little-to-no growth over the past decade. These trends are projected to hold steady over the next decade. As such, development to accommodate City population growth is projected to be multi-family housing and higher-density, single-family housing.

The PUD retail water service area (not including the service areas of its wholesale water customers) is slightly smaller than the City's municipal boundary. For this 2020 UWMP, the demographics and water use presented are defined as the PUD retail water service area (unless otherwise noted).

2.1 GEOGRAPHY AND DEMOGRAPHICS

The City is located within the southwest portion of San Diego County and extends over 340 square miles (see **Figure 2-1**). It is bound on the west by the Pacific Ocean, to the south by the international border with Mexico, and to the east and north by developed neighboring cities within the County. Topography in the City varies dramatically over short geographical distances, creating diverse microclimates. Its general topography consists of coastal areas and mesas, cut

by canyons, with general elevations ranging from sea level to over 1,000 feet above sea level. Located in its northeastern area, the highest point within the City is Cowles Mountain at nearly 1,600 feet elevation.

The City's water system is split into three major service areas: (1) Miramar, which includes the entire northern area of the City; (2) Alvarado, which includes the Mission Bay area, Mission Valley area, and the areas extending south to the boundary of National City; and (3) Otay, which serves the southernmost part of the City's service area, adjacent to the U.S.-Mexico border.

Population and housing data for the City's PUD service area is provided by SANDAG, based on its Series 14: 2050 Regional Growth Forecast. The SANDAG data was provided to the PUD by census tracts that were then aggregated to the PUD service area using GIS data layers. SANDAG's demographic forecast is based on: U.S. Census data; annual population and housing estimates produced by California Department of Finance; and, local inputs gathered from the region's 18 incorporated cities and unincorporated county areas. SANDAG works closely with each jurisdiction including the City to incorporate existing and planned land uses, development constraints, zoning, remaining housing capacity, current adopted general and community plans, and guidance on likely development patterns by 2045. **Table 2-1** summarizes these demographic projections for the City's water service area.

To note, for the purposes of forecasting residential water demands for the PUD's service area, household population and number of households (occupied housing) are utilized rather than total population (a category that includes group quarter population) and total housing (a category that includes vacancies). Using household population and number of households is considered standard practice for forecasting water demands.



*Figure 2-1:
Location of City of San Diego*

Table 2-1 Demographic Projections for San Diego PUD Water Service Area

Demographic	2020	2025	2030	2035	2040	2045
Total Population	1,390,589	1,481,471	1,531,174	1,572,213	1,594,343	1,639,872
Household Population ¹	1,328,579	1,414,928	1,464,214	1,504,843	1,526,964	1,572,495
Total Housing Units	539,651	575,379	593,175	665,867	688,068	711,584
Total Households ²	504,061	535,777	576,467	612,962	649,465	670,395
Single-family Households ³	243,594	247,082	252,220	256,849	267,382	274,570
Multi-family Households ⁴	260,467	288,695	324,247	356,113	382,083	395,825
Persons Per Household	2.64	2.64	2.54	2.46	2.35	2.35

¹ Does not include group quarter or military population.

² Households represent occupied housing units and are used by the City to forecast residential water demands.

³ City defined as initially being equal to single-family residential accounts in 2020, with single-family household growth from SANDAG applied to project future single-family households.

⁴ Represents difference in SANDAG projections of total households and City's defined single-family households.

Approximately 1.39 million people reside in the City's water service area, which is slightly less than the population within the City's municipal boundary of 1.45 million; approximately 50,000 residents of the City are served by other water agencies. The City's water service area household population is expected to increase from 1.33 million in 2020 to 1.57 million in 2045, or by 18 percent in the next 25 years.

Total households are expected to increase from 0.50 million in 2020 to 0.67 million in 2045, or by 33 percent in the next 25 years. As SANDAG is projecting that households will increase at faster rates than population, the number of persons per household is expected to decrease from the current 2.64 to 2.35 in 2045.

2.2 CLIMATE AND RESILIENCY

According to the Koppen climate classification system, the City has a Mediterranean to semiarid climate, which is characterized by warm, dry summers and mild winters with limited rainfall. As recorded by the San Diego Airport weather station from 1914 to 2019, **Table 2-2** provides a summary of average monthly maximum temperature, precipitation and evapotranspiration (ETo) for the coastal region of the City.

Table 2-2 Average Climate Data for San Diego

Climate Variable	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average / Total
Average Max Temperature (oF) ¹	65	65	66	67	69	71	75	76	76	73	70	66	70 (average)
Average Precipitation (inches) ¹	2.00	1.98	1.63	0.78	0.21	0.05	0.02	0.06	0.17	0.51	0.97	1.77	10.150 (total)
Average ETo (inches) ²	2.14	2.65	3.78	4.36	4.80	4.95	5.50	5.34	4.47	3.40	2.45	1.94	45.78 (total)

¹ 1939-2016, San Diego Weather Station Office Airport Station, <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7740>.

² 2002-2019 average, San Diego (Station ID. 184), CIMIS database, <http://www.cimis.water.ca.gov>.

The City's average monthly maximum temperature is 70 degrees oF, and its total precipitation averages about 10 inches per year. May to October is typically dry, while the bulk (90 percent) of the rainfall historically occurs between November to April.

Figure 2-2 plots the average monthly maximum temperature, precipitation and reference ETo.

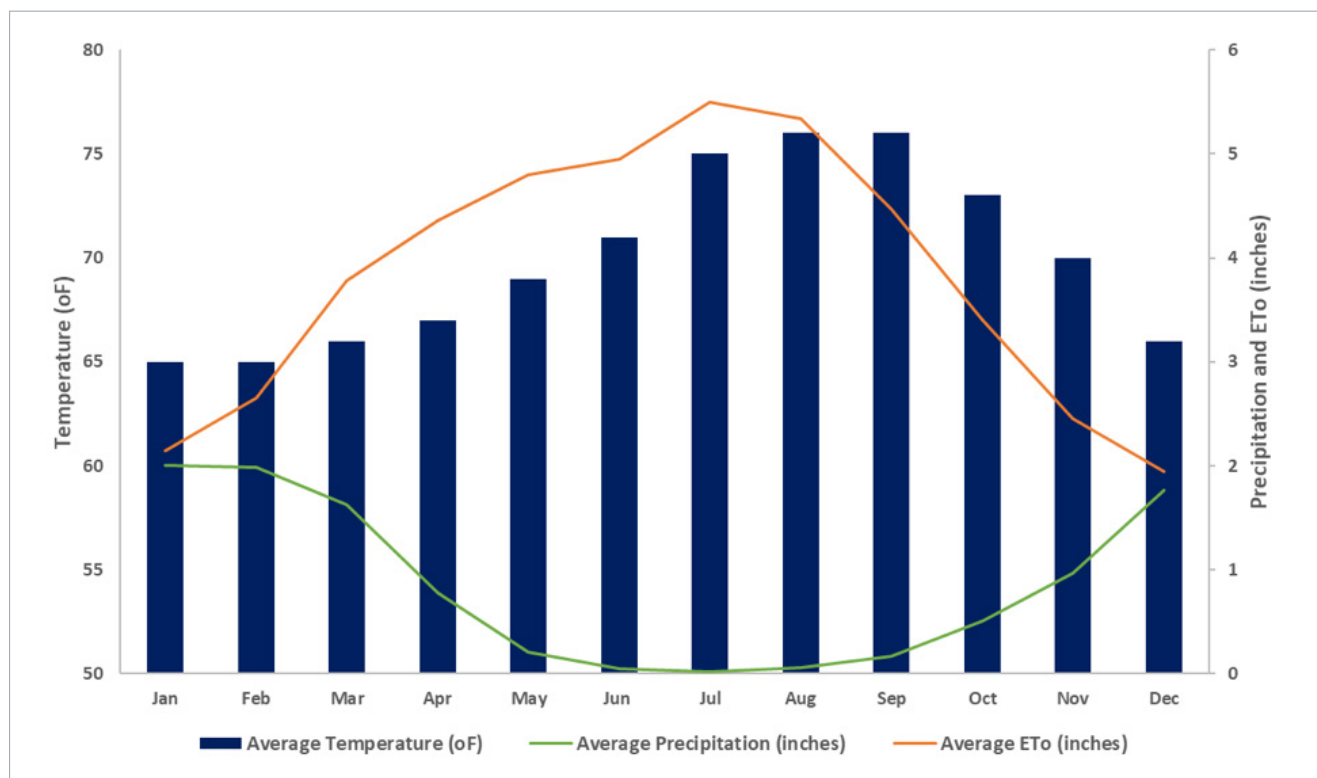


Figure 2-2:
Average Climate for City of San Diego Coastal Area (1939 - 2019)

It is important to note that the ETo indicates how much supplemental irrigation the areas vegetation (turf, trees and shrubs) requires; the higher the ETo the more irrigation water is needed to sustain the vegetation. Due to the City's geography and terrain, precipitation and temperature can vary across the service area. Coastal areas tend to have less precipitation and lower temperatures, while higher inland elevations can receive more than 30 inches of precipitation per year and have higher temperatures.

Considering these climatic conditions and climate change, the City's CAP includes: mitigation strategies for reducing carbon emissions; adaptation measures for climate resiliency; a description of the water-energy nexus; goals for reducing per capita water use; and, strategies for sustainability of water supply and services. Example initiatives include calling for drought-resistant landscaping that led to developing and implementing a drought-resistant landscape ordinance, developing City-specific GPCD and GHG Goals, and coordinating to monitor the water-energy nexus monitoring.

The City also partnered with the Bureau of Reclamation in the San Diego Basin Study to assess the region's water supply and demand and determine the potential effects from climate change impacts within the San Diego Integrated Regional Water Management (IRWM) planning region. The region's existing infrastructure was analyzed, and adaptation strategies were developed that can assist with addressing the uncertainties associated with climate change. The study also focused on optimizing the region's sub-basin infrastructure and reservoir systems in order to further the development of potential new water supply sources through detailed scientific, engineering and economic analyses.

The approach and results of estimating the impact of climate change in the Basin Study are discussed further in **Section 6.8**. In its tradeoff analysis, the top project was determined to be a combination of:

- Investment in urban and agricultural water use efficiency by encouraging long-term behavioral change and implementing water use efficiency

programs, such as rain barrel rebates, turf replacement credits, rebates for more efficient irrigation or plumbing fixtures, and gray water system rebates

- Watershed and ecosystem management
- Increased stormwater capture
- Additional recycled water projects

2.3 WATER SUPPLY SOURCES AND UTILITY SYSTEMS

The City's water system is one of the most complex in California. It has: three water treatment plants; nine reservoirs; and two water reclamation plants serving recycled water customers.

Water Distribution System Stats

- 400+ sq. mi. combined retail and wholesale service area
- 3 water treatment plants
- Approximately 131 hydraulic pressure zones
- 300+ pressure reducing stations
- Approximately 29 reservoirs/storage tanks
- Approximately 49 pump stations
- 3,000+ miles of pipeline
- 300,000+ metered service connections
- 600+ domestic fire services (service lines connected to fire sprinkler systems)
- 25,000+ fire hydrants

To meet the majority of the water demands in the City, local runoff from rainfall is captured in the City's reservoirs, wastewater is recycled for non-potable water demands at the City's water reclamation plants, and imported water is purchased from the SDCWA. SDCWA's water supplies include desalinated seawater, water transfers from the Imperial Irrigation District (IID), and imported (SWP and CRA) water purchased and delivered through MWD's system to San Diego County via the SDCWA aqueducts. Most of the City's imported water purchased from SDCWA is stored in several of the City's



Figure 2-3:
Major Water Conveyance Facilities in California

reservoirs and treated at the City's water treatment facilities. However, a small portion of treated imported water is also purchased from the SDCWA. These supplies are described in what follows.

2.3.1 MWD System

As Southern California's regional water wholesaler, MWD operates the largest water system in the nation. It imports water from two main supply sources: (1) the CRA, which it owns and operates, bringing water from the Colorado River into Southern California; and (2) the SWP that it contracts with through DWR to bring water from the Delta, which is formed at the western edge of the Central Valley by the confluence of the Sacramento and San Joaquin rivers. The SWP and CRA are part of an extensive water supply system that includes federal, state and local water conveyance, as shown on **Figure 2-3**.

MWD provides both untreated and treated imported water to its 26 public member agencies (14 cities, 11 municipal water districts and SDCWA); these agencies, water districts and SDCWA in turn deliver water to more than 19 million people in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties. MWD owns and operates nine surface reservoirs, 16 hydroelectric plants, 819 miles of large pipelines and five large regional water treatment plants with a combined water treatment capacity of 2.6 billion gallons per day. Four of its five treatment plants are among the 10 largest plants in the world. MWD also participates in several groundwater banking and water transfer programs outside its regional service area to supplement its imported water from the CRA and SWP during dry weather years and droughts. What follows details the CRA and SWP's imported waters.

Colorado River Aqueduct

The Colorado River is the largest river in the western U.S.; it also flows into Mexico. The Colorado River Basin covers roughly 246,000 square miles, including parts of the seven U.S. "basin states" of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming. The river:

- Provides water to approximately 40 million people
- Irrigates nearly four million acres of cropland in the U.S. and Mexico
- Supplies hydropower plants that generate more than 10 billion kilowatt-hours annually

Water from the Colorado River also provides recreational opportunities and an array of environmental benefits that support a wide diversity of fish and wildlife and their habitats, while also preserve flow and water-dependent ecological systems. The U.S. Secretary of the Interior is vested with the responsibility to manage the mainstream waters of the Colorado River pursuant to applicable federal law. The Colorado River Board of California is the agency given authority to protect the interests and rights of California and its residents in matters pertaining to the Colorado River.

In 2003, a Quantification Settlement Agreement (QSA) was completed to ensure that California stays within its 4.4 million acre-foot (MAF) annual apportionment of Colorado River water. The QSA provides the means to implement water transfers and supply programs between water agencies that use Colorado River water in California. Of the 4.4 MAF annual apportionment of Colorado River water, the MWD has a 550,000 AFY apportionment. In addition, MWD has developed several water transfers, irrigation conservation measures and storage programs with irrigation water districts that have more senior water rights to Colorado River water within California. Through these and other programs, MWD's goal is to keep its CRA nearly full at its capacity of 1.2 MAF.

The existing conditions of the Colorado River is that it has been in a decade-long, severe drought. Despite some recent improvements to snowpack in the Upper Colorado River Basin, the Lake Mead water surface elevation has only recently recovered from the long drought between 2014 and 2019. The Lower Basin States, including California, recognized that Lake Mead levels could quickly fall to 1,000 feet and trigger a formal shortage declaration.

In April 2019, the U.S. Congress passed a finalized Drought Contingency Plan (DCP) agreed upon and

Table 2-3 QSA Shortage Allocation Volumes

Mead Trigger Elevation (feet)	2007 Interim Guidelines Colorado River Shortage Contributions (1,000 AF)			Drought Contingency Plan Colorado River Shortage Contributions (1,000 AF)		
	Arizona	Nevada	California	Arizona	Nevada	California
1,090	0	0	0	192	8	0
1,075	320	13	0	192	8	0
1,050	400	17	0	192	8	0
1,045	400	17	0	240	10	200
1,040	400	17	0	240	10	250
1,035	400	17	0	240	10	300
1,030	400	17	0	240	10	350
1,025	480	20	0	240	10	350

produced by the U.S.'s three Lower Basin States (Arizona, California and Nevada) and Mexico. Its allocation volumes are shown in **Table 2-3**.

As defined in the DCP, California takes shortages beginning at a Lake Mead trigger elevation of 1040 feet; those shortages increase as the lake's water elevation decrease. Within California, Palo Verde Irrigation District and Coachella Valley Water District take 8 percent and 7 percent of the California DCP shortage, respectively. However, the IID, which was to take a shortage, has withdrawn from participation in the DCP until the federal government addresses Salton Sea mitigation.

State Water Project

The SWP is a water storage and delivery system that provides water to 29 urban and agricultural water suppliers in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast and Southern California. In total, it delivers water to 27 million people, or two-thirds of the population of California, and irrigates an additional 750,000 acres of farmland. The project is owned by the state and operated and maintained by DWR. The SWP system consists of 701 miles of aqueduct, 34 reservoirs totaling 5.8 MAF of storage, five hydroelectric plants, 17 pumping plants, and three pump stations.

SWP water originates in Northern California at Lake Oroville on the Feather River, flows downstream to

its confluence with the Sacramento River, and then travels into the Delta region. Water is pumped from the Delta to State Water Contractors. SWP deliveries consist solely of untreated water. In addition to delivering water to its contractors, the SWP is operated to improve water quality in the Delta, control floodwaters, and provide recreation, power generation, and environmental enhancement. The SWP was completed in 1972 to deliver water to MWD's service area in Southern California. As the largest of 29 contractors for water from the SWP, MWD holds a contract for 1.912 MAF per year, or 46 percent of the total SWP contract. DWR determines annual allocations of SWP contract amounts based on hydrologic and regulatory conditions. Since 1995, annual SWP allocations have ranged from 5 to 90 percent based on hydrological conditions. The SWP has averaged 2.8 MAF in annual deliveries over the last decade; its highest delivery was in 2006 at 3.7 MAF.

2.3.2 SDCWA System

SDCWA is the countywide water wholesaler comprised of 24 public member agencies and governed by a 36-member Board of Directors, as shown on **Figure 2-4**. The SDCWA owns and operates five large-diameter pipelines to deliver imported water to its member agencies. These pipelines are divided into two alignments known as the First Aqueduct and the Second Aqueduct. Associated



Figure 2-4:
SDCWA Member Agencies

pipelines of these aqueducts are:

- First Aqueduct: Associated pipelines are Pipelines 1 and 2, which extend from MWD's CRA near San Jacinto in Riverside County to the San Vicente Reservoir.
- Second Aqueduct: Associated pipelines are Pipelines 3, 4 and 5, as follows:
 - » Pipeline 3 extends from the CRA near Hemet in Riverside County to Lower Otay Reservoir
 - » Pipeline 4 terminates at the Alvarado Water Treatment Plant (WTP) near Lake Murray
 - » Pipeline 5, which was the most recent to be constructed in 2010, connects the San Vicente Reservoir to the Second Aqueduct as part of the SDCWA's program for emergency storage

Figure 2-5 shows the City's water system connections to the SDCWA.

To be more resilient and reliable in case of unplanned disruptions in imported water facilities, the SDCWA

embarked on a multi-year, \$1.5 billion Emergency & Carryover Storage Project (E&CSP) beginning in 2000. The goal of E&CSP is to provide up to six months of emergency water supplies in the event of a system failure of imported water from MWD. The E&CSP represents a system of reservoir enhancements, interconnected pipelines and pumping stations that adds 90,100 AF of water storage capacity for emergency use and more than 105,000 AF of carryover storage capacity as a hedge against dry years.

As part of the E&CSP, the SDCWA raised the San Vicente Dam to increase the storage capacity of San Vicente Reservoir. Under the same project, a pipeline connection was established between the City's Hodges Reservoir and the SDCWA's Olivenhain Reservoir. The connection allows water to be transferred to the City in the event of an interruption in imported water deliveries. It also allows water to be delivered to all City treatment plants.

In addition to water purchased from MWD, the SDCWA secured a QSA portion of the Colorado River

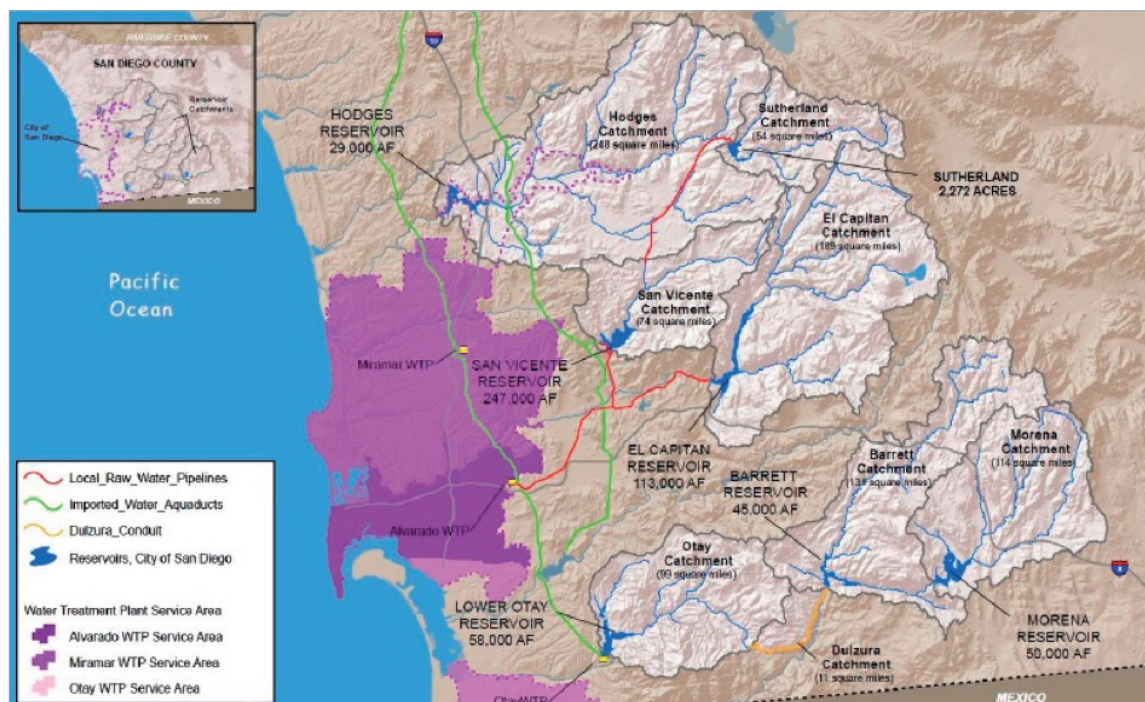


Figure 2-5:
Imported Water Facilities Connected to the City of San Diego's Infrastructure



Figure 2-6:
Reservoir Locations and Rainfall Catchment Areas. Purple dotted line indicates service area boundary

Water supplies, created a water transfer program with IID and developed a regional desalination facility in Carlsbad. These supplies are described in more detail in **Section 4 – System Water Supplies**.

2.3.3 City's Water System and Facilities

The City's water system is made up of nine reservoirs that capture runoff from local watershed rainfall, three water treatment plants, and a small supply of local groundwater. To offset potable (drinking) water demands, the City owns and operates two water reclamation plants and a recycled water distribution system that delivers recycled water for non-potable water uses.

Surface Water Reservoirs

The City's reservoirs – Barrett, El Capitan, Hodges, Miramar, Murray, Lower Otay, Upper Otay, San Vicente and Sutherland – capture the majority of runoff from rainfall in nine watersheds, covering more than 900 square miles. **Figure 2-6** presents the watershed capture areas, reservoir locations, and the distribution of average rainfall in the area. The dotted purple lines show the City's water supply service area.

Rainfall along coastal areas averages 10 inches per year, but rainfall amounts in areas east of the City, where the City's large reservoirs are located, can range from 15 to 30 inches per year. These nine local surface water reservoirs have a combined capacity of 549,007 AF. The native water captured in these reservoirs provides approximately 11 percent of the City's total supply (based on average data from 2016 to 2020).

These reservoirs not only capture local supply, but

These reservoirs not only capture local supply, but many of are also connected to the regional imported water system, providing the City with reliability and redundancy during seismic and other system outages or emergencies. Management of the reservoirs is guided by the City Council Policy 400-04 (see **Appendix F**) that outlines the City's Emergency Storage Policy. **Table 2-4** provides the storage capacity for the City's reservoirs and current storage levels (November 2020).

Table 2-4 City Reservoirs

Reservoir	Capacity (AF)	Storage (AF)
Barrett	34,806	20,500
El Capitan	112,807	41,934
Hodges	13,401	12,095
Lower Otay	47,067	40,333
Miramar	6,682	5,678
Morena	50,694	5,207
Murray	4,684	4,044
San Vicente	249,358	165,936
Sutherland	29,508	10,626
Total Capacity	549,007	306,353

Source: <https://www.sdcwa.org/reservoirs>

Barrett Reservoir

Barrett Reservoir was created in 1922 with the completion of Barrett Dam. This reservoir is in a remote area approximately 35 miles east of San Diego and is at the confluence of Cottonwood and Pine Valley creeks.

El Capitan Reservoir

El Capitan Reservoir was created with the construction of El Capitan Dam in 1935. In the same year, the reservoir was connected to the City's water system via the El Capitan Pipeline. The reservoir is located approximately 30 miles northeast of downtown San Diego.

Hodges Reservoir

Hodges Reservoir was formed in 1918 with the completion of its dam on San Dieguito Creek. The reservoir was purchased by the City in 1925. In 2012, as part of the Emergency Storage Project, Hodges Reservoir was connected to Olivenhain Reservoir. The Lake Hodges Dam is currently operating under a level restriction of elevation 295 feet (20 feet below spill elevation), as an interim risk reduction measure due to dam safety concerns.

Lower Otay Reservoir

Lower Otay Reservoir was created in 1897 with the completion of the Lower Otay Dam. In 1906, the reservoir was connected to the City's water system through the Bonita Pipeline.

Miramar Reservoir

Miramar Reservoir and its dam were completed in 1960 as part of the second San Diego Aqueduct project. The reservoir is in the Scripps Ranch community.

Morena Reservoir

The construction of Morena Dam began in 1897 on Cottonwood Creek and was completed in 1912. Located at 3,000 feet above sea level, Morena is the highest and most remote of the City's reservoirs.

Murray Reservoir

Murray Reservoir was previously owned by Helix Irrigation District; however, in 1960, the City purchased the reservoir after 10 years of manning its operations.

San Vicente Reservoir

San Vicente Reservoir is located on San Vicente Creek, approximately 25 miles northeast of San Diego. Construction to raise the dam's height by an additional 117 feet, which more than doubled the reservoir's capacity, was completed in 2014.

Sutherland Reservoir

The construction of Sutherland Dam began in 1927 and was completed in 1954. Sutherland Reservoir is located approximately 45 miles northeast of San Diego.

Water Treatment Plants and Distribution System

The City's three water treatment plants – Alvarado, Miramar and Otay – provide safe and reliable drinking water and have a combined total rated capacity of 450 mgd. In addition, the City's two water reclamation plants provide non-potable recycled water to City customers and wholesale agencies.

Figure 2-7 presents the location of the City's water treatment and water reclamation plants.

The three WTPs are located in such a way that there is flexibility in providing supplies to the City's

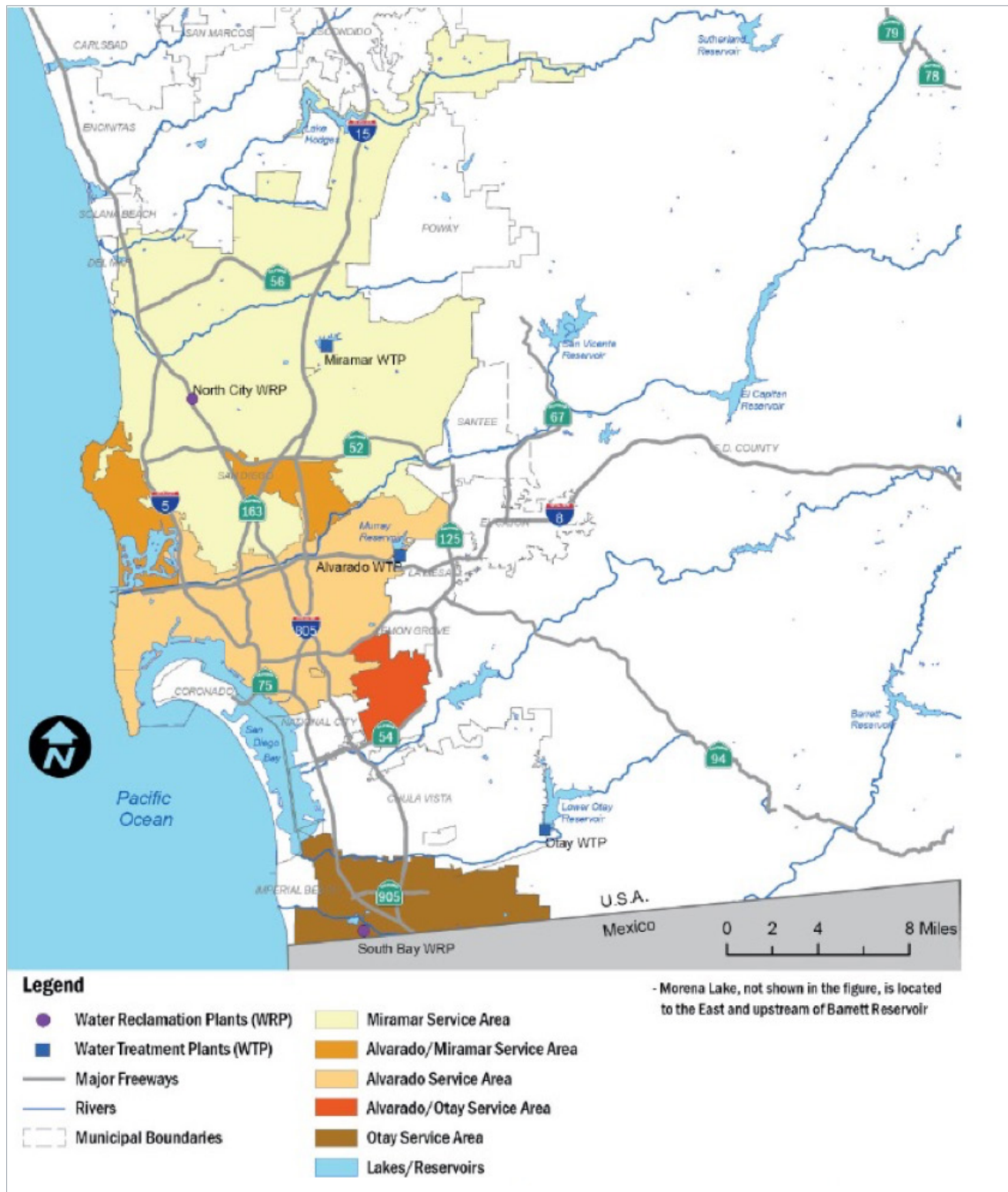


Figure 2-7:
City of San Diego's Water Treatment and Water Reclamation Plants

geographic areas; some areas of the City can be supplied by more than one of the treatment plants. To distribute potable water produced at these water treatment plants, the PUD maintains and operates numerous water pump stations within over 130 pressure zones (within the City's retail service area), and numerous treated water storage facilities with more than 200 million gallons of potable water capacity.

Table 2-5 Water Treatment Plant Capacities

Water Treatment Plant	Original Construction	Current Capacity
Miramar Water Treatment Plant	1962	215 mgd
Alvarado Water Treatment Plant	1951	200 mgd
Otay Water Treatment Plant	1914	34.4 mgd

Table 2-5 describes the date of construction, current capacity, projected capacity. Key points about these water treatments plants are:

- The Miramar WTP increased maximum capacity from 144 mgd to 215 mgd. The Miramar WTP generally serves the geographical area north of the San Diego River.
- The Alvarado WTP was improved and upgraded in 2011. The initial capacity rating of the plant was 120 mgd in 1951; hydraulic improvements and upgrades increased the capacity to 200 mgd. The Alvarado WTP serves the geographical area from National City to the San Diego River.
- The Otay WTP can be expanded from its current capacity of 34 mgd to 40 mgd, if approved by the SWRCB Division of Drinking Water. The Otay WTP generally serves the geographical area bordering Mexico (south San Diego) and parts of the southeastern portion of central San Diego.

2.4 WASTEWATER TREATMENT AND WATER RECLAMATION SYSTEM

Collectively, the wastewater collection and treatment system are known as the Metro System. The City collects and treats approximately 180 mgd of wastewater that is generated within a 450-square mile area made up of the City's boundaries, as well as the jurisdictions of other agencies that form the Metro Wastewater Joint Powers Authority (JPA). The agencies and their roles are shown in **Table 2-6**.

Wastewater and Recycled Water System Stats

- Approximately 450 sq. mi. of wastewater service area (City and JPA member jurisdictions)
- 3 wastewater treatment plants
- 3,000+ miles of sewer mains
- 54 stormwater interceptor stations
- Approximately 61,800 sewer manholes
- Approximately 80 sewer pump stations
- 2 ocean outfalls
- 1 biosolids processing center
- Approximately 100 sq. mi. of recycled water service area
- 2 water reclamation plants
- Approximately 787 recycled water customer meters
- Approximately 100 miles of recycled water pipelines
- 3 recycled water storage tanks
- 3 recycled water pump stations

Table 2-6 Metro Wastewater JPA Agencies

Agencies	Role
City of San Diego	Collects and treats wastewater, produces, and distributes recycled water
City of Chula Vista	Wastewater generator
City of Coronado	Wastewater generator
City of Del Mar	Wastewater generator
City of El Cajon	Wastewater generator
City of Imperial Beach	Wastewater generator
City of La Mesa	Wastewater generator
Lemon Grove Sanitation District	Wastewater generator
National City	Wastewater generator
Otay Water District	Wastewater generator and wholesale recycled water customer
Padre Dam Municipal Water District	Wastewater generator
City of Poway	Wastewater generator and wholesale recycled water customer
San Diego County	Wastewater generator (representing the Winter Gardens and East Otay Mesa Sewer Maintenance Districts, and the Alpine, Lakeside and Spring Valley Sanitation Districts)

The wastewater collection system covers 100 percent of the water service area. Total measured wastewater collected from the wastewater service area in 2020 was 189,531 AF, as detailed in **Table 2-7**, which is followed by **Figure 2-8**, which shows the location of the treatment plants in relation to the wastewater service area.

Table 2-7 Wastewater Collected in 2020 by Treatment Plant

Treatment	Operator of Treatment Plan	Is Plant Located in Service Area?	Is Volume Estimated or Measured?	2020 Volume of Wastewater Collected from Wastewater Service Area (AFY) ¹
PLWTP	City's PUD	Yes	Measured	164,000
NCWRP	City's PUD	Yes	Measured	18,208
SBWRP	City's PUD	Yes	Measured	7,323
Total 2020 Volume				189,531

¹ Includes wastewater generated outside of City water service area.

SECTION 2: Utility Service Area Description



Figure 2-8:
Wastewater Service Area and Wastewater Treatment Facilities

Wastewater is treated at three treatment plants, all within City limits: North City Water Reclamation Plant (NCWRP), South Bay Water Reclamation Plant (SBWRP) and Point Loma Wastewater Treatment Plant (PLWTP). Recycled water is produced at both NCWRP and SBWRP. Two additional water recycling facilities are located outside the Metro System: (1) the Ralph W. Chapman Water Recycling Facility in Otay; and (2) the Padre Dam Water Recycling Facility in the Padre Dam Municipal Water District. These plants reduce wastewater flows that would have historically been conveyed to the Metro Wastewater System for treatment at PLWTP. Both facilities send treated solids into the Metro System for further treatment at PLWTP.

After wastewater is treated, it is then distributed within PUD's own service area as recycled water and sold as such to three local water agencies: Otay Water District, the City of Poway and Olivenhain Municipal Water District.

2.4.1 Point Loma Wastewater Treatment Plant

The PLWTP opened in 1963 and is located on the bluffs at Point Loma. It has a treatment capacity of 240 mgd and a peak wet weather capacity of 432 mgd. In compliance with federal and state laws, chemically enhanced primary treated water is discharged to the Pacific Ocean via a 4.5-mile outfall. NCWRP and SBWRP alleviate loads on the PLWTP by diverting wastewater flows for recycling and distribution to the Northern Recycled Water Service area and the Southern Recycled Water Service area, respectively.

2.4.2 North City Water Reclamation Plant

The NCWRP was the first large-scale water reclamation plant in San Diego; its operations commenced at the facility in 1997. The plant serves the northern San Diego region, including the cities of Del Mar and Poway, as well as City neighborhoods of Mira Mesa, Rancho Peñasquitos, Scripps Ranch, Carmel Valley, Sorrento Valley and southern Rancho Bernardo.

2.4.3 South Bay Water Reclamation Plant

The SBWRP is in the Tijuana River Valley near the international border. It began operation in 2002, making it the City's most recently constructed water reclamation plant. The plant primarily serves Otay Mesa and San Ysidro communities, as well as City of Chula Vista and County's East Otay Mesa community.

2.4.4 Non-potable Recycled Water Facilities

Early on, the City recognized the need to offset potable demands with non-potable water supplies to reduce reliance on imported water and increase reliability. Recycled water is wastewater that has undergone additional treatment (tertiary) to make it suitable for a range of beneficial uses. Tertiary recycled water, also known as Title 22 Water, as defined by the California Title 22 Standards (Title 22, Division 4, Chapter 3 of the California Code of Regulations), is regulated by the SWRCB's Division of Drinking Water.

Recycled water that has undergone tertiary treatment is safely used for many non-potable applications, including landscape irrigation, industrial cooling towers, toilet flushing, fountains and wetlands restoration; it has been used in the City for almost 20 years. Most of the recycled water is used for irrigation; there are a limited number of industrial connections where the water is used in cooling towers. Recycled water for non-potable uses is delivered to customers in purple pipes that are kept separate from potable water pipes to prevent cross-connections between the two delivery systems.

Recycled water is produced by the NCWRP and SBWRP. **Figure 2-9** presents the City's non-potable recycled water delivery system.

SECTION 2: Utility Service Area Description

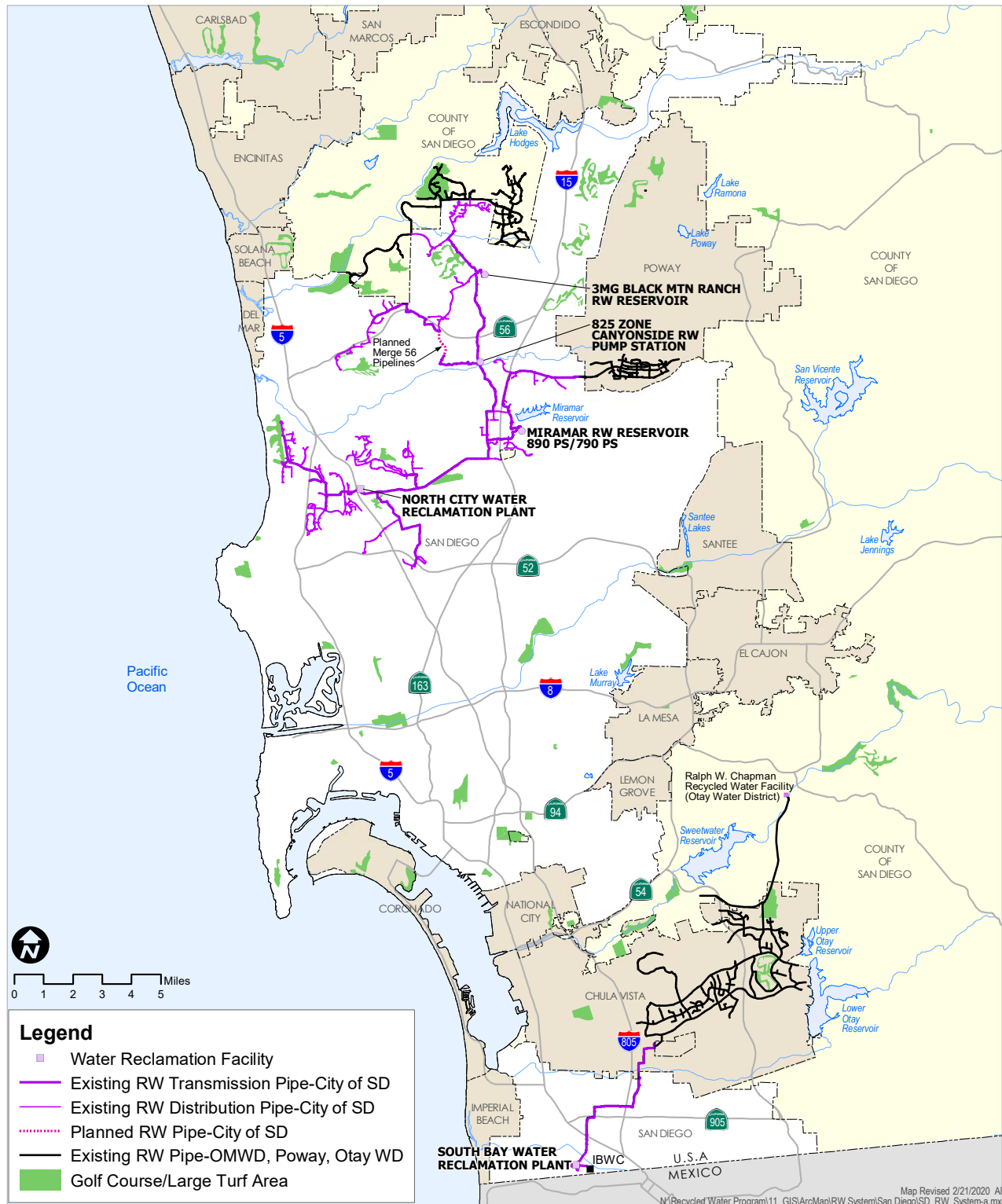


Figure 2-9:
Non-potable Recycled Water Delivery System (Source: HDR)

SECTION

3

Historical and Projected Water Use

Planning the future water supply requires understanding of past water use and the factors that influence future water use over time. This section presents historical and projected water use for the City's water service area, which includes retail water sales to customers in the City proper and wholesale water deliveries to other communities outside the City-proper.

The City forecasts its retail service area water demands using a sophisticated approach that incorporates metered water use by: parcel and parcel attributes (irrigatable lot size, presence of pool, and square footage by non-residential development type); current and projected land use; weather; socioeconomics (income, persons per household); and water efficiency. Statistical relationships were developed based on these variables and applied to future projections of households and non-residential parcels.

The City's water demand forecast model estimated water demand for 131 individual pressure zones (areas of the water distribution system that are separated by geography or topography) in the City's retail service area. Separate projections of wholesale water demand are then added to the retail demand forecast to determine the total projected water demands for the entire water system.

3.1 HISTORICAL WATER USE BY SECTOR

The City's potable water use is broken down into five retail sectors: (1) Single-family Residential; (2) Multi-family Residential; (3) Commercial/Institutional/Industrial (CII); (4) Irrigation for large landscaped areas; and (5) Other. The CII sector does include irrigation as well, e.g. when grounds irrigation may be on a common meter for CII building facilities. The "Other" sectors include metered sales for construction and temporary uses of water. In addition, the City has a wholesale water category for sales made outside of the City boundaries. **Table 3-1** presents the historical potable consumptive water use by retail sector and wholesale deliveries for 2015 and 2020. **Figure 3-1** specifically shows the breakdown in retail water use (excluding wholesale deliveries) for 2020. Neither **Table 3-1** or **Figure 3-1** includes recycled water for non-potable uses, as it is presented later in this section.

Recent and Projected Water Use for City of San Diego



- Total retail water demands decreased by 7 percent from 2015 to 2020, reflecting the City's conservation efforts.
- Single-family residential water use represents the largest portion of retail demand, about 37 percent in 2020.
- The City uses a detailed model to forecast water demands using existing demands, projected land use changes, water conservation efforts, economic data, census demographics and climate.
- From 2025 to 2045, retail demands will increase by about 14 percent to 183,488 AFY, and total demands (retail and wholesale) will increase by about 13 percent to 195,006 AFY.

Table 3-1 Historical Potable Water Consumption for City's Water Service Area

Sector	Type of Use	Treatment Level	2015		2020	
			Meters	Use (AFY)	Meters	Use (AFY)
Single-family Residential	Indoor and outdoor uses	Drinking Water	224,162	60,573	249,761	54,228
Multi-family Residential	Indoor and outdoor uses	Drinking Water	30,471	37,799	32,215	35,370
CII	Indoor and outdoor uses	Drinking Water	17,064	46,072	18,501	38,615
Irrigation	Landscape irrigation	Drinking Water	7,679	22,668	8,127	17,175
Other	Dust mitigation, cleaning	Drinking Water	464	0	0	0
Sub-total of Retail Service Area			279,840	167,112	308,604	145,388
Wholesale Water Sales	Domestic	Raw and Drinking Water	N/A	10,229	8	9,085
Total City Delivered Potable Water			279,840	177,341	308,612	154,473

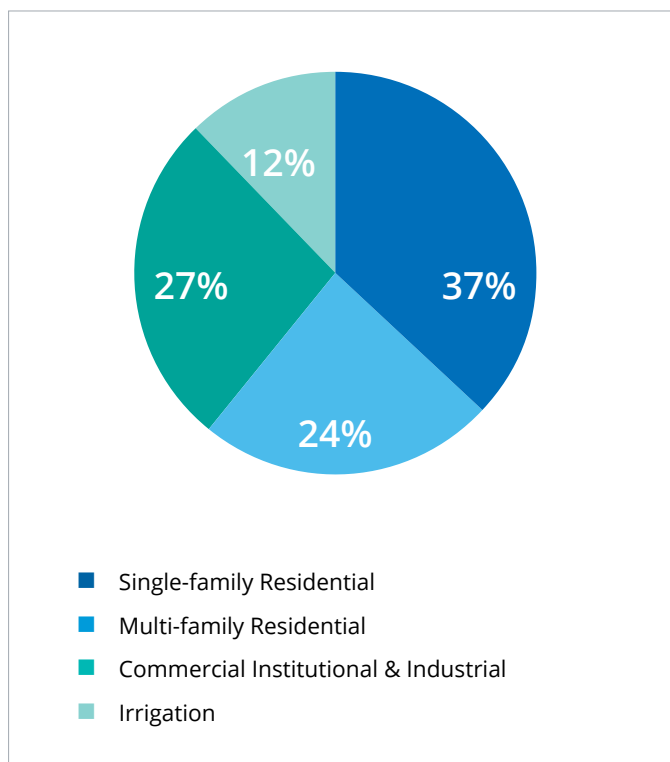


Figure 3-1:
2020 Potable Water Use for City's Retail Water Service Area
(excluding Wholesale)

Total retail area consumptive water demands decreased by 13 percent between 2015 and 2020, reflecting the City's conservation efforts as well as the more recent initial potential impacts of the COVID-19 pandemic beginning March 2020. Single-family residential water use makes up the largest sector of demand within the City's retail service area (excluding wholesale deliveries), representing about 37 percent of the total use in 2020. In 2020, multi-family residential, CII and irrigation accounted for 24 percent, 27 percent, and 12 percent of total retail water use, respectively.

The City also has four wholesale water delivery agreements:

- First, the City sells wholesale treated water to California American Water Company (Cal-Am). Within San Diego County, Cal-Am provides water to the cities of Coronado and Imperial Beach and to the Naval Air Station North Island; residents of Naval Air Station North Island reside within the City of Coronado, where residents of other military bases that the City serves are located within the City. The City sells only local surface water to

Cal-Am for its customers, in accordance with an agreement between the City and Cal-Am.

- Second, the City and Del Mar have an agreement that permits the City to take delivery of water that Del Mar purchases from the SDCWA at the Second Aqueduct Connection at Miramar WTP. The raw water is then treated by the City at the Miramar WTP and distributed to Del Mar through multiple system interconnections.
- Third, the City sells untreated wholesale water to the Santa Fe Irrigation District and San Dieguito Water District.
- Fourth, the City has an agreement to sell surplus water to the Otay Water District and transfer water to Ramona Municipal Water District. This occurs infrequently and for short durations.

3.2 HISTORICAL NON-REVENUE WATER AND NON-POTABLE RECYCLED WATER

System water use must also account for non-revenue water, which is defined as the difference between the potable water supplied to the system (also known as potable water production) and the potable water sold to customers (also known as metered water deliveries). Non-revenue water typically includes legitimate uses that are not metered, such as street cleaning, hydrant flushing and fire suppression, as well as unaccounted for water, such as meter errors and system leaks.

Typically, non-revenue water is presented as a percentage of total potable water production. The City reported:

- 9.0 percent of non-revenue water in the 2010 UWMP
- 7.4 percent of non-revenue water in the 2015 UWMP

In comparison, from 2016 through 2020, the City quantified its annual water loss at: 15,842 AF; 16,122 AF; 14,798 AF; 16,124 AF, and 17,035 AF, respectively. Non-revenue water for 2020 was determined to be 17,403 AFY that represents 11 percent, based on the American Water Works Association's (AWWA) Water Audit Software, as required by the 2020 UWMP Guidebook.

Non-potable recycled water meters and use for the City's service area for 2015 and 2020 are presented in **Table 3-2**. The City also sells recycled water to three wholesale customers (City of Poway, Olivenhain Municipal Water District and Otay Water District). These wholesale recycled water deliveries are not included in **Table 3-2**; rather, they are summarized in **Section 4 – System Water Supplies**. As non-potable water, most recycled water sales are used to meet irrigation demands.

Table 3-2 Historical Recycled Water Use for City's Service Area (not including Wholesale)

Sector	Type of Use	Treatment Level	2015		2020	
			Meters	Use (AFY)	Meters	Use (AFY)
Recycled Water	Irrigation/Industrial	Title 22 (Tertiary)	628	8,195	787	10,393

Between 2015 and 2020, recycled water meters increased as the City's PUD and Park and Recreation Department continued to retrofit City parkland, street landscaping and open space to irrigation that uses recycled water. However, during this same period, recycled water use decreased by approximately 23 percent. This decrease might be attributed to some landscape conversions from turf to California-friendly plants, which require less water, and to potential impacts to the economy due to COVID-19, which can be seen in other demand sectors for the City.

3.3 PROJECTED POTABLE WATER DEMANDS

In September 2020, the PUD finalized its new water demand forecast for internal processes such as facility analysis and planning. The previous City forecasts were based solely on use of econometric functions that statistically correlated past water use with socioeconomic and climate variables by major sector. In contrast, the new forecast is based on a hybrid method of empirical water use at the parcel level and statistical regressions. This new approach is a direct result of improvements in geospatial data matching of metered water use to parcels, along with land use and demographic/socioeconomic data at the individual pressure zone level for the service area.

The residential demand forecast model begins with correlations of historical residential parcel water use and parcel attributes (housing type, irrigable lot size, presence of pool and climate zone), as well as socioeconomic variables (income and persons per household) for existing households. Future active water conservation was estimated for these existing water customers and then subtracted to forecast existing residential demands. For new residential households, indoor water use was adjusted from existing customer levels based on: (1) changes in persons per household and income, as projected in SANDAG Series 14 growth forecast; and (2) increased water efficiencies from current and expected plumbing codes. New residential household outdoor water use was adjusted from existing customer levels based on: (1) reductions

in future lot sizes due to densification, based on SANDAG Series 14 projections of households and future land use/zoning from City planning; (2) changes in location of future households to different climate zones within the service area, based on SANDAG Series 14 growth at census tract level; and (3) compliance with California's Model Water Efficient Landscape Ordinance (MWELO) requiring significantly less turf grass for new residential development.

The CII demand forecast model develops water use coefficients per square foot for 18 major development categories (e.g., schools, hospitals, mixed use development, offices, manufacturing) based on matching existing water use with CII parcels. Reductions in CII water use coefficients over time are assumed to be based on compliance with MWELO. Projections of new CII parcels are based on projected land use for these development categories from City planning and SANDAG.



California-friendly Residential Landscape

Table 3-3 presents baseline potable water use demand projections by retail billing water sector through 2050, under historical average weather conditions. These projections include passive conservation, representing gains in water use efficiency from implementing plumbing code updates and landscape ordinances, and active conservation from utility rebates and customer behavior change.

Table 3-3 Potable Consumptive Water Demand Forecast for City's Service Area

Sector	Water Use (AFY)				
	2025	2030	2035	2040	2045
Retail:					
Single-family Residential	54,814	54,360	53,794	54,197	55,159
Multi-family Residential	40,623	45,491	49,607	52,854	54,464
CII	47,401	50,089	52,784	55,239	56,873
Large Irrigation	17,718	17,606	17,375	17,133	16,991
Retail Area Sub-Total	160,556	167,547	173,560	179,423	183,488
Wholesale Water Sales	11,518	11,518	11,518	11,518	11,518
Total (Retail plus Wholesale)	172,073	179,065	185,078	190,941	195,006

As shown, single-family residential water use is expected to decline during the period of 2020 to 2035, before increasing again from 2035 to 2045, as most development opportunities will be infill projects. As such, multi-family residential water use is forecasted to experience the greatest increase at 34 percent over the projection period of 2025 to 2045. CII sector demands are forecasted to increase by 20 percent from 2025 to 2045 based on a projected strong economy for the San Diego region. Wholesale water demand projections are also shown in **Table 3-3** and are based on water demand trends for the Cal-Am, Del Mar and Otay service areas.

3.3.1 Projected Low-income Residential Water Demands

The requirements for the 2020 UWMP call for projections of water demands for low-income residential customers. This requirement was first enacted during the 2010 UWMP cycle, as required by SB 1087. **Table 3-4** presents the projected water demands for low-income households.

It should be noted that the low-income residential demands presented in **Table 3-4** are included in the demand forecast presented in **Table 3-3**. Projected low-income residential water demands are based on

Table 3-4 Projected Low-Income Residential Demands for City's Service Area

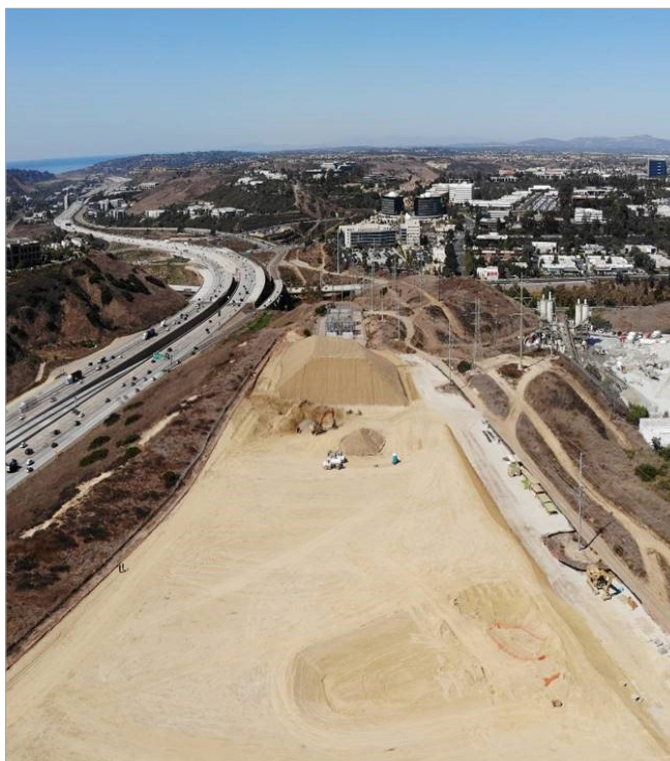
Sector	Low-income Water Demands (AFY)				
	2025	2030	2035	2040	2045
Single-family Residential	26,579	26,620	26,601	27,061	27,806
Multi-family Residential	28,960	32,431	35,365	37,680	38,827
Total (Retail Area)	55,539	59,051	61,966	64,740	66,633

the projected number of households with less than 80 percent of the median household income in proportion to the total number of households. The calculation for low-income demand uses the model implemented in the demand forecast for 80 percent of the San Diego County area median income of \$72,700, which is \$58,160. The number of households classified as low-income uses the SANDAG Series 14 data, which lists the service area households by income brackets for each zone and has a bracket with a high income of \$59,999. The number of households within and below this bracket are used to estimate the current and projected number of low-income single-family and multi-family units in each pressure zone. In 2020, low-income housing accounts for approximately 48 percent of single-family demand and 71 percent of multi-family demand. Comparing these calculated low-income demands with previously projected demands indicates that percentage will increase slightly over time, accounting for approximately 50 percent of single-family demand and 72 percent of multi-family demand by 2045.

3.3.2 Projected Non-Revenue Water and Non-Potable Recycled Water

Beginning in 2013, the City has estimated non-revenue water utilizing the AWWA Water Audit software. An estimate of 9 percent is used in the Water Demand Forecast for 2020 and beyond. Using these values, the City's forecast of its non-revenue and non-potable recycled water use to 2045 is presented in **Table 3-5**.

Non-potable recycled water demands are projected by the City based on its most recent Recycled Water Master Plan. Future non-potable recycled water is assumed to remain constant, as the City shifts its recycled water strategy to development of its Pure Water Program, which is discussed in subsequent sections of this UWMP.



Future North City Pure Water Facility (NCPWF) pre construction site

Table 3-5 Projected Non-revenue Water and Non-Potable Recycled Water Use for City's Service Area

Use	Water Use (AFY)				
	2025	2030	2035	2040	2045
Non-revenue Water	17,018	17,710	18,304	18,884	19,286
Non-Potable Recycled Water	13,773	13,773	13,773	13,773	13,773

3.3.3 Total Water Demand Forecast

The City's total water demand forecast represents retail potable water consumption, wholesale water sales, non-revenue water and non-potable recycled water. These demand categories are aggregated from the previous tables and summarized in **Table 3-6**.

Table 3-6 Projected Total Water Demand for City's Service Area

Use	Water Demand (AFY)				
	2025	2030	2035	2040	2045
Retail Potable Water Consumption (Table 3-3)	160,556	167,547	173,560	179,423	183,488
Wholesale Potable Water Sales (Table 3-3)	11,518	11,518	11,518	11,518	11,518
Non-Revenue Water (Table 3-5)	17,018	17,710	18,304	18,884	19,286
Total Potable Water Production	189,092	196,774	203,383	209,825	214,292
Non-potable Recycled Water (Table 3-5)	13,773	13,773	13,773	13,773	13,773
Total Water Demand Forecast	202,865	210,547	217,156	223,598	228,065

The potable retail water demands presented in **Table 3-6** include additional (post 2020) water conservation from plumbing codes, landscape ordinances and utility rebates (see **Section 5 – Demand Management Measures** for more information on City's conservation programs).

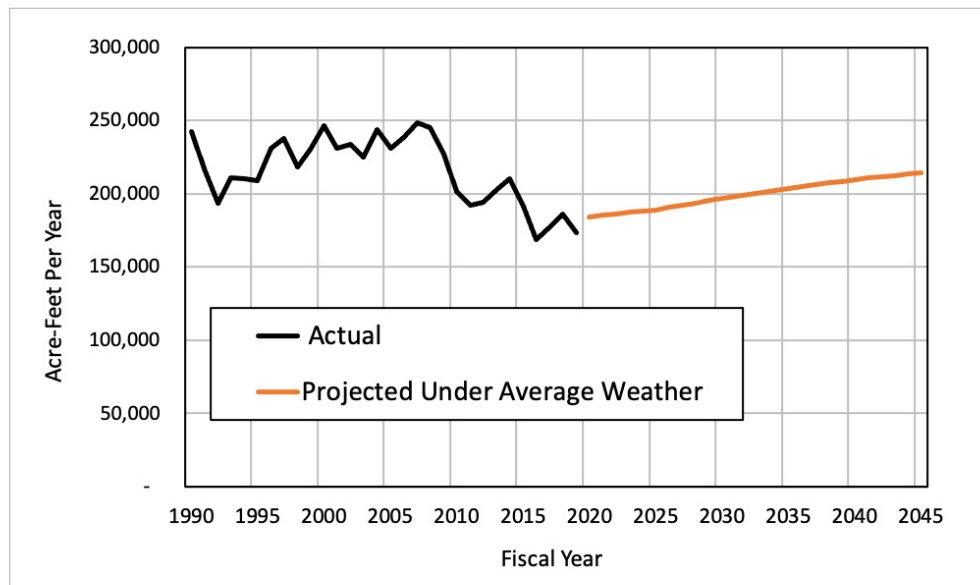
Table 3-7 shows the projections of total water conservation that were used in the forecasting of water demands for the City's water service area.

Table 3-7 Projected Potable Water Conservation for City's Retail Service Area

Sector	Post 2020 Water Conservation (AFY)				
	2025	2030	2035	2040	2045
Residential	2,682	5,360	7,892	11,335	13,000
CII	800	1,500	2,200	2,900	3,600
Total	5,507	8,890	12,127	16,275	18,645

Potable water conservation is forecasted to substantially increase from 2025 to 2045 with the largest savings coming from the residential sectors.

The historical and projected potable water demands (inclusive of wholesale sales and non-revenue water) are shown in **Figure 3-2**.



*Figure 3-2:
Historical and projected potable water
demands (inclusive of wholesale sales
and non-revenue water).
See Table 3-6*

There are a number of important findings based on the detailed nature of the City's water demand forecast:

- **Increased Water Use Efficiency** – By 2030, the demand forecast assumes that most residential water customers for indoor water use will be at or below 50 GPCD. This usage represents a near-maximum efficiency level for toilets, showerheads, faucets, clothes washers and leaks. Future residential outdoor water use is also expected to be reduced from current levels by about 25 percent for single-family and 30 percent for multi-family per MWEL requirements. The gains in water efficiency will result in decreased water use per parcel and push overall per capita water use downward.
- **Density of New Development** – The density for new single-family development will increase leading to smaller lot sizes and reduced irrigable area. As single-family homes use the greatest amounts of water for irrigation by sector, the changes in lot sizes and irrigable area will result in decreased water use per home type and push overall per capita water use downward.
- **Location of New Development** – Based on available land and zoning, projected growth will mostly occur in pressure zones where temperatures are greater than current average. When all other factors remain constant, this projected growth pattern means that residential demands at the service area average will be greater and will push the overall per capita water use upward.
- **Decreasing Persons Per Household** – SANDAG Series 14 growth projections indicate that persons per household for San Diego will decrease from about 2.7 (in 2020) to 2.4 (by 2045). While a decrease in persons per household decreases indoor household water use, outdoor water use largely remains the same. This decrease has the impact of increasing overall per capita water use, which may seem counter-intuitive, but occurs because reductions in household water use are divided by fewer persons per household.
- **Overall Per Capita Water Use** – All of these findings counter-balance each other, resulting in projected per capita water use that is projected to remain fairly constant at 111 GPCD from 2030 to 2045, which is still considerably less than the per capita water use of 130 GPCD in 2015.

SECTION

4

Water Supplies

This section summarizes the City's current and approved future water supplies that are in progress, and it identifies potential and/or conceptual future water supplies that the City may implement in the coming years. The reliability of these water supplies is presented in **Section 6 – Water Supply Reliability Assessment**.

The City's current and approved future water supplies consist of: (1) water purchased from SDCWA, either directly transferred or stored in various reservoirs; (2) local supplies including groundwater, capture of local runoff from rainfall within seven of its nine surface reservoirs, and Pure Water which is approved and in progress; and (3) recycled water for non-potable water use. Purchased water from SDCWA is the largest portion of the City's overall water supply. In 2015, a significant drought year, SDCWA water accounted for 97 percent of the City's total water supply as the availability of local surface water was lower than in normal hydrologic years. Imported water from SDCWA accounted for about 89 percent on average from 2016 to 2020. (see **Figure 4-1**).

The City has continued to develop additional local water supplies to reduce its reliance on imported water and improve overall reliability, as discussed in subsequent sections. As shown in **Figure 4-1**, it has reduced its purchase of imported water to nearly the levels of the late 1970's, despite doubling its population during

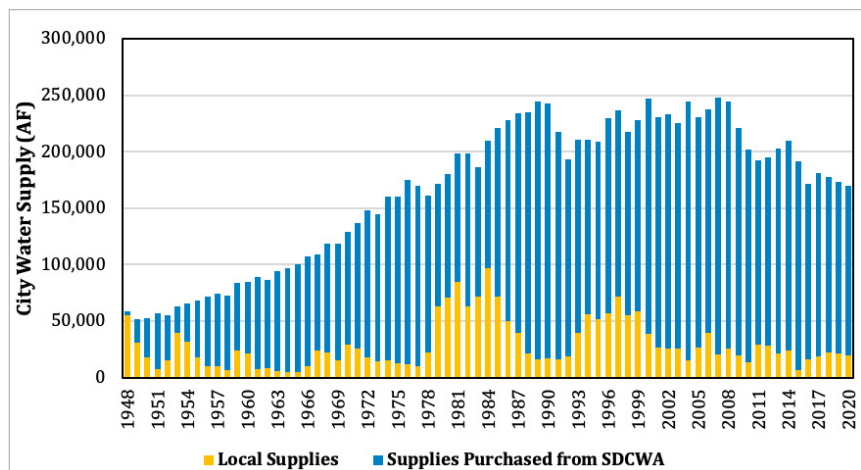


Figure 4-1:
Historical Water Supply for City of San Diego

Highlights of the City's Water Supplies



Pure Water Advanced Water Purification

- In 2020, the City met about 89 percent of its supply needs with water purchased from the SDCWA with the remainder from the City's local reservoirs, groundwater and recycled water.
- Reliance on the SDCWA is anticipated to reduce significantly in the future with the implementation of Pure Water San Diego, the project will create a drought proof water supply using advanced water purification technologies to treat recycled water and send to drinking water treatment facilities for additional treatment and distribution.
- By 2045, the City expects to provide 57 percent of its total supply from local sources, effectively reversing the current reliance on imported water.

that same 50-year timespan. The City's move to reduce its reliance on imported purchased water recognizes constraints on MWD's imported water supplies during past droughts and other regulatory restrictions to protect fisheries that further limit or create additional uncertainties of importing water from the Delta.

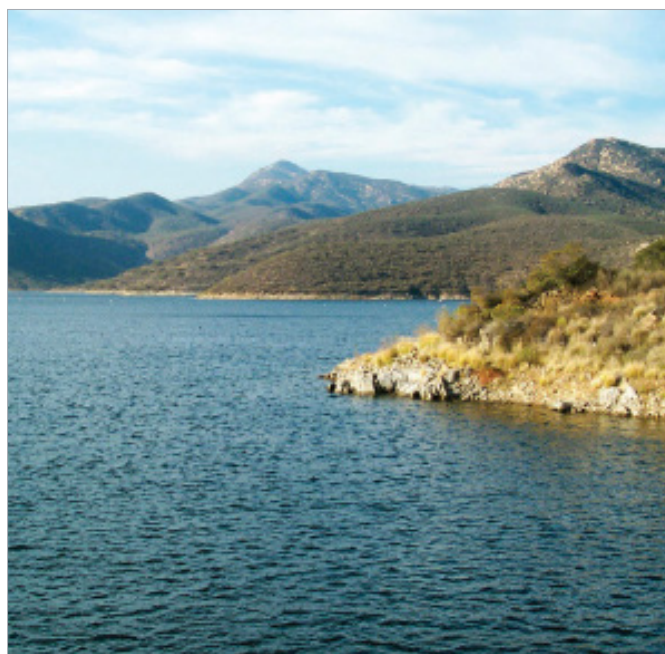
4.1 CITY LOCAL SURFACE WATER

Local runoff from rainfall is collected in the City's extensive surface reservoir system. To ensure water supply reliability, the City beginning in 1912 expanded its water supply system with the acquisition of existing reservoir systems and dams, and completed the following over a 40-year timeframe:

- Constructed the Morena Dam in 1912 and Lower and Upper Otay reservoirs in 1913
- Purchased Hodges Reservoir and the San Dieguito Dam in 1925
- Began construction on Sutherland Dam in 1927 and completed in 1954
- Constructed El Capitan Dam in 1935
- Completed San Vicente Dam and pipeline in 1943

Currently, the City owns nine reservoirs with a total capacity of 549,007 AF as summarized in **Table 2-4 City Reservoirs**. Seven of these reservoirs, as listed in **Table 4-1**, provide a local water supply to the City, while two other reservoirs are for emergency storage only.

The median of historical reservoir supply from 1948 to 2020 was used as the projection for years 2025



San Vicente Reservoir

to 2045, as shown in **Table 4-1**, and is assumed to remain constant over the forecasted period. The City operates its surface water reservoir system to maximize the use of local supplies in the form of runoff from local watersheds, while also storing imported water as described in **Section 2**. The reservoirs, highlighted in the table above, not only provide water supply benefits, but also support recreation, growth of native flora and fauna, and flood control needs.

Table 4-1 Current and Projected Local Surface Water

Reservoirs Providing Local Supply	Water Supply (AFY)					
	2020	2025	2030	2035	2040	2045
Barrett, El Capitan, Hodges, Lower Otay, Morena, San Vicente, Sutherland	19,286	22,015	22,015	22,015	22,015	22,015
City-Lake Cuyamaca Interagency Agreement	400.2	400	400	400	400	400
Total Local Reservoir Supply	19,686	22,415	22,415	22,415	22,415	22,415

4.2 LOCAL GROUNDWATER BASINS

This section identifies local groundwater basins and describes their location, geography, climate, water quality concerns and usage.

The City has rights, jurisdiction and municipal water supply development interests in three groundwater basins in the San Diego region. These basins are:

- San Pasqual Basin
- Santee/El Monte (identified as the San Diego River Valley Basin)
- Coastal Plain of San Diego (includes the Sweetwater Valley, Otay Valley and Tijuana basins)

None of the groundwater basins listed above are adjudicated; the basins are managed by the courts to ensure that water rights are protected and safe yields are adhered to.

San Pasqual Valley Basin

The San Pasqual Valley Basin is in the northern part of the City, approximately 25 miles northeast of downtown San Diego and within the San Pasqual Valley, which is a designated City-owned and managed agricultural preserve. The San Pasqual Valley is sparsely populated and is used mainly for agricultural and commercial operations including row crops, orchards, nursery/greenhouses, turfgrass and a dairy operation. Groundwater is used as the primary water supply in the valley.

The San Pasqual Valley Groundwater Basin is designated medium priority by California's Sustainable Groundwater Management Act of 2014 (SGMA). On June 27, 2017, the City Council approved forming a Groundwater Sustainability Agency (GSA) and preparing a Groundwater Sustainability Plan (GSP) to comply with the requirements of SGMA. The GSP must be adopted by January 31, 2022; sustainability must be achieved by 2042.

The City and San Diego County formed the San Pasqual GSA and hosted the first public meeting regarding SGMA compliance in October 2016. The GSA filed a notice of intent to develop a GSP for the

basin in January 2019. The GSA is currently working with a consultant and stakeholders to complete the GSP by the required completion date and satisfy all the requirements for the DWR approval.

Santee-El Monte Basin

The Santee/El Monte Basin (identified as the San Diego River Valley Basin in DWR Bulletin 118) is located outside the City's municipal boundary, but within San Diego County. It is situated in the eastern portion of the San Diego River watershed near the cities of Santee, La Mesa and El Cajon, and the unincorporated community of Lakeside. The SGMA has designated this basin as very low priority. The basin includes two dams (San Vicente and El Capitan) that are owned and operated by the City. The City installed the San Vicente Production Well in 2004 with a maximum capacity of 600 gallons per minute (gpm), representing almost 1,000 AFY. In March 2010, the City drilled a pilot production and municipal supply well about a quarter mile downstream of its El Capitan Reservoir. Currently, the groundwater available for beneficial use is 500 AFY from the existing production wells in the Santee/El Monte Basin.

Coastal Plain of San Diego

The Coastal Plain of San Diego groundwater basin is in southern San Diego County. It is a confined aquifer that underlies a portion of the Otay Valley, Tijuana and Sweetwater Valley groundwater basins, as identified in DWR Bulletin 118.

The Coastal Plain of San Diego is classified as very low priority on DWR's Basin Priority List. The Otay Valley is considered marginal to inferior for potable water production because of high Total Dissolved Solids (TDS) levels in the Coastal Plain. Groundwater in the eastern portion of the basin could be suitable for potable production water; it would likely require treatment. The groundwater is marginal to inferior for irrigation due to high chloride concentrations. Groundwater in the Sweetwater Basin generally exceeds the recommended drinking water limits for TDS, chloride and sodium content.

4.2.1 Historical Groundwater Basin Use

Table 4-2 summarizes groundwater pumped by the City over the past five years from the San Vicente and El Capitan groundwater production wells located in the Santee/El Monte groundwater basins.

Table 4-2 Historical Groundwater Supply (AFY) to City from 2016 - 2020

Groundwater Well	2016	2017	2018	2019	2020
Santee/El Monte: San Vicente GW Production Well	0	0	0	0	0
Santee/El Monte: El Capitan GW Production Well	0	18.8	38.0	25.8	51.6

4.2.2 Future Groundwater Use

Table 4-3 presents the City's projected groundwater supplies available under normal climate conditions.

Table 4-3 Projected Groundwater Supply to City

Groundwater Well	Groundwater Supply (AFY)				
	2025	2030	2035	2040	2045
Santee/El Monte: San Vicente GW Production Well (Pump & Blend)	50	50	50	50	50
Santee/El Monte: El Capitan GW Production Well (Pump & Blend)	50	50	50	50	50
Total	100	100	100	100	100

The production from the San Vicente and El Capitan wells is projected to be 50 AFY per well in 2025 and beyond. Water from both new wells would be used for "pump and blend" of raw water applications.

4.3 RECYCLED WATER (NON-POTABLE REUSE)

This section provides an overview of recycled water and describes the location and amount of recycled water, the existing disposal of wastewater, the existing and projected uses of recycled water, and the quantity of recycled water potentially available.

Criteria and guidelines for the production and use of recycled water were established by the SWRCB in Title 22. This regulation was most recently revised in October 2018. Title 22, also referred to as the Water Recycling Criteria, establishes wastewater treatment standards

and recycled water quality standards that are based on the end-user of the recycled water. Title 22 also establishes recycled water criteria to protect public health. Recycled water is defined in the California Water Code as "water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource."

As it replaces imported potable supplies with a non-potable source, recycled water helps to reduce demands for potable water. Source water for the recycled water system is supplied through the City's Metro System that includes incorporated areas of the City and 12 participating agencies. PLWTP is the City's largest treatment facility. The NCWRP and SBWRP are two smaller water reclamation plants that produce recycled water for beneficial use within the City.

The City's recycled water is treated to a Title 22 (as the California Code of Regulations, Title 22, Division 4, Chapter 3 is commonly referred to) disinfected tertiary level quality suitable for irrigation and industrial processes, including: cooling water towers, construction purposes, ornamental fountains, flushing toilets and groundwater recharge.

The City has more than 700 recycled water retail customers and three wholesale customers (City of Poway, Olivenhain Municipal Water District and Santa Fe Irrigation District). The City has taken multiple actions in recent years to investigate and expand its recycled water system, as described in the 2020 Recycled Water Master Plan Update.

4.3.1 Recycled Water System

The City's recycled water system was originally planned to consist of four independent recycled water service areas: 1) Northern Service Area (NSA); 2) Southern Service Area (SSA); 3) San Pasqual Service area (via a future San Pasqual WRP); and 4) Central Service Area (via a future Mission Valley WRP.) To date, only the NSA and the SSA have been built. **Table 4-4** summarizes the volume of wastewater recycled by the NCWRP and SBWRP in 2020 within their service areas.

The NSA is the City's largest recycled water distribution system and is served by the NCWRP. This area includes 94 miles of pipelines, two storage tanks and two pump stations. The NSA has two wholesale customers: the City of Poway and Olivenhain Municipal Water District. Approximately 99 percent of recycled water in the NSA is used for irrigation, while the remainder is used for cooling towers, construction, ornamental fountains and toilet/urinal flushing. The City completed Phase I of the NSA recycled water system expansion in 2005. The Phase II expansion, in progress at the time of this UWMP, extends westerly from Black Mountain Road along the State Route (SR) 56 corridor.

The SSA is the smaller distribution system of the two reclaimed distribution systems and is served by SBWRP. This area includes a relatively simple distribution system of 3.12 miles of pipelines, one storage tank, one pump station, and a connection to Otay Water District, which is the only wholesale customer for the service area. Most water produced by SBWRP is sold to Otay Water District that operates its own extensive recycled water distribution system.

Table 4-4 Wastewater Treated in 2020 by Treatment Plant

Wastewater Treatment Plant	Discharge Location	Method of Disposal	Treatment Level	2020 (AFY)			
				Wastewater Treated ¹	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service
NCWRP	Sewer	Conveyed to PLWTP	Tertiary for recycled water; Secondary for non-recycled water	18,208	9,256	8,300	771
SBWRP	Pacific Ocean via outfall	Outfall	Tertiary for recycled water; Secondary for non-recycled water	7,323	4,942	2,093	1,694
Total				25,531	14,198	10,393	2,466

¹ Includes wastewater generated outside of water service area since wastewater service area is larger than the water service area.

The NCWRP, the SBWRP and two additional recycling facilities located upstream of the Metro System relieve wastewater flows that would have historically flowed into the Metro System for treatment at the PLWTP. The two additional plants, Ralph W. Chapman Water Recycling Facility in Otay Water District and the Padre Dam Water Recycling Facility in Padre Dam Municipal Water District, are owned by outside agencies; their service areas are not described in this document.

4.3.2 Non-potable Recycled Water Use

Table 4-5 summarizes the historical annual recycled water use in the NSA and SSA. Recycled water contributed an average of 6 percent of the City's supply portfolio from 2015 to 2020 and dropped to 4 percent in 2020. **Figure 4-2** summarizes historical and projected recycled water sales as published in the Recycled Water Master Plan.

Table 4-5 Historical Recycled Water Supply from 2015 to 2020

Service Area	Recycled Water Supply (AFY)					
	2015	2016	2017	2018	2019	2020
NCWRP	8,035	6,578	6,956	8,614	7,928	8,300
SBWRP	4,392	3,559	4,361	4,191	3,473	2,093
Total	12,427	10,137	11,317	12,805	11,401	10,393

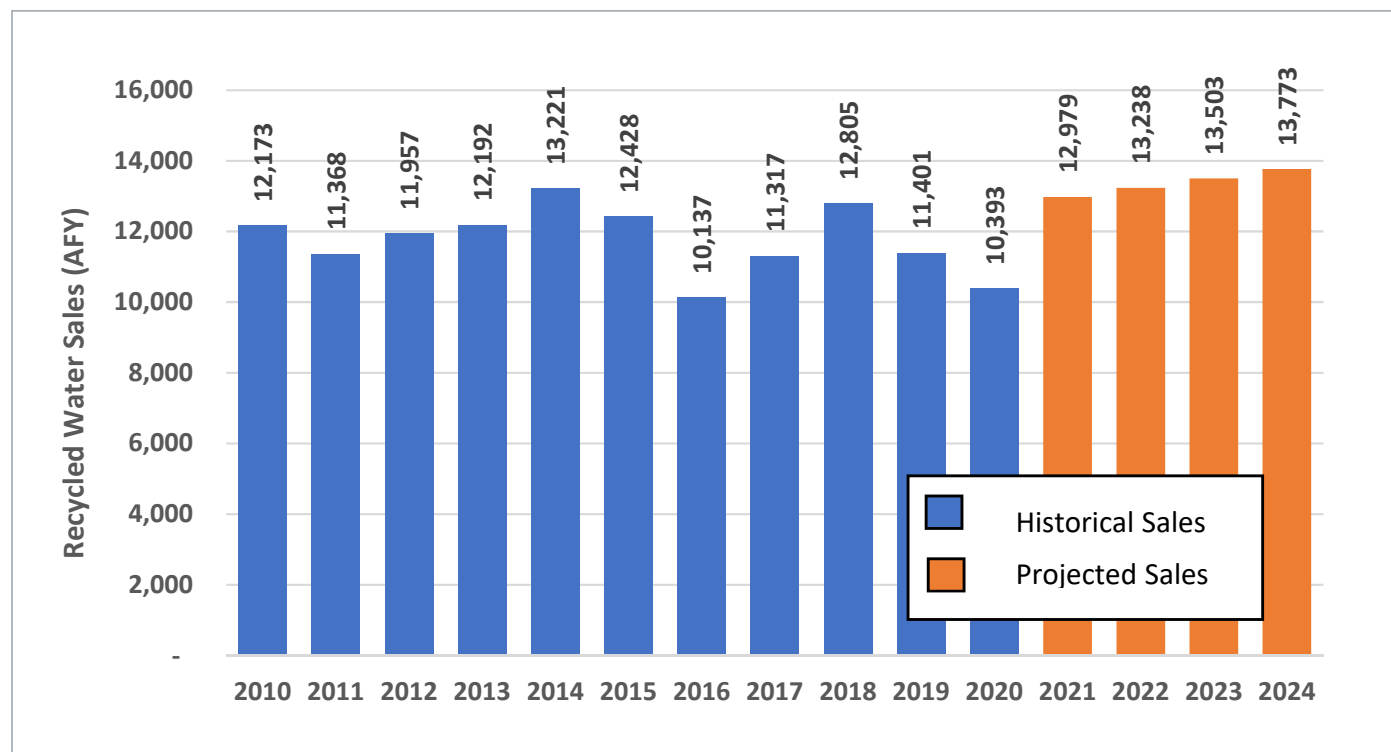


Figure 4-2
Historical and Projected Non-potable Recycled Water Sales
(Source: Recycled Water Master Plan)

As shown in **Table 4-6**, sales to other agencies have also been reduced.

Table 4-6 Historical Recycled Water Use

Recycled Water Use	Actual Use (AFY)	
	2015	2020
In-City	8,195	10,393
Sales to Other Agencies	4,232	2,466
Total	12,427	12,859

Between 2015 and 2020, the amount of recycled water used has increased by 3 percent. The 2020 recycled water use in **Tables 4-5** and **4-6** are most likely impacted by the economic downturn due to COVID-19.

4.3.3 Future Non-potable Recycled Water Use

As part of the 2020 Recycled Water Master Plan Update, opportunities to increase recycled water use without impacting the City's Pure Water San Diego Program plans were evaluated for the four service areas—two existing and two conceptual—as outlined below. These may be considered in the 2025 UWMP update and are not currently “firm planned” for use with compliance **Table 4-7** below.

Northern Service Area: Opportunities to increase recycled water use have been identified in the Torrey Pines, Sorrento Valley, Mira Mesa, Scripps Ranch and Rancho Peñasquitos communities, Marine Corp Air Station Miramar, and the SR 56, SR 52, SR 163 and I-805 freeway corridors. The City plans to expand the NCWRP to 52 mgd of tertiary-treated capacity, with 30 mgd being supplied to the North City Pure Water Facility (NCPWF) for Pure Water while a maximum of 20 mgd could be reserved for recycled water

customers. Expansion to 20 mgd for recycled water customers equates to 5,400 AFY of demand that could be connected to the NSA regardless of the Pure Water San Diego Program. NSA customers include the City's Metro Biosolids Center, as well as irrigation and cooling tower use.

Southern Service Area: Plans to expand recycled water production in the SSA have been postponed due to an increasing level of TDS in the wastewater effluent, as well as the difficulty with diverting additional wastewater flow to the SBWRP from the Grove Avenue Pump Station for treatment. Wastewater flows have decreased due to water conservation. The 2020 Recycled Water Master Plan Update noted that all new future expansion in the SSA is limited to the Otay Water District and California Department of Transportation, and is dependent on Otay Water District amending an agreement that currently expires in December 2026 to allow 6,000 AFY of recycled water delivery. Otay Water District anticipates a 2,000 AFY increase in recycled water demand, from 4,500 AFY in 2013 to 6,500 AFY in 2050.

Table 4-7 Projected Recycled Water for Non-potable Reuse

Recycled Water Use	Recycled Water Supply (AFY)				
	2025	2030	2035	2040	2045
In City (non-potable)	13,773	13,773	13,773	13,773	13,773

Central Service Area (CSA): Recycled water could potentially come from the NCWRP or a satellite plant to or a satellite plant to Mission Valley and Balboa Park. Phase 2 of the Pure Water San Diego Program is considering a number of alternative combinations of water reclamation plants, pipelines and purified water facilities. The recycled water would be conveyed from the proposed Central Area Water Reclamation Plant near Harbor Drive to the proposed Central Area Pure Water Facility near SDSU Mission Valley (previous stadium site) via a transmission main through Mission Valley. Branching off that conveyance system, recycled water could feasibly be delivered within the CSA.

4.3.4 Maximization of Recycled Water

Prepared in 2012 year, the City's Recycled Water Study recommended that maximization of recycled water would be most cost-effectively achieved through potable reuse. Potable reuse uses advanced treatment to purify recycled water to replenish a groundwater basin or a surface reservoir. The water extraction from groundwater or surface water is often treated again at a water treatment plant. Unlike the current use of City recycled water for non-potable uses, purified recycled water can be used for potable uses. **Figure 4-3** summarizes the Pure Water purification process. Currently ozonation is considered for the first step in the process.

The advanced water purification process produces water that meets all drinking water standards. However, passing purified water through environmental buffers, such as a groundwater aquifer or reservoir, provides an additional barrier for the protection of public health. This strategy has several benefits, including:

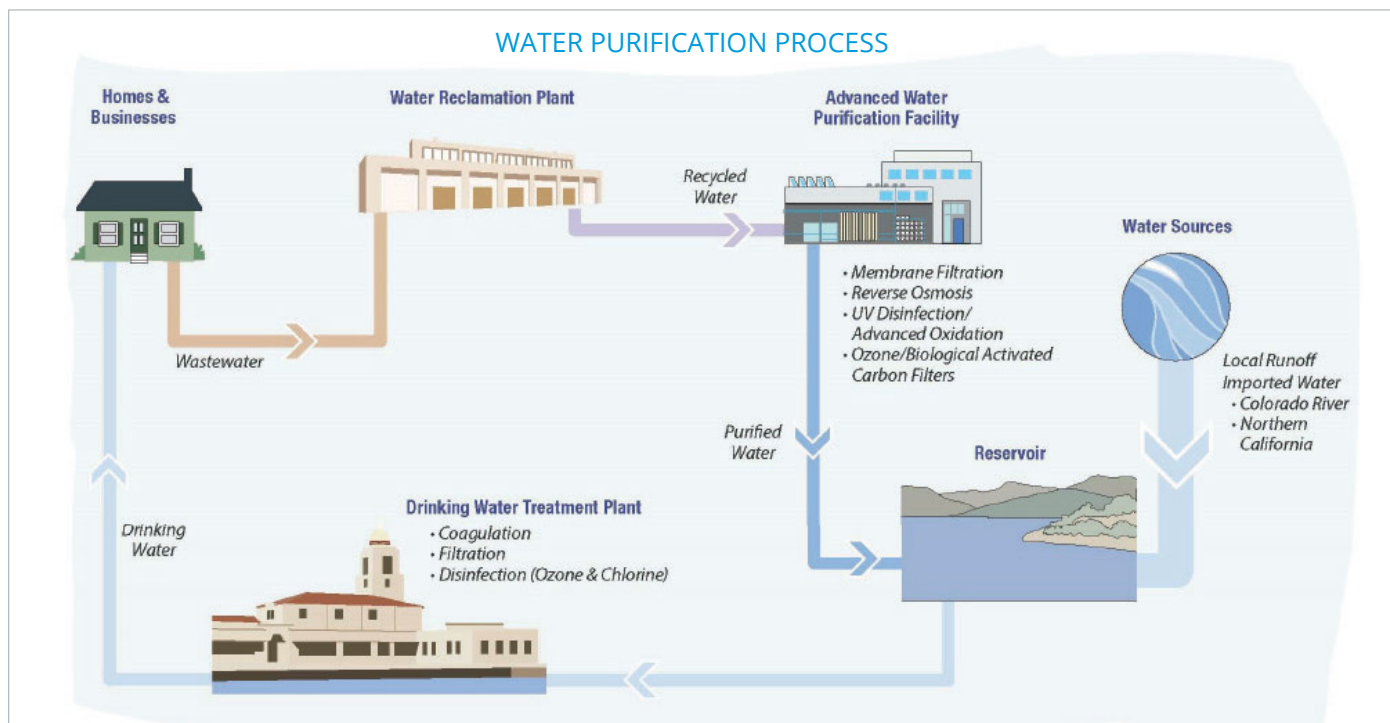


Figure 4-3
Pure Water San Diego Program Overview

- Reducing dependence on imported water
- Providing a locally-controlled drought-proof water supply
- Reducing the discharge of treated wastewater into the ocean

Additionally, this strategy provides the lowest overall unit cost compared to expansion of the City's non-potable recycled water system.

Pure Water San Diego (Potable Reuse)

The City and its regional partners face significant issues with water supply and wastewater treatment. The region's reliance on imported water causes the water supply to be vulnerable to shortages and susceptible to price increases beyond the control of City. The Pure Water San Diego Program will provide a safe, secure and sustainable local drinking water supply for San Diego. It will use advanced water purification technology to produce potable water from recycled water.

The Pure Water San Diego Program is a 20-year (2015-2035) multi-phased water and wastewater capital improvement initiative that is expected to create 83 mgd of locally controlled water upon full implementation in 2035. The Pure Water San Diego Program will divert treated water from the PLWTP ocean outfall and recycle a valuable and limited resource that is currently discharged to the ocean. Phase 1 is expected to be online by March 2025. Production is expected to be a staged ramp-up in flow with 30 mgd produced by the end of Calendar Year (CY) 2025. This will allow the City to reduce the amount of water it purchases in FY 2025 and beyond.

In 2010, the City received a renewal of the Modified Permit for the PLWTP and agreed to identify opportunities to maximize recycling wastewater for potable and non-potable uses. That permit expired in July 2015 and was administratively continued while the regulatory agencies completed work on the renewal application. In 2017, the Environmental Protection Agency (EPA), in conjunction with the California Regional Water Quality Control Board (RWQCB), renewed the Modified Permit (5th Renewal) and provided a waiver from secondary treatment standards for an additional five years. The permit took effect October 1, 2017 and expires on September 30, 2022. The 5th Renewal was based on compliance with Clean Water Act requirements, progress of the Pure Water San Diego Program, and a reduction in permitted emissions from the previous permit level. The Pure Water San Diego Program is designed to reduce discharge into the ocean from PLWTP while providing a new local source of potable water for the City. It is anticipated that continuation of the Pure Water San Diego Program will be reflected in future permits that will eliminate the need for the City to make over \$1.8 billion in upgrades to the PLWTP, which would otherwise be necessary.

Table 4-8 summarizes the projected supply from Pure Water San Diego Phase 1 and 2 in AFY.

By 2035, Pure Water's Phase 2 will expand repurified water production from 30 to 83 mgd. The City has initiated early planning studies and plans, which include constructing a new pilot plant at the Harbor Drive site by 2025 in Central San Diego. This pilot plant could

Table 4-8 Pure Water San Diego Program Phase I and II Projected Supply

Pure Water Supply	Recycled Water Supply (AFY)				
	2025	2030	2035	2040	2045
Pure Water San Diego Phase 1	16,800	33,600	33,600	33,600	33,600
Pure Water San Diego Phase 2			59,360	59,360	59,360
Total	16,800	33,600	92,960	92,960	92,960

send the purified water to either Lake Murray Reservoir or San Vicente Reservoir. Additionally, an advanced water treatment facility could be constructed at the SBWRP in the South Bay and send purified water to Otay Lakes.

4.4 SDCWA PURCHASED WATER

This section provides an overview of imported water sources and how they are calculated, along with the current diversification strategies for these imported sources. The City, which has been purchasing imported water from SDCWA since 1947, determines the imported water supply it needs to purchase from SDCWA by subtracting its local water supplies from its total water demands. As required by the Act, the City's water demand projections, local supplies and needs for supplemental water are provided to SDCWA. **Table 4-9** shows the projected calculation for imported purchased water, assuming average weather and hydrological conditions.

The difference between the demands and supplies represents the need for purchased water from SDCWA. During the forecasted period, the City's average demands on SDCWA are projected to decrease by approximately 34 percent by 2045 as Pure Water Phase 2 comes online.

The SDCWA receives most of its water supplies from transfers with high-priority Colorado River contractors. In 2020, SDCWA received 144,000 AF (31 percent of total water supplies) from a conservation and transfer agreement with the IID and 86,000 AF (19 percent of

its water supplies) from the All-American Canal and Coachella Canal Lining Projects. MWD, Southern California's regional wholesale water provider, takes delivery of these supplies through the CRA and delivers the same quantity of water to SDCWA. These agreements entitle SDCWA to higher priority Colorado River water rights than MWD's Priority 4 apportionment. When SDCWA prioritizes CRA imports over SWP imports the City's reliance on Delta water is decreased.

SDCWA relies on MWD for some of its water supplies. MWD imports water from the Colorado River and the Delta via the SWP. The SWP carries water to Southern California via large canals, pipes, tunnels, and pump/lift stations. Large SWP and MWD surface reservoirs are used to store imported water when it is plentiful for later use during dry years. To supplement its imported water, MWD has also developed and participates in several groundwater storage and banking programs, as well as water transfers from agricultural water districts.

Lake Mead is the primary storage reservoir for California withdrawals from the Colorado River. In 2016, an ongoing 12-year drought along this river resulted in Lake Mead being at its lowest level since the reservoir started to fill in 1935. In April 2019, the U.S. Congress passed a finalized DCP, as agreed upon and produced by the three Lower Basin States (Arizona, California and Nevada) and Mexico.

Table 4-9 City's Future Need for Purchased Water from SDCWA

Category	Demand and Supplies (AFY)				
	2025	2030	2035	2040	2045
City water demands: Retail and Wholesale ¹	202,865	210,547	217,156	223,598	228,065
Less City local water supplies ²	53,088	69,888	129,248	129,248	129,248
Purchased water from SDCWA³	149,778	140,660	87,907	94,350	98,816

¹ Represents net future water demands, after future active water conservation resulting from rebates and behavior change is subtracted (see Table 3-7).

² Includes existing and planned supplies (surface water, groundwater, and recycled water, including Pure Water San Diego Phase 1 and 2).

³ Represents difference between City water demands and planned local water supplies.

The shorted allocation volumes include California deliveries; these volumes are designed to keep Lake Mead elevations above 1,000 feet and avoid federal government intervention. As of April 2020, Lake Mead held 43 percent of its full capacity with 11.3 MAF; this holding was up from 10.4 MAF in 2019 and the historic low of 9.8 MAF in 2016.

SWP deliveries are based on:

- Pre-determined contractor allocations
- Supplemental Article 21 supplies proportional to contractors' Table A volumes
- Surplus Article 56 deliveries

The biological opinions issued by U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) resulted in flow-based environmental standards for SWP operations. SWP deliveries to Southern California have declined in the last decade due to regulatory actions to protect several endangered and threatened fish species, including the Delta smelt and winter-run Chinook salmon.

In this context, DWR has proposed the Delta Conveyance Project to increase reliability and reduce

the ongoing physical impacts associated with the existing pumping facilities at the southern end of the Delta. The Delta Conveyance Project is currently going through its environmental analysis and permitting process.

4.4.1 MWD Water Supply Diversification Strategy

To augment its imported water from the Colorado River and Delta, MWD has developed water banking programs, agricultural efficiency and land fallowing programs, and water transfers. These supplemental supplies are used mainly during dry years and droughts, and are located in Riverside County, Imperial County and the Central Valley region. Additionally, MWD has developed groundwater storage programs with water agencies in its service area and also provides financial incentives for local water agencies in its service area to implement projects for recycled water, groundwater recovery and seawater desalination.

Figure 4-4 presents MWD's 2015 Integrated Resources Plan (IRP) Update's water supply portfolios for 2015 and 2040.

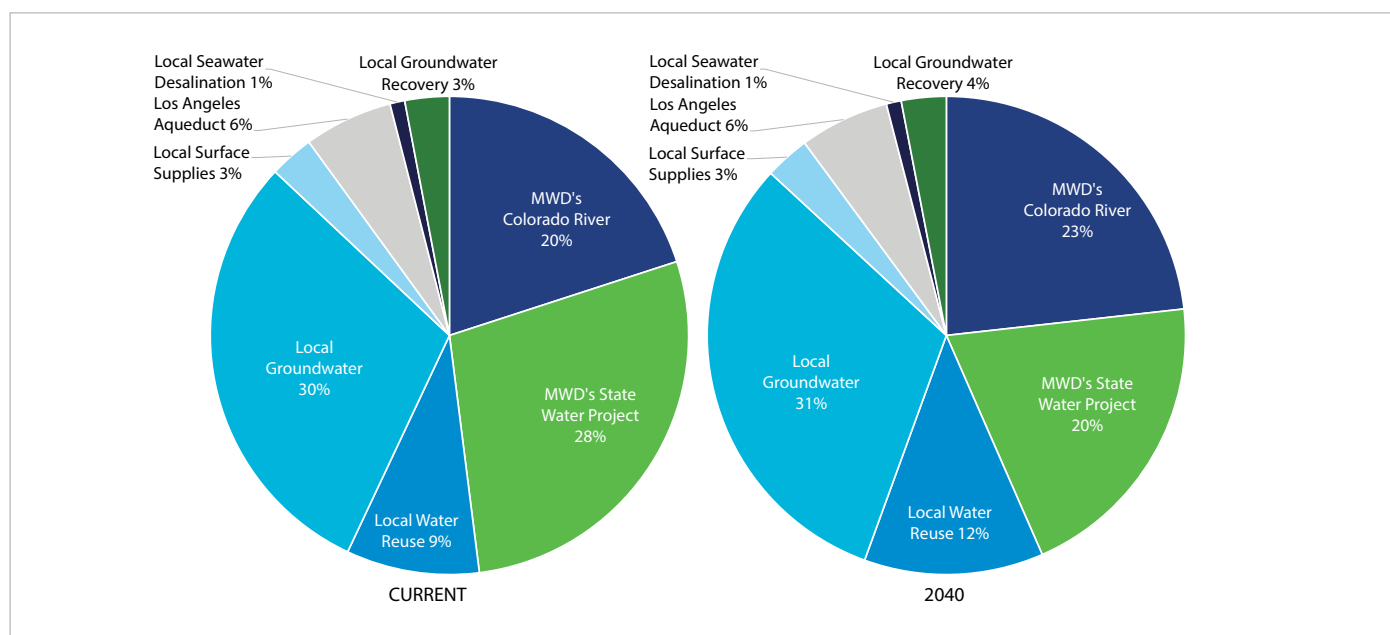


Figure 4-4
MWD 2015 IRP Update Water Portfolio Comparison (2015 and 2040)

As shown, MWD's expected future reliance on SWP supplies will decrease from 28 percent to 20 percent by 2040, reflecting increases in regional local supplies of its member agencies as a result of these supplemental strategies. MWD is currently updating its regional IRP to prepare for future water supply reliability under a variety of scenarios. Its 2020 IRP is expected to propose six adaptive management approaches that build on the recommendations from MWD's 2015 IRP Update, including:

- **Maintain CRA Supplies:** Water transfers usually take agricultural water out of production once land is fallowed. Transfers include dry-year water transfers and new Palo Verde Irrigation District supplies from MWD land holdings in the Palo Verde Valley. Non-specified CRA transfers may include additions to existing contracts and binational transfers from a potential large-scale seawater desalination plant at Rosarito Beach in Baja California, Mexico.
- **Stabilize SWP Supplies:** The Delta Conveyance Project would allow flows bound for Southern California to bypass the environmentally sensitive Delta, thereby stabilizing this water supply, while also protecting habitats and fish and providing safeguards from earthquakes and extreme climate change effects. This project faces significant hurdles for design, environmental analysis and permitting. The potential conveyance capacity of a single tunnel alternative is currently undetermined. The MWD Board committed to 60 percent of the project funding, although the project's modeling does not provide MWD with 60 percent of the project yield.
- **Achieve Additional Regional Water Conservation Savings:** Conservation is crucial to the IRP Update strategy. MWD and its member agencies continue to work toward achieving water savings consistent with Assembly Bill (AB) 1668 standards for efficient water use, as well as the SB 606 urban water use objectives.
- **Develop Additional Local Water Supplies:** Local member agency supplies are a key to providing regional water supply reliability for the MWD service area. More than half of the water supplies in the MWD service area come from locally developed sources. Its 2015 IRP Update goal for local water supplies is primarily to maintain existing and under-construction supply sources. The 2015 IRP Update target for local supplies reaches 2.4 MAF by 2040. In comparison, local supplies produced about 1.94 MAF in calendar year 2014. This change equates to up to 460,000 AF of additional local supplies being developed during this 25-year period.
- **Identify Recycled Water Opportunities:** The MWD Regional Recycled Water Program includes a partnership with the Sanitation Districts of Los Angeles County to purify and deliver up to 150 mgd, or 168,000 AFY, of water to four regional groundwater basins in Los Angeles and Orange counties through a new regional conveyance system. This supply would increase reliability during droughts and earthquakes.
- **Increase Dry-year Storage Reserves:** In 2019, MWD increased its mandatory emergency storage reserve from 626,000 AF to 750,000 AF based on a seismic resilience and recovery assessment. MWD will re-evaluate this volume in the 2020 IRP Update.

4.4.2 SDCWA Water Supply Diversification Strategy

Future delivery volumes from MWD's two largest supplies are uncertain: Lake Mead levels have only recently recovered from the 2015/2016 lows, and negotiations on the Delta are ongoing. Because of these realities, SDCWA has reduced its risk of MWD supply shortage with strategies, such as developing transfers with agricultural users along the Colorado River with high priority rights and investing in seawater desalination. Figure 4-5 shows the resulting water supply diversification of SDCWA's approach.

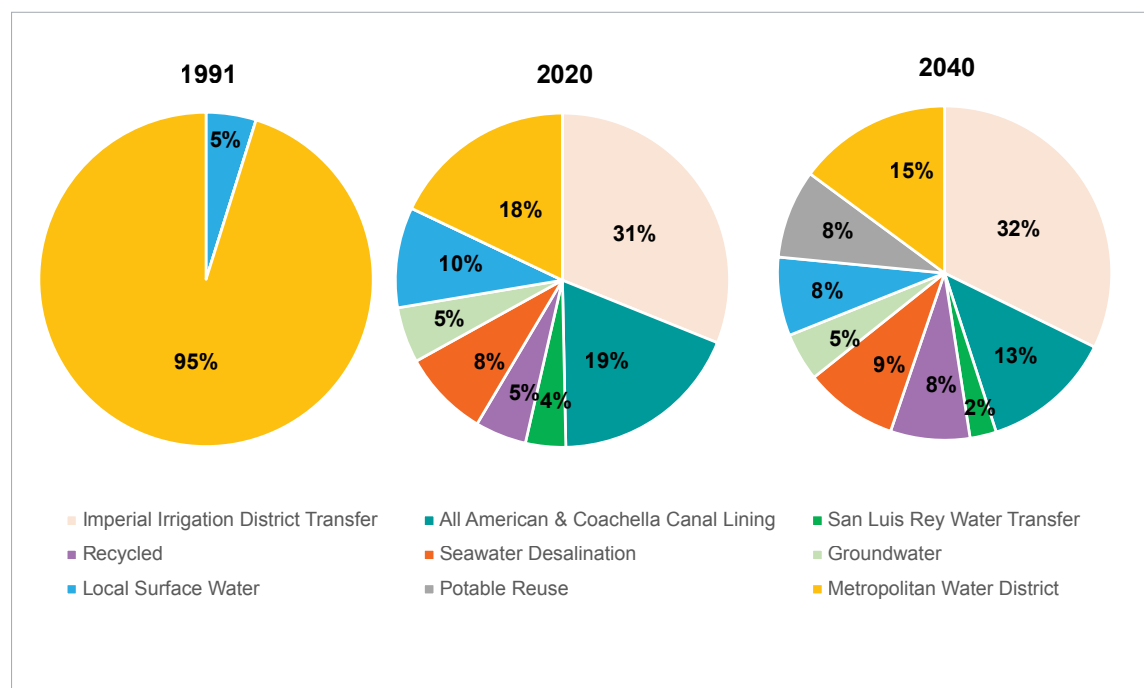


Figure 4-5:
Diversification of
SDCWA Supplies
Over Time

By 2040, almost 8 percent of the SDCWA supply portfolio will be potable reuse, and 9 percent will be seawater desalination, which are drought-proof supplies. SDCWA discusses imported supplies, desalination, agricultural water transfers, local supplies and dry year storage reserves in the 2017 WSCP; these supplies are also described below.

Desalination

SDCWA began acquiring deliveries from the Poseidon Carlsbad Desalination Plant in December 2015. The plant can produce up to 56,000 AF of desalinated water per year, 50,000 AF of which goes to SDCWA. The Plant's production capacity could be increased by 5,600 AF for a total of 61,600 AF in 2025. A new intake facility will be constructed when the Encina Power Station is decommissioned, which should not affect volumetric estimates.

IID Transfers and Canal Linings

SDCWA does not have a Colorado River allocation except for a surplus contract beyond the 4.4 MAF apportionment to California. In 1998, SDCWA signed a 35-year Water Conservation and Transfer Agreement with the IID to secure better reliability of Colorado River supplies; it includes an optional 10-year extension. Imperial Valley farmers voluntarily participate in this program by fallowing land and implementing on-farm conservation projects. SDCWA received 100,000 AF from IID in 2015 and continues to receive increasing amounts up to a maximum of 200,000 AF through 2021. Conserved IID water supplies for the transfer are conveyed (wheeled) through the MWD water distribution system.

The 2003 QSA validated the SDCWA-IID transfer while also introducing measures to lessen the adverse impacts to the Salton Sea. The SWRCB mandated that the IID provide water to the exposed Salton Sea lakebed to help maintain wildlife habitat and air quality. Although this mandate ended in 2017, IID may still be required to supply mitigation flows and may reduce the volume of water transferred to SDCWA.

SDCWA helped to fund the Coachella Canal (CC) lining that was completed in 2006 and the All-American Canal (AAC) lining that was completed in 2010. These lining projects reduce seepage loss; the resulting conserved water volume is delivered to SDCWA and MWD.

The 2003 QSA required 16,000 AF of SDCWA's total contract for 93,700 AFY from the canal lining projects be sent to San Luis Rey Indian water rights settlement parties. The CC project yields 26,000 AF; SDCWA sends 2,000 AF of this yield to San Luis Rey obligations that results in a net 24,000 AF. The AAC project generates 67,700 AF, of which 53,700 AF is delivered to SDCWA. In addition to the total transfer volume of 77,700 AF, the CC lining project may generate 4,850 AF each year. SDCWA assumes that 2,500 AF of this will be available for a total of 80,200 AF of supply from canal lining. Conserved water is wheeled to SDCWA through the MWD water distribution system.

Local Supplies

SDCWA recognizes the need for local water supply development. The SDCWA 2018 Annual Water Supply Report describes plans to increase local supplies from meeting 31 percent of regional water use demands in 2018 to meeting 44 percent of those demands by 2035. This local supply estimate includes recycled water and the San Diego Pure Water Program. To study the development of local resources, SDCWA offers grant funding to its member agencies.

Dry-year and Emergency Storage

The SDCWA WSCP identified in-region and out-of-region reservoirs in the Central Valley that could be used to supply emergency storage and carryover storage during dry conditions. If SDCWA member agencies have difficulty managing drought years with local supplies, SDCWA may pursue additional transfers to fill the carryover storage accounts.

SDCWA has allocations to groundwater banks in the Central Valley secured through the year 2035 and has participated in dry-year transfers in Northern California as described in **Table 4-10**.

Table 4-10 Out-of-Region Carryover Storage and Transfers

Out-of-Region Project	Description
Semitropic Water Bank	SDCWA has a 45,000 AF allocation of storage in Semitropic's Original Water Bank in the Central Valley.
Semitropic-Rosamond Water Bank Authority (SRWBA)	In 2008, SDCWA purchased 20,000 storage units from the SRWBA. Each unit allows SDCWA to store between 3 to 5 AF of water and recover up to 20,000 AF annually.
Butte Water District and Sutter Extension Water District	In 2008, SDCWA purchased 23,077 AF of water from Butte Water District and Sutter Extension Water District. A net volume of 16,117 AF (accounting for conveyance losses) was stored in Semitropic.
Placer County Water Agency	In 2009, SDCWA purchased 20,000 AF of dry-year water supplies from Placer County Water Agency. 15,520 AF were delivered to the SDCWA service area.

The water banking agreements with the Semitropic Water Storage District provide 70,000 AF of storage capacity with an annual input capacity of 9,000 AF and a recovery capacity of approximately 14,000 AF per year.

In-region storage projects help dry-year supply reliability and protect against emergencies, including seismic events that may damage connections with the Colorado River and MWD system. **Table 4-11** lists the SDCWA in-region storage projects.

Table 4-11 In-Region Carryover and Emergency Storage

In-region Project	Description
Olivenhain Dam and Reservoir	The Olivenhain Reservoir was completed in 2003 and has 24,000 AF storage capacity.
Lake Hodges Project	A new connection links Hodges Reservoir to SDCWA-owned Olivenhain Reservoir, from which SDCWA can distribute water throughout the service area. SDCWA can store up to 20,000 AF of water in Hodges Reservoir for emergency use.
San Vicente Dam Raise	San Vicente Dam originally stored up to 90,000 AF. This project increased storage by an additional 157,000 AF and provides SDCWA with approximately 100,000 AF of local storage capacity.
San Vicente Pumping Facilities	The new pumping facilities can move up to 300 mgd from San Vicente Reservoir to the SDCWA delivery system if imported supplies are restricted.
San Vicente Pipeline	The 11-mile pipeline connects San Vicente Reservoir to the SDCWA's Second Aqueduct and can deliver water from the reservoir to member agencies in the central and southern areas of the County.



Olivenhain Dam and Reservoir

4.5 SUMMARY OF WATER SUPPLIES

Table 4-12 presents the current and projected water supplies for the City's service area, assuming average weather conditions or temperatures.

Table 4-12 Future Water Supply for the City

Supplies	Demand and Supplies (AFY)				
	2025	2030	2035	2040	2045
Current and Planned Supply					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	22,015	22,015	22,015	22,015	22,015
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Total Current and Planned Local Supplies	53,088	69,888	129,248	129,248	129,248
Water Supply from SDCWA (purchased water)	149,778	140,660	87,907	94,350	98,816
Total Water Supplies with SDCWA	202,866	210,548	217,155	223,598	228,064

SDCWA water purchases make up the difference between total water demands and local supplies. With local water supplies, SDCWA will continue to provide approximately 43 percent of the City's water demands, assuming average weather conditions or temperatures through year 2045.

SECTION

5

Demand Management Measures

The California Water Conservation Act of 2009 (SB X7-7) requires water agencies to reduce per capita water use demand by 20 percent by the year 2020; this requirement is commonly referred to as “20x2020” within the water industry. In the 2010 UWMP, the City was required to develop a per capita water use baseline, as well as demand management target reductions for 2015 and 2020. For the 2020 UWMP, the City is required to compare 2020 per capita water use with targets that were recalculated in the 2015 UWMP. Water use is typically discussed based on per capita use and is presented in GPCD.

5.1 BASELINE DAILY PER CAPITA WATER USE

In the 2010 UWMP, the City was required to develop a baseline per capita water use. Following DWR requirements, the City estimated a 10-year (1996 to 2005) and a 5-year (2004 to 2008) baseline per capita water use. The baseline per capita water use estimates in the 2010 UWMP were based on preliminary 2010 Census population data. In the 2015 UWMP, these baseline estimates were recalculated with the formal 2010 Census population data by using the DWR Population Tool developed in 2015.

Highlights of Demand Management Measures



- The City has met and exceeded its state-mandated “20x2020” demand reduction target for per capita water use that was set in 2010 and then recalculated in 2015. The City’s 2020 water use target was 142 GPCD. Due to effective conservation and customer drought responses, the City achieved 101 GPCD, exceeding the target by 23 percent.
- The City continues to focus on developing long-term water savings through site surveys, hardware replacement, and irrigation and landscape efficiencies. The City also continues to make strides in educating customers and encouraging San Diegans to adopt and maintain water conservation as a way of life, creating a sustained water ethic.

Table 5-1 presents the adjusted populations and recalculated per capita water use.

Table 5-1 Baseline and Compliance Year Daily Per Capita Water Use

Fiscal Year	Distribution System Population	Annual System Gross Water Use (AFY)	Average Daily Per Capita Water Use (GPCD)
1996	881,119	216,066	219
1997	1,122,784	222,977	177
1998	1,143,362	206,495	161
1999	1,157,759	215,400	166
2000	1,169,843	230,973	176
2001	1,179,015	216,312	164
2002	1,192,637	219,610	164
2003	1,207,261	211,059	156
2004	1,217,481	229,162	168
2005	1,227,114	217,780	158
2006	1,236,521	224,197	162
2007	1,243,005	229,940	165
2008	1,247,563	226,150	162
2010	1,324,226	188,981	127
2015	1,304,114	180,177	123
2020	1,430,489	161,573	101

Note: Population data and per capita water use summarized in the 2015 UWMP.

Table 5-2 presents the adjusted baseline per capita water usage, using the adjusted 2010 Census population data. The adjusted 10-year and 5-year baseline per capita water use figures were estimated at 171 GPCD and 163 GPCD, respectively. (For reference purposes, the 2010 UWMP presented the 10-year and 5-year baseline per capita water use as 168 GPCD and 166 GPCD, respectively.)

Table 5-2 Baseline Periods

Baseline	Parameter	Value	Unit
10-year Baseline Period	Number of years in base period	10	Years
	Year beginning base period range	1996	N/A
	Year ending base period range	2005	N/A
	Per capita water use	171	GPCD
5-year Baseline Period	Number of years in base period	5	Years
	Year beginning base period range	2004	N/A
	Year ending base period range	2008	N/A
	Per capita water use	163	GPCD

Note: Baseline per capita water use was adjusted from the 2010 UWMP in 2015 using updated 2010 Census population data in accordance with DWR requirements. N/A = not applicable

5.2 PER CAPITA WATER USE TARGETS

In year 2005, DWR developed four different technical methods to determine how the 2020 Urban Water Use Target can be set. These technical methods gave water suppliers flexibility in how they established per capita water use targets. SB X7-7 requires urban water suppliers to determine per capita water use targets to compare against actual per capita water use to demonstrate compliance. The targets were established using one of these four different methods:

- **Method 1:** Estimate per capita water use targets by calculating 80 percent of the urban retail water supplier's baseline, using a 10- to 15-year average.
- **Method 2:** Determine per capita daily water using a sum of defined performance standards. This method requires the sum of water use in indoor residential and outside landscaped areas, as well as the 10 percent reduction in CII water use.
- **Method 3:** Calculate 95 percent of the applicable hydrologic regional target as presented in the DWR Guidebook (DWR, 2009); the City is in DWR's South Coast Hydrologic Region Number 4.

- **Method 4:** Estimate water savings obtained through identified practices and subtract them from the baseline annual daily per capita water use. Agencies that use this method must use the prescribed procedures identified by DWR and utilize the Method 4 Calculator.

The City selected Method 3 to establish its 2020 per capita water use target. Under Method 3, the South Coast Hydrologic Region had a year 2020 target of 95 percent of 149 GPCD, which is 142 GPCD.

5.2.1 2020 Target Compliance

In the 2015 UWMP, the City's actual per capita water use met the 2015 interim target. DWR and the City use different methodologies to calculate GPCD. The City's 2020 average per capita water use is also below the 2020 target, set at 142 GPCD in the 2015 UWMP.

Table 5-3 shows the City's compliance with the 2020 interim target. Figure 5-1 presents the City's historical annual production in mgd, per capita demand in GPCD, and the 2015 and 2020 water use targets.

Table 5-3 2020 Compliance Retail Agency or Regional Alliance Only

2020 Target	2020 Actual	Adjustments	Actual as Percentage of Target	In Compliance? Y/N
142 GPCD	101 GPCD	None	71%	Y

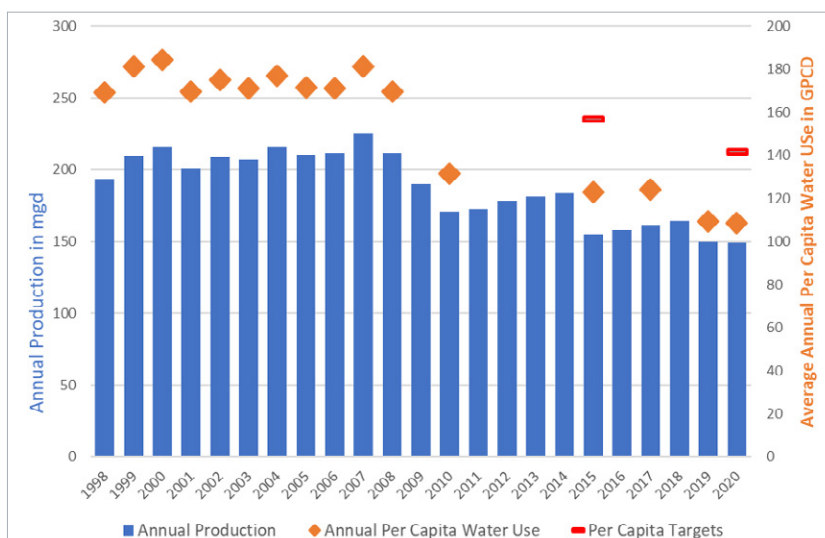


Figure 5-1:
Historical Production, Per Capital Water
Use and Per Capita Targets

The citywide per capita water use is projected to be less than 101 GPCD through year 2045. The residential water use (R-GPCD), which includes indoor and outdoor water use, is projected to be approximately 60 RGPCD through year 2045. State reporting is based on an approximate percentage split to determine indoor and outdoor R-GPCD; this split is approximately 80 percent/20 percent. Based on it, the City is projecting indoor water use to be less than 50 GPCD through year 2045.

At the time of this 2020 UWMP, state regulations may or may not require a distinct reporting of indoor and outdoor water use. See **Section 5.2.2** for additional information on emerging regulations.

5.2.2 Water Conservation Targets Beyond 2020

On May 31, 2018, Governor Brown signed two bills – SB 606 and AB 1668 – that build on the ongoing efforts to “make water conservation a California way of life.” The bills emphasize efficient water use as the most cost-effective way to achieve long term conservation goals, as well as evaluating water supply reliability relative to longer and more intense droughts caused by climate change in California. DWR and SWRCB responded to SB 606 and AB 1668 with recommendations in November 2018 Report (DWR et al., 2018.)

Beginning in November 2023, SB 606 directs water suppliers to annually calculate an urban water use objective based on six components:

1. Indoor residential water use
2. Outdoor residential water use
3. Outdoor CII irrigation
4. Water losses
 - » Variances in water use (5)
 - » A bonus incentive (a credit for potable water reuse) (6)

The six components of the water use objective may be updated by the SWRCB as late as January 2021. Each of these six water use components must reduce/decrease to meet AB 1668-specified efficiency standards by 2025.

Residential Indoor Water Use (R-GPCD)

AB 1668 offers temporary volumetric standards for residential indoor water use. Indoor use is aggregated across the population in an urban water supplier’s service area, not calculated per household. Mandatory reporting of the R-GPCD to the SWRCB began in October 2020; however, the SWRCB may change the following standards by January 1, 2021:

- Until January 1, 2025: 55 R-GPCD
- January 1, 2025 to January 1, 2030: The greater of 52.5 R-GPCD or a standard recommended by the SWRCB and DWR
- Starting January 1, 2030: The greater of 50 R-GPCD or a standard recommended by the SWRCB and DWR

R-GPCD calculation per SWRCB is: (Total Monthly Potable Water Production (TMP) - Commercial Agriculture)*Percent Residential Use (PRU)* Conversion Unit (C)/Population/Days in month.

Residential Outdoor Water Use

AB 1668 notes that standards for outdoor residential water use will be ready for adoption and publication by June 2022. The outdoor water use standard will be based on land cover and climate, and may continue to rely on location-specific reference ETo that is summarized in SB X7-7, as well as the MWELO. AB 1668 notes that DWR will provide urban retail water suppliers with residential irrigable land area data at the parcel level by in early 2021.

Commercial, Institutional and Industrial Water Use

AB 1668 notes that standards for CII water use are in development and will be recommended for adoption by October 1, 2021. SWRCB will adopt the measures on or before June 30, 2022. Agencies will likely be required to implement three procedures:

1. Convert all landscapes that are more than a specified size and currently served by a mixed-meter CII account to dedicated irrigation accounts, either through the installation of a separate landscape meter or the use of equivalent technology.
2. Classify all CII accounts using the North American Industry Classification System (or another similar system). CII subsector water use benchmarks may be developed to help identify CII users with potential efficiency improvements.
3. Conduct water use audits or prepare water management plans for CII accounts over a specified size, volume, or percentage threshold.

Water Loss

Rather than setting a water loss standard, AB 1668 refers to California Water Code Section 10608.34. This regulation defines loss validation actions, as well as references SB 555, which was adopted in 2015 and requires the SWRCB to adopt performance standards for water loss volumes for urban retail water suppliers by July 1, 2020. The 2017 Report suggests the 2020 standards for system water loss will be expressed as a volume per capita or a volume per connection and include calculations for leaks, losses and non-revenue water used for maintenance and public safety.

The SWRCB proposes compliance with the 2020 regulations in the following four phases, which indicates that an actual loss volume will not need to be included in the urban water use objective until 2028:

1. Improved data collection and quality, as needed (2020-2022)
2. Initial implementation (2023-2027)
3. System-wide implementation (2028-2035)
4. Ongoing water loss control (2036 onward)

AB 1668 charges the SWRCB and DWR to recommend appropriate variances for unique water uses by October 1, 2021. Appropriate variances that would

affect the water use objective include:

- Significant use of evaporative coolers
- Significant populations of horses and other livestock
- Significant fluctuations in seasonal populations
- Significant landscaped areas irrigated with recycled water having high levels of total dissolved solids
- Significant use of water for soil compaction and dust control
- Significant use of water to supplement ponds and lakes to sustain wildlife
- Significant use of water to irrigate vegetation for fire protection
- Significant use of water for commercial or noncommercial agricultural use

Bonus Incentive

SB 606 defines a bonus incentive for urban water suppliers that deliver water from a source (namely a groundwater basin or reservoir) that is augmented by potable reuse water.

The bonus incentive serves to increase a suppliers' water use objective by a volume equal to the volume of potable reuse delivered to residential water users and to CII irrigation. The bonus incentive is limited by two potential volumes:

- No more than 15 percent of the supplier's water use objective for any potable reuse water produced at an existing facility
- No more than 10 percent of the supplier's water use objective for any potable reuse water produced at a non-existing facility, e.g. any facility that does not 1) possess a certified environmental impact report on or before January 1, 2019, 2) begin producing and delivering potable reuse water on or before January 1, 2022, or 3) use microfiltration and reverse osmosis technologies to produce the potable reuse water.

Timeline

The City has taken these upcoming standards into account in its water supply planning by including them as assumptions for new growth in the demand

forecasting used in this UWMP. The City will monitor the per capita water use in the context of the SB 606 and AB 1668 standards to ensure that these target reductions are met in the future; the implementation timeline as shown in **Table 5-4** will also be monitored. Formal adoption dates are highlighted.

Table 5-4 Water Use Conservation Implementation Timeline

Date	Action
Recommendations	
January 1, 2021	DWR and SWRCB recommend new standard for indoor residential use.
January 1, 2021	DWR provides area of residential irrigable lands to implement the residential outdoor standards.
October 1, 2021	DWR and SWRCB recommend standards for outdoor residential water use.
October 1, 2021	DWR and SWRCB recommend standards for outdoor irrigation of landscape areas with dedicated irrigation meters, or other means of calculating CII outdoor irrigation use.
October 1, 2021	DWR and SWRCB recommend performance measures for CII water use that includes a CII water use classification system for significant water uses, the thresholds for requirement of a dedicated irrigation meter, and best management practices
October 1, 2021	DWR and SWRCB develop appropriate variances for unique uses and the corresponding thresholds of significance.
October 1, 2021	DWR and SWRCB to develop guidelines that identify how to calculate urban water use objective.
May 30, 2022	DWR and SWRCB to propose standards for 1) outdoor residential water use, and 2) outdoor irrigation of landscape areas with dedicated irrigation meters in connection with CII water use for public comments.
Adoptions	
June 30, 2022	DWR and SWRCB to adopt urban water use standards, CII water use performance measures), and related methodology and guidance.
No date specified, prior to Jun 30, 2022	DWR and SWRCB to adopt guidelines and methodologies for water use objective calculation, and variances.
Submissions/Reporting	
June 1, 2022, and annually thereafter	Urban water suppliers to submit to DWR an annual shortage assessment report (annual water supply and demand assessment)
Nov 1, 2023, and annually thereafter	Each urban retail water supplier shall calculate its urban water use objective no later than November 1, 2023 and November 1 each year thereafter.
Nov 1, 2023, and annually thereafter	Urban water suppliers shall submit annual reports to DWR by November 1, 2023 and by November 1 of each year thereafter on actual urban water use, implementation of CII water use performance measures, and progress towards urban water use objective.
January 1, 2024	Urban water suppliers shall adopt and submit to DWR a supplement to their adopted 2020 UWMPs on implementation of demand management measures to achieve their urban water use objective.
Enforcements	
On or after Nov 1, 2023	SWRCB may issue an informational order on water production, water use, and water conservation to urban retail water suppliers not meeting their water use objective.
On or after Nov 1, 2024	SWRCB may issue a written warning to urban retail water suppliers not meeting their water use objective
On or after Nov 1, 2025	SWRCB may issue a conservation order to urban retail water suppliers not meeting their water use objective.
January 1, 2027	Urban retail water suppliers should achieve urban water use objectives by Jan 1, 2027.

5.3 CITY'S WATER CONSERVATION PROGRAM

San Diego suffers from cyclical droughts due to its semiarid climate and low levels of rainfall. Understanding this pattern, San Diego adopted a Water Conservation Program in 1985 to address water scarcity concerns. In addition, since 1998 the City has progressively updated its municipal code requiring increased drought-level actions. To further water conservation in San Diego, ordinances were drafted to mandate year-round permanent water restrictions and the replacement of non-compliant WUE devices upon resale of a property.

The Water Conservation Section within the PUD has been the steward of community assistance and education regarding WUE programs and education. Innovative programs such as the turf replacement, rain harvesting, and residential/commercial surveys have provided customers direct participation in water conservation efforts.

Permanent water waste prohibitions and drought alert restrictions are discussed in detail in **Appendix E - Water Shortage Contingency Plan**. SDMC 67.38 describes the permanent Water Waste restriction and various levels of drought response requiring progressively increased levels of water use restrictions (see **Section 6.9.1**). SDMC 147.04 describes the retrofit upon resale requiring non-compliant WUE device be replaced.

5.4 DROUGHT RESPONSE

The City has expanded its public outreach and education campaign by rebranding its successful 2007 to 2011 No Time to Waste, No Water to Waste drought communications program to San Diegans *Waste No Water* in 2012. As the City emerged from the 2007 to 2009 drought, the Mayor called for an end to mandatory water use restrictions associated with the Drought Alert status in the City's Emergency Water Regulations. With this directive, an adjustment in messaging through the San Diegans *Waste No Water* campaign affirmed: (1) San Diegans were effective

in their efforts to reduce water use; and (2) this was a collective effort, recognizing that San Diegans came together to achieve necessary conservation. This shift allowed messaging to focus on a long-term behavior change and the development of a sustained water use ethic to help prolong the savings realized from 2009 to 2011. In 2012, the San Diegans *Waste No Water* campaign was refocused to increase awareness of drought, its severity and the City's enforcement activities. Its objectives focused on:

- Educating residents about the state-mandated water use restrictions and the enforcement actions of the City
- Repositioning conservation from a penalty to a long-term way of life
- Reinforcing actions citizens could take to minimize drought impacts

In alignment with the ongoing San Diegans *Waste No Water* messages of the City, complementary drought response messages from the SDCWA's When In Drought campaign and the state's Californians Don't Waste campaign were developed. Collectively, all three campaigns communicated the drought message to San Diegans.

The San Diegans' *Waste No Water* campaign has demonstrated the City's sustained leadership and its commitment to promoting the use of water in the most efficient ways possible to meet the near-term and long-term water use reduction goals. The community's overall response to the message has been positive. The following sections address the basic, traditional and unique methods employed by the City to increase awareness of the drought, water use restrictions and water conservation.

5.4.1 Basic Public Education and Outreach Methods

From 2009-2011 and again beginning in July 2015-April 2017, the City implemented mandatory water use restrictions and employed the following methods to spread the word about the restrictions to their customers while engaging residents to participate directly in water conservation efforts:

- Bill inserts were provided to customers in water bills reminding them of the mandatory water use restrictions.
- Campaign posters and materials were placed at all the City's PUD office counters.
- Billboards throughout the City focused on communicating limits on watering days, watering at the right time of the day, and fixing leaks.
- *Waste No Water* banners were rotated through the City's recreation centers.
- May "Water Awareness Month" was filled with classes, events and activities, such as: plant fairs at local nurseries; water conservation story hours at public libraries and bookstores; City-sponsored California Friendly Landscape classes; and exhibits at various street fairs and community events. The month culminated with an awards ceremony at the Council Chamber held for the winners of the annual Kids' Water Conservation Poster Contest. The Mayor and City Council members were present and took part in the recognition event. Additionally, a special event at the IMAX in Balboa Park was held to view the Film Contest winners for the year.
- Presentations were delivered by the City to community, professional, and civic and business groups. Staffed information booths were at many community events, including the Del Mar Fair, San Diego Fall and Spring Home and Garden Shows, December Nights, Earth Fair, numerous street fairs, and several events held at the Water Conservation Garden at Cuyamaca College (The Garden).
- Press releases included the campaign slogan and website reference, wastenowater.org.

5.4.2 Traditional and Specific Public Education and Outreach Methods

To address recent droughts over the last two decades, the City mounted an advertising campaign highlighting the mandatory water use restrictions that targeted single-family homeowners, adults over 35 years old, and people with interests in landscaping and home improvement. The City purchased and strategically placed advertising in the following media:

- English-language print ads in The San Diego Union-Tribune and San Diego Magazine, and Spanish-language print ads in El Latino/Enlace and La Prensa.
- Internet advertising on City websites, KFMB and The San Diego Union-Tribune websites. Public service announcements on City TV, Cox Media's 16 cable channels, KFMB TV and local radio stations.

5.4.3 Unique Public Education and Outreach Methods

- To reach the public, the City pursued a variety of unique advertising strategies with high visibility at key community locations in San Diego. These efforts, which sought to embed the "*Waste No Water*" ethic in neighborhoods and social networks, helped develop a social norm that would be continually reinforced by the community members with each other. These efforts included:
 - In partnership with the Metropolitan Transit System, the City wrapped trolleys and busses in water conservation messaging. On trolleys, this advertising ran on all three trolley lines: Orange, Blue and Green lines; it attracted the attention of daily trolley riders and passers-by, including large crowds attending community events, such as the AWWA convention, Comic-Con, and Padres and Charger games. On busses, routes were chosen for bus wraps to reach all council districts. Similarly, they attracted positive attention.
 - Multiple billboards were posted throughout the City.
 - Posters were strategically placed at entrances to major shopping malls in the City.
 - The conservation message was promoted through proven community-based social marketing techniques, such as:
 - » Social media posts that helped build a community norm via peer to peer stories and ads
 - » Web videos showing conservation commitments from various local leaders and community groups
 - » A poster and film contest that engaged youth

- » Smart phone app that communicated key messages and allowed residents to easily report observed water waste
- » The City worked with local large universities and student sustainability clubs to promote the conservation message.
- » Grass replacement incentives and staffing for the residential survey program funding was boosted by the City in 2015 to help customers achieve significant water use reductions. The incentive programs experienced record participation as residents tried to do their part to reach water conservation targets.

5.4.4 Metering

The City is fully metered and currently implements an Advanced Metering Infrastructure Program to help improve meter accuracy and reduce apparent system losses; a sub-metering ordinance for multi-family residences is also in effect, which is discussed in more detail in **Section 5.6**.

5.4.5 Volumetric Water Use Pricing

The City uses a tiered rate structure that has four main categories: 1) Single-family Domestic Customers; 2) Other Domestic Customers; 3) CII Customers; and 4) Temporary Construction and Irrigation Customers. For each category, the bill is based on a monthly meter base fee, plus a fee based on the amount of water used. Refer to the City's Cost of Service Study for updated rates.

5.4.6 Distribution System Real Loss

The City is a member of the California Urban Water Conservation Council and performs annual water audits as required by the organization. The City's ongoing water main replacement program also helps to reduce system water loss by replacing leaking mains and water services on the City side of the customer meter. For detailed information regarding distribution system losses, see **Section 4 –Water Supplies**.

5.4.7 Water Conservation Program Coordination

The Water Conservation Section within PUD researches, develops, implements and administers the City's Water Conservation Program. This program was enacted via the San Diego City Council in 1985. The Water Conservation Section collaborates with regional and state agencies and boards to review upcoming legislation and develop innovative water conservation programs and concepts for customers. The Section also participates in professional organizations, nonprofit groups and a regional Water Conservation Garden.

5.5 PLANNED IMPLEMENTATION TO ACHIEVE WATER USE TARGETS

Over the past 30 years, the City has achieved substantial water savings by:

- Developing innovative, customer-oriented water conservation programs
- Creating policies and ordinances designed to promote and mandate water conservation
- Implementing comprehensive public information and education campaigns that foster behavior change and a shared water conservation ethic
- The Water Conservation Section has been the primary steward in the City's efforts to comply with its 2015 and 2020 per capita water use targets, as well as the mandatory water use reductions enacted in response to the state-mandated conservation efforts that began in 2015. Compliance with the 20x2020 requirements are discussed in detail in **Section 5.2.1, 2020 Target Compliance**. To meet established goals, the following sub-sections detail specifics about the Section's ongoing water conservation offerings, initiatives and ordinances.

5.5.1 Residential Water Survey Programs

Enacted in 1992, the Residential Water Survey Program offers residential customers a complimentary water use survey of their home, both inside and outside. Upon a customer's request, a water surveyor visits a customer's home for approximately one hour to: review

how to read the meter with the customer; measure the flows of fixtures such as sinks, showers and toilets; identify leaks; and provide water conservation tips. If the property is landscaped, the surveyor reviews the irrigation system and landscape plant material and then recommends ways to reduce water usage and increase water use efficiency. It is estimated that a typical household might reduce water consumption by 40 to 60 gpd by implementing the water use efficiency suggestions made during the residential survey.

5.5.2 Commercial Landscape Survey Programs

The City's Commercial Landscape Survey Program (CLSP) has proven to be an outstanding water conservation program targeted to commercial properties across San Diego. Qualifying CII properties with more than one acre of landscaped property are eligible for the free-of-charge program. The CLSP survey provides suggestions on ways to increase irrigation system efficiency and recommends technologies and methods that promote conservation. Through it, the customer is provided a final report from the City, which includes water budgets (water use targets) that can be used as a guide for setting landscape watering times at the property. Many of these properties can expect water savings between 20 to 40 percent.

5.5.3 Water Conservation Rebate Program

The Water Conservation Section is funded by multiple sources. Typical funding sources include California voter-approved propositions, regional funds via MWD and SDCWA, as well as the Transportation and Stormwater Department's Storm Water Pollution Prevention Program. These sources fund cash rebates to water customers—residential and commercial—for indoor and outdoor water conservation projects and devices. The goal is to conserve potable water while also reducing pollutant-laden dry weather runoff into sensitive receiving waters.

The rebate program is run “in-house” by water conservation staff and offers services including: onsite consultation to customers; application and rebate

processing; and, customer support for landscape projects. The program offers customers rebates for weather-based irrigation controllers (WBIC), Pressure Reducing Valves (PRV), Rain Barrels, Rain Gutters, Downspout Redirects, Graywater Systems and turf replacement. SoCal Water\$mart is the MWD funded program that rebates additional devices, such as washing machines, low flow toilets (LFT) and water-efficient irrigation equipment. Free mulch from the Miramar Greenery is also available to City customers. Descriptions for each rebate type are detailed below; 2020 participation is summarized in **Table 5-5**.

Table 5-5 2020 Totals for Conservation Rebate Programs

Rebate Program	# of Projects
Weather-based Irrigation Controller (WBIC)	65
Pressure Regulating (Valve)	42
Turf Replacement Projects	89
Turf Replacement Projects	164

- **WBIC:** A WBIC is an irrigation control device that automatically adjusts watering schedules in response to the current weather conditions.
- **PRV:** This device is installed in most homes and regulates the water pressure coming into the home from the City water supply. The controlled pressure ensures WUE devices work properly and minimizes pipe leaks and water waste.
- **Graywater Systems:** Graywater includes, but is not limited to, wastewater from bathtubs, showers, bathroom wash bins, clothing washing machines and laundry tubs. Customers are offered a rebate for two types of graywater systems: non-permitted, which utilizes only a single domestic clothes washing machine in a single-family, duplex or townhouse residential dwelling; and permitted, which utilizes non-clothing machine graywater, such as bathtubs, showers and bathroom washbasins.

- **Rain Barrels:** Rain barrels are large containers that capture stormwater from the roof that would otherwise be lost as runoff. They are a simple, efficient, low-cost method to reduce the amount of stormwater runoff from properties. Estimates indicate that a quarter-inch of rain falling on an average home yields more than 200 gallons of water.
- **Rain Gutters:** Rain gutters are used on homes to divert rainwater away from properties in an effort to protect roofs and foundations from rainwater accumulation. In addition, gutters are necessary for diverting rainwater into a green space, landscape or rain barrel.
- **Downspout Redirects:** A downspout is a pipe that carries rainwater from the rain gutter to a storm drain; a redirect conveys that same water to a landscaped area, bioswale or rain barrel rather than entering the storm drain.
- **Landscape Transformation Program or the Turf replacement Projects:** This program incentivizes customers to replace a traditional grass lawn and its high-water use irrigation with low water use plants and low flow irrigation devices. Lawns are estimated to require 44 gallons of water per square foot per year. There are various funding sources for this rebate including the City's Transportation and Storm Water Department, MWD and SDCWA. Funding Ranges from \$1.25 to \$5.00 per sq/ft.
- **SoCal Water\$mart:** This program is funded by MWD and provides rebates as described in later in **Section 5.5.8** of this chapter. Customers apply directly to SoCal Water\$mart to obtain a rebate.
- **Free Mulch from Miramar Greenery:** The Miramar Landfill and Greenery offers products, such as compost, mulch and woodchips. Mulch is a reliable, cost-effective product for water retention, erosion control and weed suppression. Free mulch is available to San Diego residents with proof of residency. Wood chips and compost are also available for a fee. These products are used in conjunction with the Turf Replacement Program.

5.5.4 Water-Wise Business Survey

A Water-Wise Business Survey is offered free of charge to all CII customers in the City. The survey provides a customized review of indoor water usage, including an onsite visit to identify areas where water use efficiencies can be achieved. Recommendations can help business customers use water more efficiently and save energy.

5.5.5 Water Waste Investigations

City staff respond to water waste complaints generated by residents throughout the City. During increased drought levels, staff patrol for instances of violations of the Mandatory Water Waste Prohibitions. Most complaints are due to over-irrigation running off the property or violations of water waste prohibitions. To resolve water waste issues, City staff contact the property owner or manager and work to eliminate water waste issues and associated hazards by issuing a Notice of Violation. If the water waste violation is not corrected, Administrative Citations can be issued as the next enforcement step, carrying fines of up to \$1,000. Water waste complaints can vary drastically. If over irrigation reaches the storm drain, Code Enforcement Officers from the Storm Water Enforcement Team will respond. A typical example would be a broken sprinkler head, which can waste up to 20 gpm and flood adjacent properties and streets. A typical water waste complaint is estimated to save 60 gpd after it is addressed and corrected. Residents can report water waste through the Get It Done App (discussed in **Section 5.5.7**) and website.

5.5.6 Water Conserving Municipal Codes – Plumbing Retrofit Upon Re-sale

A Memorandum Decision was issued on March 28, 1991, by U.S. District Court Judge Rudi Brewster to conclude a lawsuit filed by the U.S. Government, the State of California and the Sierra Club against the City (Civil Case #88- 1101-B) over violations of the Clean Water Act. The plaintiffs established evidence that the City had been in violation of the Clean Water Act due to insufficient control of pretreatment of sewage by industrial customers, sewage spills, and the absence

of secondary treatment at the PLWTP. Judge Brewster imposed a \$3 million penalty against the City, \$500,000 of which was to be payable to the U.S. Treasury upon entry of the judgment. The remaining \$2.5 million was to be paid to the U.S. Treasury on January 1, 1992, unless the City opted to act on an “optional credit project” to offset \$2.5 million of the \$3 million fine, which it pursued. The credit project consisted of: permanent water conservation codes, including the installation of water conserving plumbing fixtures in new construction; a plumbing retrofit upon re-sale and bathroom alteration code; and a rebate program that offered financial incentives to residential and commercial customers for installing ultra-low flush toilets (ULFTs), low-flush urinals, low-flow showerheads, faucet aerators and reverse osmosis systems with automatic shut-off valves. Funding was set at a level of \$500,000 or more per year for five years.

By March 14, 1991, the City had enacted an ordinance that required the installation of ULFTs in all new construction. In addition, the City Council requested that the City Manager develop a separate ordinance requiring the replacement of existing toilets with ULFTs when remodeling a bathroom or upon change of property ownership. More than 138,000 certificates of compliance with San Diego Municipal Code 147.04 have been filed since the beginning of the plumbing retrofit program.

5.5.7 Get It Done App for iPhone® & Android®

The City’s Get It Done App, available for iPhones and Androids, allows users to report water waste by taking a photo of the problem or concern and forwarding it online to the City for review and investigation if needed. It also gives users direct access on demand to online information about the City’s water use restrictions, rebate programs and other resources.

5.5.8 SoCal Water\$mart Rebates

The MWD and its member agencies, including the SDCWA, offer a limited number of rebates each year on various devices, including: high-efficiency toilets; high-efficiency clothes washers; smart irrigation controllers or WBICs; rotating sprinkler nozzles; air-cooled ice machines; cooling tower conductivity controllers; and waterless urinals. Funds for these rebates are limited. SoCal Water\$mart also offered turf replacement rebates. Many City customers participated in both the SoCal Water\$mart rebate and the City’s grass replacement rebate program to combine the incentives for their landscape conversion projects.

5.5.9 Current Customer Contests

Water Conservation Kids’ Poster Contest

Held each year by the City, the Kids’ Poster Contest provides a focal point for teachers to talk with their students about the importance of using water wisely, and it gives thousands of students an opportunity to illustrate meaningful water conservation and recycled water messages by creating original artwork. All students who enter the contest receive a certificate of participation. Nineteen winners receive prizes and their artwork is featured in a calendar, on the City’s website, and at various public venues, including the San Diego County Fair.

WaterSmart Landscape Contest

The City participates annually in the regional Water Agency California Friendly Landscape Contest. This annual competition rewards water-efficient landscapes created by various participating member water agencies. The Best in District winner receives a \$250 gift certificate to a local nursery at the award ceremony held at the Garden.

Student Education

Besides educating students through the poster contest, the City applies additional methods to educate students in San Diego, Coronado and Imperial Beach. In partnership with SDCWA, students have access to the following: a DVD titled “Be

Water Smart”; “Water Supply” and “Water Cycle” posters; water quality testing kits for high school classroom use; “Splashlab,” a self-contained mobile lab that provides students with a hands-on science experience; and two theater programs, “Waterology” and “H2O, Where Did You Go?”

Another student education program is the City’s summertime Junior Lifeguard program, which provides a fun and safe aquatic education course for San Diego youth. The program emphasizes developing confidence and promotes mental and physical fitness, along with respect for others and the coastal environment. In cooperation with “Think Blue San Diego,” the City participated in two, one-day events that were dedicated to promoting environmental awareness. More than 1,000 Junior Guards cycled through seven booths each day and participated in educational activities regarding recycling, watershed/water pollution awareness and water conservation. At the end of the session, each participant received a backpack containing additional information supporting the important messages delivered throughout the day.

The City also funds school assemblies with Ms. Smarty-Plants™. Ms. Smarty-Plants™ is the student educator at The Garden, a state-of-the-art demonstration garden that operates as an educational center for San Diego County residents, and hosts events, festivals, plant sales, and classes. The Garden also offers a beautiful collection of California Friendly Landscaping and other water-wise gardening techniques. It spans a 4.5-acre site and includes multiple educational exhibits, a 350-seat amphitheater, more than 360 trees and 100,000 square feet of water-wise landscaping. The Ms. Smarty-Plants presentation educates students about the fascinating adaptations of drought-tolerant plants and water efficient irrigation. The students also learn that they can make a difference by applying the conservation action steps Ms. Smarty-Plants™ teaches.

Ms. Smarty-Plants™ is just one part of the education efforts at The Garden. The Garden encourages homeowners, developers and landscape

professionals to use California Friendly Landscaping, efficient irrigation design and appropriate maintenance that can reduce outdoor water use by 30 to 70 percent. It is a non-profit corporation focusing on education and is supported partially by earned income and contributions of six member agencies, including the City. Nearly half of The Garden’s 45,000 annual visitors and participants who register at the gate are residents of the City. The City contributes to The Garden through an annual assessment and sends delegates to The Garden Board of Directors’ committees.

5.5.10 General Plan Housing Element

The General Plan’s Housing Element is the City’s housing plan. The City, along with all California cities and counties, is required to adequately plan to meet the housing needs of everyone in the community and to update its plan every eight years. The City is currently updating the Housing Element for the next eight-year planning period (2021-2029); this is its sixth update and is referred to as the 6th Cycle. In March 2020, the City announced the release of the Draft 6th Cycle Housing Element that incorporates the input gathered from a wide range of San Diegans.

At the current level, the plan incorporates “Objective Q” that focuses on supporting policies and programs that aim to reduce energy and resource consumption in existing homes. Policy HE-Q.2 promotes and incentivizes energy and resource conservation among homeowners, property owners and managers, and renters. This includes the support and implementation of the UWMP and Conservation Program to develop a comprehensive water storage program and promote voluntary water conservation and retrofitting. Objective Q stresses the importance of promoting programs administered by partner organizations, such as public agencies and nonprofit partners. The City will continue to support and promote programs such as those of MWD and SDCWA. The City’s PUD provides ratepayers with rebates for implementing numerous water conservation practices on their properties; these rebate programs should be promoted by other public-facing departments when possible.

5.6 SUB-METERING ORDINANCE

The City enacted an ordinance in June 1, 2010 that requires sub-meters to be installed in every new multi-unit building with at least three units, and sub-meters to be installed whenever an existing multi-unit building with at least three units replaces its entire interior potable water supply piping.

Metering each unit separately promotes a better understanding of water use, as residents are billed based on their actual consumption, rather than paying a fixed amount or a rate based on square footage. As such, billing residents individually may provide financial incentives for residents of multi-family buildings to conserve water.

5.7 MONITORING FUTURE WATER CONSERVATION SAVINGS

The City uses tools to track future water conservation savings to ensure compliance with current and future targets. One such tool is the water conservation evaluation tool developed by the Alliance for Water Efficiency (AWE). The City and SDCWA uses this tool to project water savings by demand side management measures. The water conservation tool is a rolling calculation of water conservation data from 1995 to 2020. The tool is designed to calculate the water saving of devices and projects over a specified life span, which is typically 10 years. Once the data is entered by the user there are multiple viewing options to review historical, present and future savings. The tool can also calculate cost savings of billed usage. **Figure 5-2** shows a screen shot of this tool's user interface.

AWE CONSERVATION TRACKING TOOL: COMMON ASSUMPTIONS WORKSHEET

ENTER COMMON ASSUMPTIONS: Manage Scenarios

	2014	2020	2030	2040	2050
Analysis Start Year	2014	2020	2030	2040	2050
Service Area Population	350,000	365,000	365,000	380,000	395,000
Service Area Population in 1990	300,000				
Peak-Season Start Date (month/day)	31-May				
Peak-Season End Date (month/day)	31-Oct				
Nominal Interest Rate	6.00%				
Inflation Rate	3.00%				
Year in which to Denominate Costs & Benefits	2014				
Persons Per Household - SF	2.25				
Persons Per Household - MF	1.50				
Full Bathrooms Per Household - SF	1.75				
Half Bathrooms Per Household - SF	0.75				
Full Bathrooms Per Household - MF	1.00				
Half Bathrooms Per Household - MF	0.25				
SF Housing Units Built before 1994	100,000				
MF Housing Units Built before 1994	50,000				
Reference ET (inches/yr)	57.33				
Avg. Annual Rainfall (inches/yr)	40.24				

CHOOSE VOLUME UNITS:

Water Volume Units

☒ Million Gallons (MG)

☐ Acre-Feet (AF)

☐ Million Cubic Meters (MCM)

Flow Units Will Be: MGD

[Return to Navigation Sheet](#)
[Report Error](#)

SELECT CUSTOMER CLASSES:

Select Water User Classes

Class Names: Single Family, Multi Family, Residential, CII, Commercial, Industrial, Institutional, Irrigation, Other

Selected Classes: Single Family, Multi Family, CII, Irrigation

Buttons: Move Up, Move Down, Delete, OK, Cancel

ENTER UTILITY RATE INFORMATION:

Water User Classes in Model	Customer Utility Rates (2014 Dollars)				Nominal Rate of Increase			
	Water Rates (\$/Thou Gal)	Sewer Rates (\$/Thou Gal)	Electric Rates (\$/KWh)	Gas Rates (\$/Therm)	Water Rates (%/Yr)	Sewer Rates (%/Yr)	Electric Rates (%/Yr)	Gas Rates (%/Yr)
Single Family	\$3.50	\$0.70	\$0.15	\$1.50	3.0%	3.0%	3.3%	3.3%
Multi Family	\$3.50	\$0.70	\$0.15	\$1.50	3.0%	3.0%	3.3%	3.3%
CII	\$3.50	\$0.70	\$0.15	\$1.50	3.0%	3.0%	3.3%	3.3%
Irrigation	\$3.00	\$0.70	\$0.15	\$1.50	3.0%	3.0%	3.3%	3.3%

Figure 5-2:
Example of the City's AWE Conservation Tracking Tool

SECTION

6

Water Supply Reliability Assessment

As required by the Act, a water supply reliability assessment must compare future water demands and water supplies under multiple hydrologic conditions. It is based on historical runoff in the state with data ranging from 1901 to 2020. The reliability analysis assumes any of the historical hydrologic sequences could reoccur in the future. A review of the historical hydrology was used to identify a normal year (2019), single driest year (2014) and 5 -year driest period (2013-2017) based on annual runoff in California. These assumptions were used in the reliability analysis and the drought risk assessment.

In each reliability analysis, demand factors are used to alter average period water demands for a specific hydrological year. For example, demands tend to be higher in dry/hot years (resulting in a factor greater than 1), and tend to be lower in wet/cool years (resulting in a factor less than 1). Demand factors are defined in the sections that follow.

Figure 6-1 shows the inches of annual runoff in California from Water Year (WY) 1901 through WY2020.

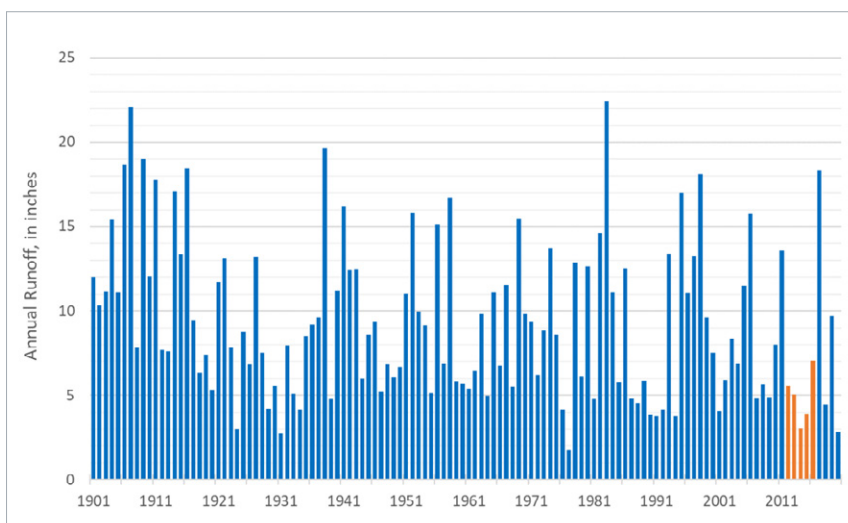


Figure 6-1:
Annual (WY) California Runoff in Inches

Highlights of the Water Supply Reliability Assessment



Sutherland Reservoir

- Hydrologic conditions in any year affect both the City's demand for water and the supply available from each of its sources. For example, in hot, dry years, demands tend to be higher because landscaping needs more water, and more homes and business need to be cooled, but water supply may be lower in those years if there is not as much rainfall.
- The City has projected the availability of each of its supplies under different hydrologic year types and compared those to its projected future water demands. The City's investment in a diverse water supply portfolio will result in a total water supply that meets its demands from 2025 to 2045 in all of the scenarios.
- The WSCP, included as Appendix E, describes how the City will respond when faced with water shortage conditions resulting from a drought, regulatory action, emergency or other type of events. The WSCP also includes defined actions the City will take to reduce demand over six shortage levels, from 10 percent to more than 50 percent demand reductions.

Since 1901, annual runoff has varied from a low of 1.7 inches to a high of 22.4 inches, with an average of 9.3 inches. In the 2020 UWMP, the historical years representing the multi-year dry period have been updated for WY2013-WY2017 (highlighted in orange in **Figure 6-1**) based on the low average runoff during this period; this more recent period represents per capita and overall demands more consistently with current conditions as compared to the 120 year period reflected in the table. The normal year is represented by WY2019 as defined in the recent Water Demand Forecast study. The single-dry year is represented by WY2014, the driest of the years in the multi-year drought period.

6.1 NORMAL YEAR WATER DEMAND TO SUPPLY COMPARISON

The normal hydrologic year of 2019 yields a demand factor of 1.0, which is applied to average future demands (see **Section 3 – Historical and Projected Water Use**). Future local surface water supplies are estimated by using the median supply from 1948 to 2020 as assumed in **Section 4**. This conservatively does not include extractions from Hodges Reservoir that could take place in the future. Groundwater storage will vary with rainfall, as that is the primary groundwater recharge mechanism. Because the forecasted groundwater supply is small compared to storage available, it is assumed to be constant in the reliability analysis. Recycled water supplies are assumed to be independent of hydrology, and thus do not vary. **Table 6-1** presents the comparison of demands and supplies at five-year increments through 2045.

Table 6-1 Normal Year Demand vs. Supply for the City

Demands/Supplies	Demand and Supplies (AFY)				
	2025	2030	2035	2040	2045
Water Demand (with wholesale and conservation) ¹	202,865	210,547	217,156	223,598	228,065
Local Water Supplies					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	22,015	22,015	22,015	22,015	22,015
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-total Local Supplies	53,088	69,888	129,248	129,248	129,248
Water Supply from SDCWA (purchased water)	149,778	140,660	87,907	94,350	98,816
Total City Water Supplies	202,865	210,547	217,156	223,598	228,065
Estimated Water Shortages	0	0	0	0	0

¹ Includes consumptive use (retail and wholesale), NRW, conservation, and non-potable recycled water demands.

6.2 SINGLE DRY YEAR WATER DEMAND TO SUPPLY COMPARISON

The dry hydrologic WY2014 corresponds to an increased demand factor of 1.036. Table 6-2 presents the comparison of demands and supplies at five-year increments to 2045 with this condition.

Table 6-2 Single-Dry Year Demand vs. Supply for the City

Demands/Supplies	Demand and Supplies (AFY)				
	2025	2030	2035	2040	2045
Water Demand (with wholesale and conservation)¹	210,169	218,128	224,973	231,648	236,274
Local Water Supplies					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	23,858	23,858	23,858	23,858	23,858
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-total Local Supplies	54,931	71,731	131,091	131,091	131,091
Water Supply from SDCWA (purchased water)	155,238	146,397	93,882	100,557	105,183
Total City Water Supplies	210,169	218,128	224,973	231,648	236,274
Estimated Water Shortages	0	0	0	0	0

¹ Includes consumptive use (retail and wholesale), NRW, conservation, and non-potable recycled water demands.

Recycled and groundwater supplies are assumed to remain constant. Future local surface water supplies in the single dry year are estimated by using the supply from 2014. SDCWA assumes it will be able to deliver all the regional, supplemental water needed by its member agencies during this single-year drought.

6.3 MULTIPLE DRY YEAR WATER DEMAND TO SUPPLY COMPARISON

The water demand factors for historical hydrologic years 2013 through 2017 (1.00, 1.036, 1.036, 1.024 and 1.024, respectively) are applied to the multiple dry year analysis. **Table 6-3** presents the sequential five-year dry year hydrology comparison of demands and supplies at five-year increments through 2045.

Table 6-3 Multiple Dry Year Demand vs Supply for City

Demands/Supplies		Demand and Supplies (AFY)			
Dry Year 1 (2013)	2025	2030	2035	2040	2045
Water Demand (with wholesale and conservation) ¹	202,865	210,547	217,156	223,598	228,065
Local Water Supplies					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	20,963	20,963	20,963	20,963	20,963
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-Total Local Supplies	52,036	68,836	128,196	128,196	128,196
Water Supply from SDCWA (purchased water)	150,830	141,712	88,959	95,402	99,868
Total City Water Supplies	202,865	210,547	217,156	223,598	228,065
Estimated Water Shortages	0	0	0	0	0
Dry Year 2 (2014)	2025	2030	2035	2040	2045
Water Demand (with wholesale and conservation) ¹	210,169	218,128	224,973	231,648	236,274
Local Water Supplies					
Recycled Water (City service area only, non potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	23,858	23,858	23,858	23,858	23,858
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-Total Local Supplies	47,537	64,337	131,091	131,091	131,091
Water Supply from SDCWA (purchased water)	155,238	146,397	93,881	100,556	105,183
Total City Water Supplies	210,169	218,128	224,973	231,648	236,274
Estimated Water Shortages	0	0	0	0	0

Table 6-3 Multiple-Dry Year Demand vs Supply for City, continued

Demands/Supplies		Demand and Supplies (AFY)				
Dry Year 3 (2015)	2025	2030	2035	2040	2045	
Water Demand (with wholesale and conservation) ¹	210,169	218,128	224,973	231,648	236,274	
Local Water Supplies						
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773	
Pure Water Phase 1	16,800	33,600	33,600	33,600	33,600	
Pure Water Phase 2			59,360	59,360	59,360	
Local Surface Supply	6,280	6,280	6,280	6,280	6,280	
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400	
Groundwater	100	100	100	100	100	
Sub-Total Local Supplies	37,353	54,153	113,513	113,513	113,513	
Water Supply from SDCWA (purchased water)	172,817	163,975	111,460	118,135	122,762	
Total City Water Supplies	210,169	218,128	224,973	231,648	236,274	
Estimated Water Shortages	0	0	0	0	0	
Dry Year 4 (2016)	2025	2030	2035	2040	2045	
Water Demand (with wholesale and conservation) ¹	207,735	215,601	222,367	228,964	233,538	
Local Water Supplies						
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773	
Pure Water Phase 1	16,800	33,600	33,600	33,600	33,600	
Pure Water Phase 2			59,360	59,360	59,360	
Local Surface Supply	16,464	16,464	16,464	16,464	16,464	
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400	
Groundwater	100	100	100	100	100	
Sub-Total Local Supplies	49,620	66,420	125,780	125,780	125,780	
Water Supply from SDCWA (purchased water)	158,114	149,181	96,586	103,184	107,757	
Total City Water Supplies	207,735	215,601	222,367	228,964	233,538	
Estimated Water Shortages	0	0	0	0	0	

Table 6-3 Multiple-Dry Year Demand vs Supply for City, continued

Demands/Supplies		Demand and Supplies (AFY)			
Dry Year 5 (2017)	2025	2030	2035	2040	2045
Water Demand (with wholesale and conservation) ¹	207,735	215,601	222,367	228,964	233,538
Local Water Supplies					
Recycled Water (City service area only, non-potable)	13,773	13,773	13,773	13,773	13,773
Pure Water Phase 1	16,800	33,600	33,600	33,600	33,600
Pure Water Phase 2			59,360	59,360	59,360
Local Surface Supply	18,547	18,547	18,547	18,547	18,547
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Groundwater	100	100	100	100	100
Sub-Total Local Supplies	49,620	66,420	125,780	125,780	125,780
Water Supply from SDCWA (purchased water)	158,114	149,181	96,586	103,184	107,757
Total City Water Supplies	207,735	215,601	222,367	228,964	233,538
Estimated Water Shortages	0	0	0	0	0

¹ Includes consumptive use (retail and wholesale), NRW, conservation and non-potable recycled water demands.

6.4 FACTORS AFFECTING SUPPLY RELIABILITY

As required by the Act, a UWMP must summarize the factors that can reduce water supply reliability. For the City, these factors depend on the supply source and can include hydrologic variability (e.g., prolonged droughts), regulatory issues, legal constraints, water quality and climate change.

For example, during the recent drought from 2012 to 2016, MWD instituted its allocation plan to its member agencies; this plan resulted in an overall cut in its deliveries by 15 percent that began on July 1, 2015. As MWD provides about half of the region's water supply to the SDCWA, including water that the City purchases, this decision had significant impacts on the City. Also, on July 1, 2015, the City declared a Drought Response Level 2: Drought Alert Condition to comply with a state mandate, requiring the City to reduce its water usage by 16 percent. The Emergency Water Regulations were

amended by the City on June 29, 2015 to satisfy the SWRCB's Emergency Conservation Regulations that took effect on May 18, 2015. On January 26, 2017, SDCWA declared the end to drought conditions and supply reductions in the San Diego region. The City continues to review its Emergency Water Regulations considering the SWRCB's Emergency Conservation Regulations and will address any deficiencies as information becomes available.

These variables are discussed by water source in the following sub-sections.

6.4.1 Colorado River

The Colorado River Basin supports a unique group of native fish species, many of which are distinct to this river. As many of these fish species are threatened or endangered, the Colorado River Basin is protected under the U.S. Endangered Species Act (ESA) that was established to address the needs of threatened and endangered wildlife. To work toward the recovery

of species listed under the ESA, the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) was created to balance conservation of native species with water use in the river. Deliveries from the Colorado River guaranteed under QSA could be reduced by mandated LCR MSCP flows.

Although the QSA assures California up to 75 years of stability in Colorado River water supplies and provides for a large water transfer between the IID and SDCWA, the availability of imported water is affected by weather patterns in the region. Currently, the Colorado River Basin is experiencing the driest conditions in 500 years, and as a result, its water supply is becoming less reliable. Recent extended droughts have resulted in record lows in Colorado River water levels; several reservoirs along the Colorado River Basin are below their storage capacity. Based on data collected by Reclamation, Lake Mead has experienced significant declines in elevation. The level of Lake Mead dropped to 1,077 feet at the end of June 2018, which is the lowest level since the lake was filled in 1935. Early in 2020, lake levels increased due to a wet spring, but have since decreased to a level of 1,084 feet in August 2020. Should Lake Mead levels drop below 1000-foot elevation, water deliveries to SDCWA would be reduced in accordance with the developed DCP.

6.4.2 State Water Project

Water supply from the SWP has also been significantly reduced because of the most recent California drought and environmental regulations protecting the Delta. Political and environmental concerns may also limit imported water supplies from Northern California. In 2007, the SWP pumps were shut down to protect the Delta smelt population. Biological opinions for the SWP and federal Central Valley Project (CVP) by USFWS and NMFS have become increasingly restrictive over the years. SWP exports have decreased since 2005 when the 2009 federal biological opinions went into effect, restricting operations. Without a permanent fix in the Delta, standards that restrict flow and exports are expected to be the status quo.

In response to these uncertainties, federal and state stakeholders developed the Bay-Delta Conservation Plan (BDCP). This comprehensive program sought to accomplish two main objectives: (1) stabilize environmental impacts by restoring the Delta; and (2) improve conveyance, so that exports of water through the Delta do not impact fisheries, thereby reducing the need to shut down pumps that send water to Southern California. Federal and state environmental agencies could not agree on the construction of the underground tunnels associated with the conveyance improvements included in the BDCP. Additionally, lawsuits were threatened by environmental groups. Combined, these challenges caused the BDCP process to end.

A new process to stabilize the Delta, called the California WaterFix, was initiated by previous California Governor Brown. Now referred to as the Delta Conveyance Project, this infrastructure project has a reduced footprint, calling for one underground tunnel instead of the original two-tunnel design. It is currently moving through the environmental permitting process. As of August 2020, studies have estimated that construction costs will be approximately \$12 billion.

6.4.3 Regional SDCWA Supplies

To mitigate the impacts of imported water variability and vulnerability, the SDCWA has made great strides developing alternative water supplies. These supplies are summarized in **Section 4 – System Water Supplies**. Alternative water supplies include regional and local supply projects and continuation of demand side management programs. In December 2015, following completion of the Claude “Bud” Lewis Carlsbad Desalination Plant, SDCWA added desalinated sea water to its supply portfolio. The development of new regional and local water supplies in San Diego County will result in decreased reliance on imported water from the Colorado River and Delta, and thus increase reliability for this region.

The SDCWA, as a regional water supplier to the City, develops water transfers and seawater desalination supplies to provide regional benefit.

6.4.4 Local Water Supplies

The City is doing its part to reduce reliance on imported water by implementing additional local water supply projects and continuing to invest in demand side management programs. The City's main source of local water currently comes from the capture of runoff from rainfall in an extensive surface reservoir system. It currently produces limited groundwater from the Santee-El Monte Basin and has invested in studies that increase the region's use of recycled water and a potential potable reuse system. San Pasqual Valley also has active groundwater production wells; these are not currently calculated in water demand or supply calculations because much of the water use specific to this resource is not metered.

Surface Water

Local rainfall and imported water are known to change storage and water availability in surface reservoirs. In very dry years, the local surface water from these reservoirs produces about 3,000 AFY, while in very wet years the supply can increase to 50,000 AFY. Additionally, the Division of Safety of Dam regulations limits the ability to maximize capture of local runoff due to requirements to maintain water levels at certain PUD reservoirs.

Groundwater

The City recognizes that the groundwater projects in the San Diego region are limited by several factors, including degraded water quality and the lack of storage capacity and availability of groundwater recharge. However, the City is committed to protecting its groundwater resources in all basins and to preserving its established Pueblo rights throughout the San Diego River Basin. The timing in bringing these groundwater resources into production will be paramount to their utilization.

Recycled Water

The City's current recycled water is for non-potable uses only and it does not plan to expand non-potable reuse within its jurisdictional boundaries beyond its current 13,650 AFY. To maximize utilization of the available recycled water, the City's Recycled Water

Study recommended potable reuse using purified recycled water. The purified water would be stored within City reservoirs and then treated along with the other waters these reservoirs hold and delivered as potable water. Based on this strategy, Pure Water San Diego is the City's phased, multi-year program that will provide 83 mgd of San Diego's water supply locally by the end of 2035. This program will use proven water purification technology to clean recycled water to produce safe, high-quality drinking water. In comparison to projected rising costs of imported water, it offers a cost-effective investment for San Diego's water needs and will provide a reliable, sustainable water supply.

6.5 COST OF FUTURE WATER SUPPLIES

In addition to reliability concerns, the increasing cost of imported water is another challenge for the City. Imported water is expensive because of the energy required to transport water from its source and the continual need to maintain and improve infrastructure. During times of drought, the cost of imported water continues to rise, typically at a higher pace than other source because drought makes this limited resource even more limited and there's more competition/demand for it.

As described earlier in this document, most of the City's water is purchased from the SDCWA, which purchases a large portion of that water from MWD. From 2007 to 2013, MWD experienced a 12 percent annual average increase in water rates. In the future, it is expected that imported water costs will continue to increase above rates of inflation. Most of the cost increase is associated with the cost for the Delta Conveyance Project and other programs MWD is expected to implement to improve reliability. As a result, SDCWA's untreated water rates are expected to double within roughly the next 20 years.

In comparison, the projected cost of the City's planned and potential local water supply projects, including the Pure Water San Diego Program, is expected to be less than the projected cost of SDCWA supplied water.

6.6 WATER QUALITY

Local source water quality is generally very good. Of the City's reservoirs, water quality challenges are limited to Hodges Reservoir, which include algal productivity and eutrophication, and PUD is currently reviewing options to improve conditions. However, all local water supplies are combined and treated at the City's water treatment plants where state-of-the-art treatment processes have been implemented and all drinking water undergoes extensive monitoring and testing. At each of its three water treatment plants, the City has consistently met health-based drinking water standards set by the EPA and the SWRCB Division of Drinking Water.

Imported water from MWD and SDCWA can have high amounts of salts and minerals, or TDS. While this higher TDS in imported water is still within safe drinking water standards, it can affect the City's recycled water system and residential appliances/devices (e.g., hot water heaters and faucets). Additionally, some landscaping and crops that are irrigated with water high in TDS can also be degraded.

6.7 SEISMIC RISKS

Seismic impacts to the City's water supply are evaluated on a regional scale, as seismic events along the San Andreas and San Jacinto fault systems could limit imported supplies. Additionally, on a local scale, seismic events on the Elsinore, La Nacion and Rose Canyon faults could damage City infrastructure.

This seismic analysis is summarized from an internal City study that evaluated regional seismic risks. City actions in response to a seismic event are summarized for each area and reflect actions included in **Section 5** of the City's 2018 Hazard Mitigation Plan, the 2018 San Diego County Operational Area Emergency Operations Plan, the City's 1973 Emergency Water Storage Policy (Council Policy 400-04), and the City's WSCP water shortage levels.

6.7.1 Metropolitan Water District

Portions of MWD's CRA are located near the San Andreas and San Jacinto faults; major seismic events on these faults could cut off Colorado River supplies to MWD and SDCWA for an extended period of time. Seismic events along the San Andreas or San Jacinto fault zones could also damage SWP California Aqueduct facilities.

MWD evaluated potential damage to the SWP California Aqueduct and the CRA from a major (magnitude [M] 7.8) seismic event (termed "Shakeout") on the San Andreas Fault. After a large seismic event, MWD may limit supplies to member agencies. MWD resolved to increase its emergency storage objective from 630,000 AF to 750,000 AF based on the anticipated performance of three water system components during the Shakeout scenario:

- **California and CRA Outage**

The Shakeout produced: a 12- to 24-month outage of the East Branch of the California Aqueduct; a 6- to 12-month outage of the West Branch of the California Aqueduct; and a 2- to 6-month outage of the CRA until 80 percent of CRA capacity could be recovered. Bringing the CRA back to full capacity could take three to five years.

- **Potential Maximum Reductions in Member Agency Retail Water Demand**

MWD estimated that 30 percent of all retail demand is directed toward outdoor uses. MWD combined this estimate with a 2017 Public Policy Institute of California (PPIC) report to resolve that its member agencies would be able to reduce retail demands by 25 to 35 percent following a seismic event. The City should assume that during a Shakeout scenario, it would be required to reduce demands by 25 to 35 percent through additional conservation actions.

- **Reductions to Member Agency Local Supplies**

MWD estimated a 6- and 12-month aggregated loss of 10 to 20 percent of local production following a seismic event.

The MWD evaluation indicates that as a SDCWA member agency, the City should be prepared to reduce its demands by 25 to 35 percent. A mandatory demand reduction proposed by MWD would mimic the impacts of required water use reduction during a drought.

The City can rely on work they have done towards Goal 4, Objective 4.A of their Hazard Mitigation Plan if required for an MWD supply outage. Action 4.A.4 supports water conservation policies and programs to enforce water use restrictions. These include municipal code enforcement and other restrictions on outdoor water use and indoor practices to mitigate the effects of severe weather and drought.

6.7.2 San Diego County Water Authority

The 2013 SDCWA Master Plan Update summarized the potential degree of damage to its pipelines and the amount of time required to restore services after a natural disaster. A 1993 report evaluated system vulnerabilities to the most probable seismic event (MPE) and maximum credible seismic event (MCE). The MPE is defined as the largest event with a 10 percent chance of occurrence over the next 50 years, while the MCE is the largest event judged to be possible given geologic criteria, such as relationships between fault length, fault displacement and slip rate.

Impacts to the City would be greatest with a major seismic event on the Elsinore Fault Zone: all five SDCWA pipelines cross the Elsinore Fault zone and a major event on the Second Aqueduct (Pipelines 3, 4 and 5) has the potential to cut off treated and/or untreated water from SDCWA to the City for one to three months. The predicted failure from the most probable event (MPE, M 7.0) and maximum credible event (MCE, M 7.5) on the Elsinore Fault equate to estimated repair times that range from:

- 38 to 40 days for Pipeline 4
- 50 to 54 days for Pipeline 3
- 78 to 86 days for Pipeline 5

SDCWA is currently in the process of updating its vulnerability assessment.

Damage from a regional earthquake to imported supply is mitigated by major investments in emergency storage made by SDCWA. SDCWA's Emergency Storage Project (ESP) includes emergency surface water storage (90,100 AF) and new distribution facilities to allow continued water service to its member agencies during a prolonged regional interruption. The ESP facilities can be used to deliver emergency water supply during two- and six-month imported water supply interruptions, or any other emergency situation where SDCWA has insufficient water available to supply at least 75 percent of the total demand of its service area or any portion of the service area.

The CDP would also help mitigate SDCWA water shortages if deliveries from MWD are reduced. However, the plant may also be susceptible to a seismic event. Studies estimated that partial flows could be restored in one week to one month, and full capacity would require up to six months of repairs, if CDP sustained damage from the MCE on the Rose Canyon Fault. Conveyance and distribution damage caused by seismic activity would take one week to three months to repair. The CDP has the capacity to produce up to 56,000 AFY (50,000 AFY of this total is owned by SDCWA and the remaining 6,000 AFY is owned by Vallecitos Water District and Carlsbad Municipal Water District through uniform contracts with SDCWA). An outage at the CDP due to a major (M>7) seismic activity may result in no supply being available from the CDP. The likelihood of seismic events disrupting both the Elsinore Fault (which would impact imported water deliveries) and the Rose Canyon Fault (which could impact CDP deliveries) at the same time is extremely small.

The City should be prepared to have only 75 percent of its net demands on SDCWA available for a two- to six-month period.

The City could rely on Action 4.A.4 in the Hazard Mitigation Plan to enhance water conservation policies and programs to enforce water use restrictions if SDCWA supplies are decreased. Additionally, the City could rely on the emergency water storage created per the December 27, 1973 City of San Diego Council Policy 400-04 (Emergency Water Storage Policy, Appendix F of the UWMP). The emergency water supply could provide water to the City's water treatment facilities if the supply of imported water is interrupted. The reservoir management policy mandates that the City store sufficient untreated water in active, available storage to meet six-tenths of the normal

annual (7.2 months) City and its contractees' water demand requirements, exclusive of conservation. Active available storage is the portion of water that is above the lowest usable outlet of each reservoir. This policy applies to the following reservoirs: MWD's Lake Skinner in Riverside County, San Vicente, El Capitan, Lower Otay, Murray and Miramar. The active available storage will include any water in the San Vicente Reservoir stored to the account of SDCWA or MWD but will not include any water stored at El Capitan Reservoir by the Helix Irrigation District. The active available storage shall also include 60 percent of the active, available storage in the MWD's Lake Skinner Reservoir.

6.7.3 City of San Diego

A 2019 Water Supply Vulnerability Assessment by Woodard and Curran identified local areas prone to ground shaking, liquefaction, fault offset and landslides for a set of five earthquake scenarios. The 2017 report estimated the length of pipe in each hazard zone, as well as tanks, pumping plants, outlet towers and water treatment plants. The assessment also identified the number of pump stations expected to lose power soon after the earthquake. **Table 6-4** presents the time required to restore water service given the City's available work crews.

Table 6-4 San Diego Earthquake Scenarios

Scenario Earthquake	Stabilize System (Days)	Restore Backbone Pipes (Days)	Restore Distribution Pipes (Days)	Complete all Pipe Repairs (Days)
Rose Canyon (M 6.5)	1.7	20	3	74
Silver Strand (M 6.5)	1.0	13	20	43
Rose Canyon / Silver Strand (M 7.2)	2.0	24	43	91
La Nacion (M 6.6)	1.4	18	29	62

The longest duration water outages were found in the Mission Bay and Point Loma areas. The Rose Canyon Fault is the biggest potential seismic threat to the City due to its proximity to the large population centers; a M 6.9 seismic event on this fault has a recurrence every 1,000 years. During this event, major supply pipeline ruptures along the Rose Canyon Fault are expected to leave the coastal communities west of the fault and south of La Jolla Shores (La Jolla, Mission Bay, Point Loma, Downtown and Coronado Island areas) completely without water for weeks to months. Fault rupture is also expected to sever all three major interceptor pipelines delivering wastewater to the Point Loma Wastewater Treatment plant. A 2020 report estimates that major water storage infrastructure, including local dams, reservoirs and aqueducts will remain in service due to recent seismic retrofits and distance away from the anticipated fault rupture.

Geotechnical reports, included as appendices to the Pure Water San Diego North City Project Final Environmental Impact Report, assessed seismic risks and impacts to the Pure Water Phase 1 facilities. These facilities include NCWRP, the Advanced Water Purification (AWP) Facility, the Morena Pump Station, and conveyance pipelines. Morena Pump Station and southern portions of the pipeline alignment lie within the Rose Canyon Fault Zone. Repair durations for conveyance and distribution pipelines after seismic damage will take one week to two to three months to repair. Damage to the North City Plant and AWP Facility due to an MCE on the Rose Canyon fault is assumed to take one week to one month to restore partial flows and up to six months to restore full capacity (MWDOC 2019).

NCWRP produces 62 percent of the City's recycled water. A major ($M > 6.9$) earthquake along the Rose Canyon Fault could lead to damage to the City's Metro System pipeline that feeds NCWRP and the non-potable system. Damage could produce up to a 62 percent loss in treatment and conveyance to recycled water customers.

Another complicating factor is that the threat of fire ignitions is also high following an earthquake, and efficient water conveyance to meet fire-fighting requirements would be necessary.

To supply residents with water, the City could rely on work done toward Goal 3, Objective 3.A of the Hazard Mitigation Plan. Action 3.A.5 advocates that the City maintains critical water and wastewater services to the region through effective critical infrastructure management to include the use of multi-source power distribution systems, installation and maintenance of permanent alternate power generators at all plants and pumping stations, and the further development of redundancies in the data transmission of control systems. Additionally, Appendix A of the 2018 San Diego County Operational Area Emergency Operations Plan indicates that until water systems are restored, the County (City in this case) may supply water to the population by establishing temporary water connections, rerouting water, conservation and distribution of bottled water. The City may also initiate the highest shortage level in their WSCP, Shortage Level 6: Drought Emergency Condition. This condition is implemented when a water shortage emergency requires that demand be reduced greater than 50 percent to ensure sufficient supplies. The City could rely on Goal 5, Objective 5.A in the Hazard Mitigation Plan for firefighting. Action 5.A.3 intends to enhance the means of providing water for firefighting when service is disrupted because of an earthquake.

6.8 CLIMATE CHANGE

Climate change impacts are expected to manifest in multiple areas of the environment, society and the economy. The City is conducting multiple studies related to climate change vulnerabilities and looking at the specific impacts to local runoff, local demands, imported supply from Northern California and the Colorado River, and sea level rise. This risk is one reason why investments in local supply are a high priority for the City.

While climate change impacts can be expected, the extent to which the hydroclimatic changes will impact water resources elements (rain, snow, runoff, snowpack, snow melt, evaporation, evapotranspiration deep percolation and water demands) is uncertain. A common approach to forecast the new water resources balance under climate change conditions in the future is the use of global circulation models (GCMs) outputs, downscaled to local geographic scales. Potential climate change impacts on City supplies are based on forecasts from the Coupled Model Intercomparison Project Phase 5 (CMIP5) GCM runs.

GCMs, which are used for future projections of hydroclimatic variables, provide estimates of precipitation and temperature globally at a coarse spatial resolution. A critical input to the GCMs is the concentration of greenhouse gases (GHGs) in the atmosphere, which is a highly uncertain variable as it is related to the global society's response to the climate change threat to deviate from historical level of use of fossil fuels. GCMs use scenarios of future GHG concentrations, measured as Representative Concentration Pathways (RCPs). RCPs portray updated values of radiative forcing (the difference between the incoming energy from sunlight and radiation back to space). RCP 8.5 corresponds to the pathway with the highest GHG emissions, roughly similar to a continuation of the current path of global emission increases. Current carbon dioxide emission trends are closely reflected by the RCP 8.5 scenario. Further, many leading climate scientists believe that carbon emissions are trending higher than RCP 8.5.

There is consensus among these models that California will continue warming over the 21st century. Precipitation patterns are spatially and temporally more complex than warming patterns. There is more uncertainty among these predictions, with some models showing the state becoming wetter and others showing the state becoming drier, particularly in Southern California and along the Colorado River watersheds. Variability in precipitation projections is, in part, explained by the inherent natural variability in Southern California precipitation, which has the highest coefficient of variation in the nation.

Notably, conditions with increased precipitation could result in more volatile precipitation patterns in which drought frequency and duration increases. Warming temperatures also reduce snowpack, and its function to serve as above-ground water storage reservoirs. As a consequence, the timing of water availability may change, as shown later in **Figure 6-2**, even if total overall precipitation is unchanged. Warming temperatures also increase evaporation from reservoirs and moisture loss from soils, resulting in reductions in water supply.

6.8.1 Local Reservoir Inflow

The climate change impact analysis focuses on three climate change scenarios selected from the CMIP5 ensemble based on their relative impact compared to existing conditions: MIROC, CNRM and CSIRO for RCP 8.5. To cover the range of potential impacts, these three representative GCMs were selected for review purposes:

1. CNRM: Moderately reduced supply from the CRA, but minimal change in SWP supply
2. MIROC: Moderately reduced supply from SWP supply, but slightly improved supply from CRA
3. CSIRO: Significantly reduced supply from CRA and moderately reduced SWP supplies

The selection of CMIP5 RCP 8.5 models was specifically made to ensure a uniform climate impact across the watersheds and to show large concurrent impacts on the CRA and SWP supplies. The hybrid delta method, an approach used to adjust historical flows using the

time series behavior and spatial correlations from the gridded T and P observations in GCM models, was used to create hydrology sequences that include climate impacts.

A similar approach was used in the Reclamation's San Diego Watershed Basin Study that used the same CMIP5 climate model projections and ensembled a large group of model projections, spanning two assumed representative concentration pathways (RCP4.5 and RCP8.5) (i.e. greenhouse gas emissions). Both studies focused on projected changes in streamflow, however, the Basin Study used more general temporal assumptions (annual and seasonal instead of monthly). That said, the studies show similar results for impact on SWP imported water supplies.

Figure 6-2 shows the climate change impacts over a 96-year period with a 2050 planning horizon for the three GCMs. The total monthly reservoir inflow represents the sum from Morena, Barrett, Lower Otay, El Capitan, San Vicente, Murray, Sutherland, Hodges and Miramar.

The CSIRO and MIROC projections show lower total inflow of historical conditions throughout the year and the duration of peak flows is also lower relative to the historical, although the January MIROC flows are slightly higher than the observed historical inflows. CNRM predictions show higher inflows than historical conditions during the winter season, December through March.

Table 6-5 shows the average annual reservoir inflows for the 2050 model.

Table 6-5 Average Annual Inflows to City Reservoirs

Climate Change Scenario	Average Annual Inflow (AF)
Historical	94,800
CNRM	105,600
CSIRO	76,800
MIROC	60,000

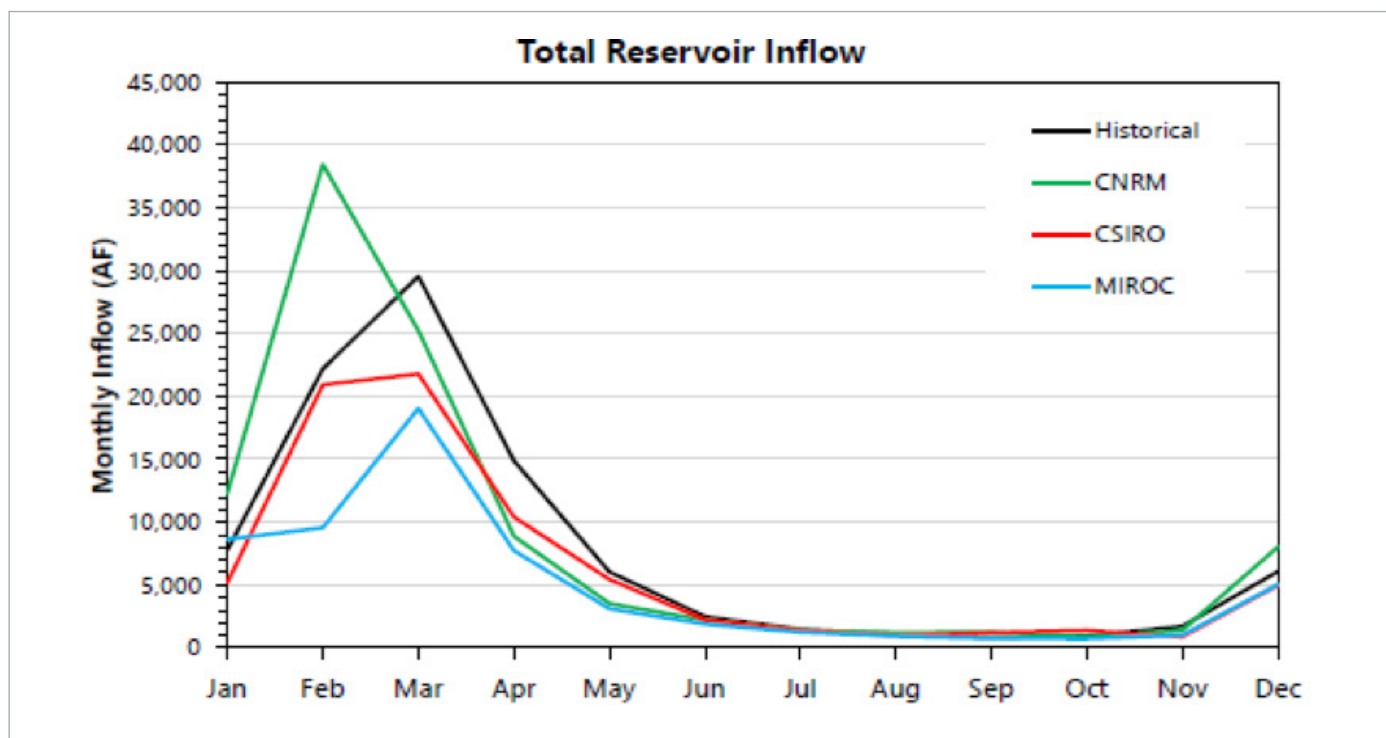


Figure 6-2:
Monthly Total Reservoir Inflow in 2050 Climate Change Model

6.8.2 Demands and Recycled Water

As droughts in California increase in frequency and intensity due to climate change, water suppliers will need to implement stronger demand management strategies to combat potential shortages. Demand management of indoor water use, including the use of mandated conservation practices, decreases wastewater flows within the urban water cycle that impacts potable reuse water production and quality (CUWA 2017). These declines cause a reduction in treatment plant costs and energy usage; it can also alter the cost-effectiveness of recycled water infrastructure by changing factors like flow and treatment capacity thresholds that were considered in the system's design. In addition, as the City moves to expand potable reuse water infrastructure, reduced wastewater flows per capita can potentially lead to underutilized assets. Declining wastewater flows can also lead to more concentrated wastewater streams, leading to increased TDS, nitrogen and organics concentrations, as well as the associated higher costs for treatment.

Additionally, climate change will result in rising sea levels. Coastal communities in the City's service area currently experience high salinity wastewater flows due to the infiltration of groundwater with high saline content. Further sea level rise could potentially increase TDS concentrations along coastal sewers even more. While wastewater flows diverted to the NCWRP for Pure Water Phase I will not be affected, the City will need to consider the impacts of high salinity wastewater for Phase II of Pure Water San Diego.

6.8.3 SDCWA Impacts

SDCWA began acquiring deliveries from the CDP in December 2015. The plant can produce up to 56,000 AFY, of which 50,000 AFY goes to SDCWA. SDCWA has a long-term agreement to purchase water from the CDP. Although seawater desalination is a drought-resistant supply source, rising sea levels will impact the current intake location – potentially requiring relocation of the intake, expensive new construction and more stringent standards for plant effluent.

Rising sea levels and corresponding high tides along with storm surge may threaten the CDP's shoreline location and cause interruptions to output if the plant is closed to prevent flooding. Additionally, the cost of the desalinated seawater may increase as structural protective barriers are built to restrict the encroachment of seawater. Sea level rise may also move critical marine habitat boundaries closer to the plant intakes, initiating environmental restrictions that may hinder seawater processing and limit production volumes.

6.8.4 MWD Colorado River Supply

The projected impact of droughts due to climate change on the Colorado River supplies are based on analysis conducted by Reclamation in the 2012 Colorado River Basin Study. The study used an ensemble of 112 downscaled GCM projections to estimate natural flow in the Upper Colorado River, as measured at Lees Ferry. Over the next 50 years, streamflow is projected to decrease by approximately 9 percent along with a projected increase in both drought frequency and duration as compared to the observed historical and paleo-based scenarios. The range of this result varies amongst the individual GCM projections. Droughts lasting five or more years are projected to occur 50 percent of the time over the next 50 years. Projected changes in climate and hydrologic processes include continued warming across the Basin, a trend towards drying, increased evapotranspiration, and decreased snowpack as a higher percentage of precipitation falls due to rain rather than snow and warmer temperatures causing earlier melt.

Climate change conditions increase the probability that Lake Mead elevations fall below the dead pool elevation of 1,000 feet, at which point the allocation of water has not been determined in either the 2007 operating guidelines or the DCP. This undefined hydrologic shortage is calculated based on correlations from Reclamation's Colorado River Simulation System model results to assign additional shortage to California proportional to its respective river allocation of 4.4 MAF, or 48 percent of the total lower basin

delivery. MWD takes 6 percent of the California shortage according to its 550,000 AF allocation within the state. The hydrologic shortage volume is calculated as a function of Lake Mead elevation and inflows into Lake Powell. **Figure 6-3** shows the probability of Lake Mead levels in 2050 and plots the elevations at which changes in DCP allocations take effect.

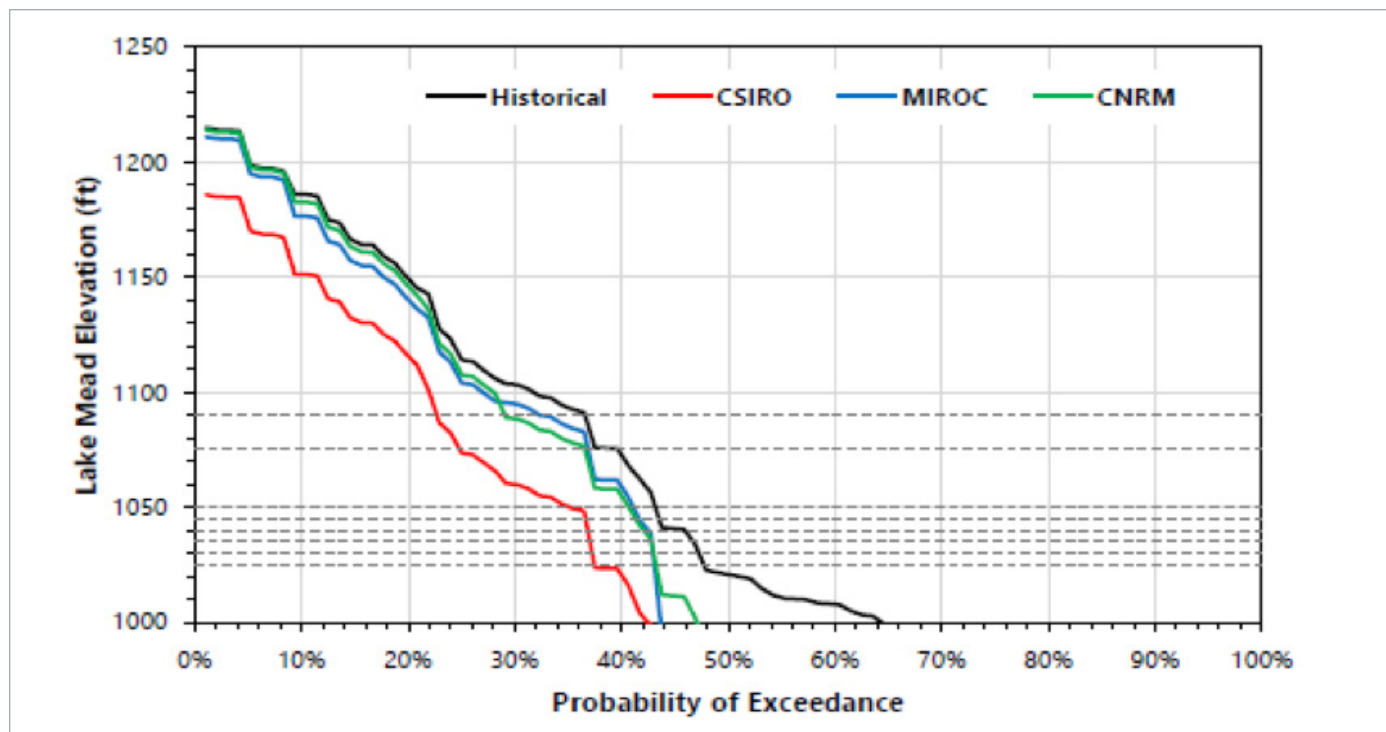


Figure 6-3:
Probability Analysis of Climate Change Impact to 2050 Lake Mead Levels

A repeat of historical conditions would cause the maximum DCP allocation of 88,000 AF to be realized with a 52 percent probability; the probability of a hydrologic shortage being imposed as Mead levels fall below 1,000 feet is 36 percent. The CNRM and MIROC climate projections show a 56 percent probability that the maximum DCP allocation of 88,000 AF is enforced and a similar probability of having a hydrologic shortage. CSIRO conditions are the driest on the Colorado River, as well as the SWP, and show a 62 percent change of the maximum DCP allocation and a 58 percent chance that Lake Mead reaches dead pool conditions.

Once Lake Mead drops below the elevation thresholds and supply is reduced, the availability of imported supply to the City will be affected. The conditions of

Lake Mead and the state water supply system are monitored carefully to ensure City planning includes the latest conditions.

6.8.5 MWD State Water Project Supply

The climate change impacts on exports to the SWP through the Harvey O. Banks Pumping Plant are calibrated to published values from the Sacramento-San Joaquin Basin Study (SSJRBS) (Reclamation, 2016.) The SSJRBS models the effects of six individual CMIP5 climate projections on seasonal precipitation, temperature and tropical Pacific Ocean sea surface temperatures; it utilizes the CalLite planning model (DWR) to forecast impacts to SWP and CVP Delta exports. The six defined CMIP5 climate forecasts published in the SSJRBS reflect a subset of the 10

GCMs (from the CMIP5 ensemble) selected by the DWR Climate Change Technical Advisory Group (CCTAG) to be used in California climate studies. Climate results from the suite of six models in the SSJRBS show that both temperature and annual precipitation will increase.

The GFDL and CSIRO projections show a minor decrease in annual average exports, while all other six models show an average increase in exports. **Figure 6-4** shows the impacts of climate change conditions by 2050 on SWP Table A deliveries for the three GCMs selected for the study (all under CMIP5 and RCP 8.5).

Average SWP Table A deliveries to MWD could change by as much as 160,000 AF between historical and CSIRO conditions. The high degree of variability in these deliveries could have severe implications for SDCWA.

The SWP water is pumped from the Delta, which is susceptible to impacts from rising sea levels.

Sea level rise in the Delta will result in the need for additional freshwater releases to mitigate increased salinity intrusion into the Delta estuary and to maintain the quality of drinking water to communities that use this water source as their municipal water supply. Rising sea levels also increase the risk of Delta levee failure. Multiple climate models for various emission scenarios project a range of potential sea level increases, from 11 centimeters to 72 centimeters, by the 2070 to 2099 period (Cloern et al., 2011). In addition, new measurements for California's Fourth Assessment found subsidence rates for some of the levees in the Delta of about 0.4 to 0.8 inches per year. This subsidence compounds the risk that sea-level rise and storms could cause overtopping and failure of the levees. At this calculated rate of subsidence, the levees may fail to meet the federal levee height standard (1.5 feet freeboard above 100-year flood level) between 2050 to 2080, depending on the rate of sea-level rise. Any interruption in the SWP would have a negative impact on imported water availability for the City.

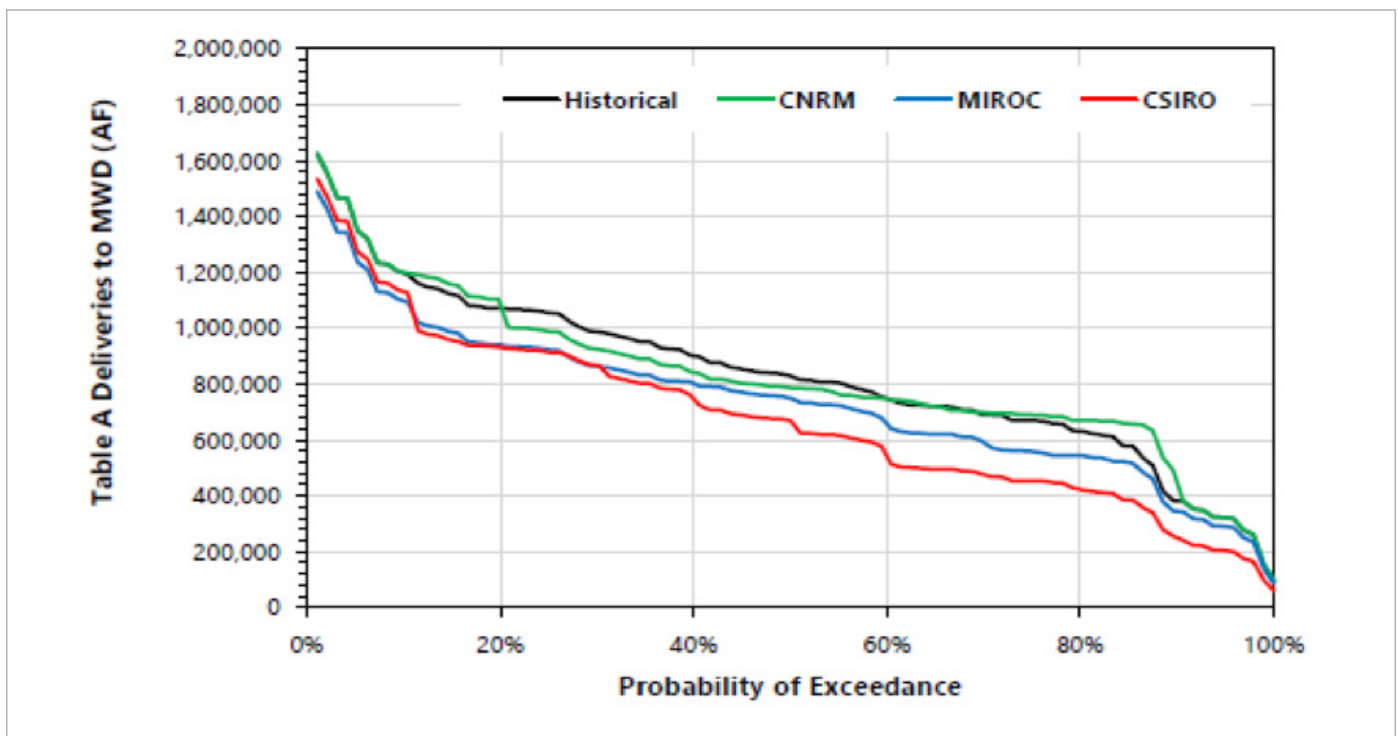


Figure 6-4:
SWP Table A 2050 Deliveries Without Delta Conveyance Project

6.9 DROUGHT RISK ASSESSMENT

This section summarizes the development of a drought risk assessment including a summary of the anticipated City's water demands and supplies over a 5-year drought assumed to start in 2021.

6.9.1 Water Shortage Condition Levels

The City's WSCP, included as **Appendix E**, outlines the decision-making process the City will use each year to determine its water supply reliability. Coordination with SDCWA is crucial to the City's decision, and the WSCP describes how the annual SDCWA member agency allocation and storage apportionment factor into the total City water supply calculation and ultimate shortage level.

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

To determine the appropriate shortage level, the City will assess water supply conditions per the procedures outlined in the WSCP Chapter 1 - Water Supply and Demand Assessment. The City's baseline status is Level 1, as these are permanent, year-around restrictions. However, if the Annual Assessment determines a water supply shortage of 18 percent, the City would be in a

Drought Watch Condition, or Water Shortage Level 2. Once the condition is set, demand reduction measures go into effect with the goal of reducing demands by the target set by the shortage level.

A detailed list of shortage response actions is included in the WSCP. The City's shortage response actions include a mix of prohibitions on end use, consumption reduction methods, supply augmentation, and operational change measures. DWR defines prohibitions on end uses as measures to address areas that are the responsibility of users, such as a broken sprinkler or leaking faucet. Consumption reduction methods are actions invoked by a water supplier to reduce consumption, such as expanding public information campaigns and offering water use surveys. Supply augmentation is defined as any action designed to increase the existing supply availability, such as the use of emergency storage or acquiring additional transfer water. Operational changes are defined as actions taken by the City to change the way in which existing supplies are used within its service area.

Table 6-6 WSCP Water Shortage Levels

Water Shortage Levels	Percent Shortage Range
Level 1: Expanded Year-Round Permanent Mandatory Water Restrictions	Up to 10%
Level 2: Drought Watch Condition	Up to 20%
Level 3: Drought Alert Condition	Up to 30%
Level 4: Drought Critical Condition	Up to 40%
Level 5: Drought Crisis Condition	Up to 50%
Level 6: Drought Emergency Condition	Greater than 50%

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

In addition to drought planning, the WSCP describes how the City is planning for a catastrophic events, including a large seismic event at the regional and local scale, that could cause supply shortages and interruptions. Imported water providers MWD and SDCWA, as well as the City, have developed plans for catastrophic supply interruptions that include a regional power outage, earthquake or other disaster. The City additionally maintains several emergency connections to and from neighboring water agencies, to provide mutual aid during times of catastrophic supply interruptions. These agencies include the Santa Fe Irrigation District, Poway Municipal Water District, Otay Water District, Cal-Am and the Sweetwater Authority. Catastrophic supply interruption events are considered when determining the City's overall water supply shortage as defined by the water shortage levels.

The WSCP is included in **Appendix E** as a separate document UWMP. The WSCP must be adopted by the City Council and could be updated more frequently than the 5-year recurrence of the UWMP as the efficacy of shortage mitigation strategies are re-evaluated.

6.9.2 Drought Risk Assessment (DRA) Water Source Reliability

Near-term drought reliability of the sources of supply utilized by the City depends on the drought impact and stress on each supply as described in **Section 6.4**. The assumed drought availability for each of the City's supplies is summarized below.



Demonstration Plant at NCWRP

- **Recycled Water:** Water supply derived from treated wastewater is considered a drought-proof source. This supply is assumed to be constant over the 5-year DRA until an increase in recycled water from the Pure Water Project Phase 1 comes online in 2023.
- **Local Surface Supply:** In a prolonged drought, rainfall and runoff into local reservoirs would be reduced, so that supply sourced from local reservoirs would decrease over the course of a five-year drought. The availability of local water is assumed to be equal to the usage of this supply during the historical drought from 2013 to 2017.
- **Groundwater:** The City's groundwater supply makes up a small percentage of its supply portfolio and should not be limited in terms of the City's water rights to groundwater or sustainability of the aquifer sources. Therefore, this source of supply is assumed to be constant over the course of the five-year Drought Risk Assessment.
- **Supply from SDCWA:** The SDCWA has confirmed that their supply to the City during a five-year drought will be 100 percent reliable starting next year based on their Drought Risk Assessment analysis from their 2020 UWMP.

6.9.3 Total Water Supply and Use Comparison

The water demand and supply summary using the assumption outline in **Section 6.9.1** and **6.9.2** is presented in **Table 6-7** over the five-year Drought Risk Assessment period from 2021 to 2025. The demands used in this analysis were assumed to linearly increase starting from the 2020 gross water use (174,670 AFY) in 2021 to the year five demand in 2025 from **Table 6-3** (207,735 AFY). The Drought Risk Assessment shows no anticipated shortages over the five-year drought starting in 2021 based on these assumptions.

Table 6-7 5-year Drought Risk Assessment Summary

Drought Risk Assessment Water Use/Supplies	Demand and Supplies (AFY)				
	2021	2022	2023	2024	2025
Gross Water Use ¹	176,067	183,984	191,901	199,818	207,735
Recycled/Reclaimed Water (City service area only) ²	12,979	13,238	13,503	13,773	13,773
Pure Water Phase 1	0	0	0	0	16,000
Pure Water Phase 2	0	0	0	0	0
Local Surface Supply	20,963	23,858	6,280	16,464	18,547
Groundwater	100	100	100	100	100
City-Lake Cuyamaca Interagency Agreement	400	400	400	400	400
Water Supply from SDCWA	141,625	146,388	171,619	169,081	174,915
Total City Water Supplies	176,067	183,984	191,901	199,818	207,735
Surplus/Shortfall w/o WSCP Action	0	0	0	0	0
Resulting % Use Reduction from WSCP Action	0%	0%	0%	0%	0%
Planned WSCP Actions					
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%

¹ Includes consumptive use (retail and wholesale), NRW, conservation, and non-potable recycled water demands.

² Recycled Water projections from Recycled Water Master Plan

SECTION

7

Energy Intensity Analysis

DWR now requires an energy intensity analysis be included in the UWMP cycle. The City completed the Energy Intensity Analysis in the 2015 UWMP, when it was a voluntary effort. As such, the analysis in its 2020 UWMP cycle updates this previously completed analysis.

Due to necessary, large, energy-intensive equipment that is operated to convey and treat water, wastewater and biosolids to meet required standards, PUD's energy intake is larger than any other department in the City's municipal operation. In 2016, PUD's citywide import from SDG&E was about 60 percent of the municipal load. This is after its own direct use from onsite renewable energy generation that PUD has in all its treatment plants (except Miramar Water Treatment Plant that will have onsite generation online in 2021). PUD is working to make its operation equipment energy efficient and upgrading ancillary loads at many of their facilities. In 2019, PUD consumed about 56 percent of its energy from onsite renewable generation directly and indirectly from both privatized and City-PUD owned facilities. PUD is working on upgrading existing aging onsite renewable energy generation facilities along with adding new to the portfolio to meet City's CAP goal of 100 percent renewable by 2035.

7.1 ENERGY INTENSITY

Energy intensity is defined as the total amount of energy an urban water supplier expends per AF to convey water from the point where the supplier acquires the water to the point of delivery.

Energy use and energy intensity developed for the City's 2019 Greenhouse Gas Inventory Report was used for the analysis in this section of the UWMP.

Highlights of the Energy Intensity Analysis



Photovoltaic solar power systems

- PUD is working to improve the energy efficiency of their operations and upgrading many of their facilities. In 2019, PUD consumed about 56 percent of its energy from onsite renewable generation directly and indirectly from both privatized and City-PUD owned facilities. PUD is working on upgrading existing renewable energy generation facilities, as well as adding new facilities to meet the City's CAP goal of 100 percent renewable by 2035.
- The energy intensity – or the amount of energy required to treat and convey water to the City's customers for the combined Miramar, Otay, and Alvarado WTPs – was found to decline between 2017 and 2019 (80, 65, and 61 kWh/AF in 2017, 2018, and 2019, respectively). This is partly due to increases in onsite generation, such as solar, over that time period.
- GHG emissions related to the processing of potable and recycled water within the 2017 to 2019 time frame ranged from 67,000 to 79,000 MT CO₂e and averaged 71 MT Co₂e per year.

7.1.1 Water Consumption

The water entering the water management process is used to calculate energy intensity in this analysis. **Table 7-1** presents the water supplies by the City through its water system presented as potable and recycled water.

Table 7-1 Sources of Water Supplied by the City 2017 through 2019

Year	Potable Water Supplied					Recycled Water Supplied (Acre-Feet)
	Imported SDCWA Treated ¹	Imported SDCWA Untreated	Local Surface Reservoir	Local Groundwater Basin	Potable Water Supplied (Acre-Feet)	
2017	12%	71%	16%	0.3%	164,226	5,189
2018	12%	83%	5%	0.3%	175,932	10,019
2019	10%	77%	14%	0.1%	161,472	7,999

Notes: Percentages may not add up to totals due to rounding.

Potable water supplied (acre-feet) is the City of San Diego's water production excluding sales to other water agencies in a given year.

¹Desalinated water, about 9% of total SDCWA water since 2016, is considered imported treated water.

Source: City of San Diego 2018–2020, Energy Policy Initiatives Center 2020.

The City of San Diego delivers potable and recycled water within the City boundary, and also sells water to or treats water for neighboring water agencies and cities, such as the City of Del Mar and the California American Water Company (CalAm).

The potable water supply sources for City of San Diego include: 1) imported untreated water from SDCWA; 2) imported treated water from SDCWA; 3) surface water from local reservoirs; and 4) groundwater from the Santee-El Monte Basin. Recycled water is produced at the City's North City Water Reclamation Plant (North City WRP) and South Bay Water Reclamation Plant (South Bay WRP) and is used for non-potable use, such as landscape irrigation.

7.1.2 Potable Water

The energy used to produce and distribute water from each source is different due to the different raw source type and its location. The energy intensity of water, or the energy needed to move one unit of water through each segment of the water-use cycle (water supply and conveyance, water treatment and water distribution) individually, expressed in kWh per acre foot (kWh/Acre-foot), are described below.

Upstream Supply and Conveyance

This is defined as supply and conveyance of water from the raw sources to the local service area. The upstream supply and conveyance energy use for SDCWA untreated water consists of conveyance of water from the State Water Project and the Colorado River through MWD's and SDCWA's service area. The water moved from the original source to SDCWA's member agency's service area or first connection point—"upstream supply"—and conveyance energy use for SDCWA treated water consists of that associated with SDCWA untreated water and the water treatment energy use before the water is delivered to City's service area. The water may be treated at MWD or SDCWA's WTPs.

Water suppliers have begun to voluntarily report the energy intensity in their service areas in UWMPs. SDCWA's and MWD's 2015 UWMP voluntary energy intensity reporting are used to calculate the upstream supply energy intensity for SDCWA's member agencies. The energy intensity is based on the average of fiscal years 2013 and 2014 is shown in Table 7-2.

Table 7-2. Components of Average Upstream Energy Intensity for SDCWA Member Agencies

Water System Segment	FY 2013 and 2014 Average Energy Intensity (kWh/Acre-Foot)	Data Source
MWD delivered untreated*	1,817	MWD UWMP 2015 Appendix 9
SDCWA conveyance**	-62	SDCWA UWMP 2015 Appendix K
SDCWA Untreated Subtotal	1,755	
SDCWA treatment	60	SDCWA UWMP 2015 Appendix K
SDCWA distribution***	1.1	SDCWA UWMP 2015 Appendix K
SDCWA Treated Total	1,816	

Notes:

* Includes conveyance from the State Water Project and Colorado River water to MWD's distribution system, and distribution from MWD to its member agencies.

**Conveyance of raw water supplies to the water treatment plants or to member agency connections (negative value means hydro-electric generation by SDCWA).

*** Distribution of treated water from SDCWA's Twin Oaks Water Treatment Plant to SDCWA's member agencies.

"Upstream" refers to moving water from the original source to SDCWA's member agency's service area or first connection point

Source: MWD 2016, SDCWA 2016, Energy Policy Initiatives Center 2018.

Local Supply and Conveyance

This is defined as supply and conveyance of local surface and groundwater within the water agency service area to water treatment plants, such as pumping water from local surface water reservoirs to nearby water treatment plants. Due to the way data is provided, the local supply and conveyance energy intensity is combined with local water treatment energy intensity. Analysis is provided in Table 7-3 in combination with Local Potable Water Treatment, as their operations are connected.

Local Potable Water Treatment

This is the energy used for WTP operations. The energy intensity depends on the source water quality, the treatment level, and the capacity and efficiency of the associated WTP. The City owns three WTPs: Alvarado, Miramar and Otay WTP that treat raw water to potable levels. The WTPs treat both imported untreated SDCWA water and local water. Both Alvarado and Otay WTP have onsite behind-the-meter photovoltaic (PV) systems. The PV systems are connected with the raw water pump stations at Alvarado and Otay WTPs that pump water to and from the WTPs to the nearby reservoirs.

The local water conveyance and treatment energy intensity are combined and provided in **Table 7-3** as their operations are connected. The energy intensities include the average of all three of the City's WTPs; as such, these averages and do not represent the energy intensity of each individual WTP.

Table 7-3. Local Water Conveyance and Treatment Energy Intensity 2017 through 2019

Combined Miramar, Otay and Alvarado WTPs	2017	2018	2019	Description
Water Treated (Acre-Feet)	151,181	161,463	152,586	Total water treated at three WTPs
Total Treatment + Conveyance Energy Use (kWh)	14,260,711	12,412,808	11,519,163	Total electricity consumption including treatment plant operation, lake pump stations and electricity generated at Alvarado and Otay on-site PV systems
Total Treatment + Conveyance Energy Intensity (kWh/Acre-Foot)	94	77	75	Total energy Intensity (total electricity divided by water treated)
Solar Production (kWh)	2,102,587	1,857,874	2,272,785	Annual electricity generated Alvarado and Otay on-site PV systems
Net Treatment + Conveyance Energy Use (kWh)	12,167,796	10,563,594	9,255,955	Change to Net electricity purchase from solar generation by private company
Net Treatment + Conveyance Energy Intensity (kWh/Acre-Foot)	80	65	61	Net Energy Intensity (net energy divided by water treated)

Source: City of San Diego 2018–2020, Energy Policy Initiatives Center 2020.

Local Potable Water Distribution

This is defined as the energy required to move treated water from water treatment plants to end-use customers. Distribution energy use includes energy use for water pump stations and/or pressure reduction stations, water storage tanks and other means. Local distribution energy intensity depends on the service area's geological conditions, such as the elevation the water is pumped to/from, the pump station's energy efficiency, and whether a pump station is offline for maintenance or repair, which would cause water to be pumped to other pressure zones and rerouted back. The City's water service area has some areas with gravity-fed system (no energy needed) and some areas that need to pump water.

The citywide water distribution energy intensities are given in **Table 7-4**; as such, they do not represent the energy intensity of a specific area or pressure zone within the City.

Table 7-4. Local Water Distribution Energy Intensity 2017 through 2019

Citywide Water Distribution	2017	2018	2019	Description
Total Water Moved (Acre-Feet)	171,287	183,245	168,014	Total City of San Diego water production from all water sources (including sales to other water agencies)
Distribution Pump Stations Energy Use (kWh)	25,498,820	24,873,826	25,340,506	Electricity use at water pump stations excluding lake pump stations
Water Distribution Energy Intensity (kWh/Acre-Foot)	149	136	151	Citywide water distribution energy intensity

Source: City of San Diego 2018–2020, Energy Policy Initiatives Center 2020.

7.1.3 Wastewater and Recycled Water

The City currently recycles approximately 11 percent of the wastewater collected at the NCWRP and SBWRP. **Table 7-5** reports the energy intensities expended by recycled water and wastewater.

Recycled water is reported separately from potable supplies, as it is approved and used only for non-potable uses, such as irrigation and cooling towers. The energy intensity of recycled water operations is the amount of energy consumed to convey, treat and distribute recycled water, compared with the energy required to collect, treat and discharge the same amount of wastewater effluent.

Table 7-5 Energy Intensity for Wastewater and Recycled Water Supply

	Collection / Conveyance	Treatment	Discharge / Distribution	Total
Volume of Wastewater Entering Process (AF)	--	--	--	112,089
Wastewater Energy Consumed (kWh)	--	--	--	83,508,501 ¹
Wastewater Energy Intensity (kWh/AF)	--	--	--	745
Volume of Recycled Water Entering Process (AF)	0	12,427	12,427	12,427
Recycled Water Energy Consumed (kWh)	0	3,041	469,081	472,122
Recycled Water Energy Intensity (kWh/AF)	0.0	0.2	37.7	38.0 ²

Source: City of San Diego 2020. CAP 2020 Annual Report

¹ Calculated from Wastewater GHG emissions presented in the 2019 Annual Report

² Recycled water energy intensity presented in the 2015 UWMP and 2019 Annual Report

7.2 GREENHOUSE GAS EMISSIONS

This analysis estimates GHG emissions expended in delivering water from the source to its point of delivery. For upstream energy use, a California-wide average emission factor from EPA eGRID is applied. For local energy use, including potable water conveyance and treatment, distribution and recycled water treatment and distribution, SDG&E's bundled electricity emission factor is applied because SDG&E is the electricity supplier. **Table 7-6** shows the GHG emission factors used to convert energy consumption to GHG emissions.

Table 7-6 Greenhouse Gas Emission Factors for 2018

Energy Source	Electricity Emission Factors for Water-Energy Intensities
EPA eGRID for WECC-California	530 lbs CO ₂ /MWhr ¹
Local SDG&E	528 lbs CO ₂ /MWhr ²

Source: City of San Diego 2020. CAP 2020 Annual Report

¹ The Western Electricity Coordinating Council (WECC) CAMX (eGRID Subregion) emission rate from eGRID (US EPA 2016) was used as representative of the average California electricity emission rate for upstream electricity.

² SDG&E emission factors that are based on percentages of electricity sales to SDG&E bundled and direct access customers, SDG&E and direct access emission factors.

Table 7-7 summarizes the GHG emissions associated with the (1) potable water extraction, conveyance, storage, treatment and distribution; (2) recycled water treatment and distribution.

Table 7-7 Summary of GHG Emissions 2017 through 2019

Water Management Process	GHG Intensity (MT CO ₂ e/AF) ¹	GHG Emissions (MT CO ₂ e) ²
Potable Water and Recycled Water for 2017	0.42	67,000
Potable Water and Recycled Water for 2018	0.45	79,000
Potable Water and Recycled Water for 2019	0.42	67,000

Notes:

Metric tons of carbon dioxide equivalent

Emission from potable water conveyance for upstream supplies using EPA eGrid emission factors. Emission from potable water conveyance, treatment and distribution water within the City using SDG&E emission factors.

Emission from recycled water treatment and distribution within City boundary.

Source:

¹ Calculated based on GHG Emissions from Table 7-7 and water supplied from Table 7-1

² City of San Diego 2020. CAP 2020 Annual Report Appendix

SECTION

8

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APPENDIX

A

Public Hearing Notification and Resolution of Adoption

February 5, 2021

Mr. Don Nue, City Planner
Mr. David De Cordova, Housing Services Manager
City of Carlsbad Planning Department
1635 Faraday Drive
Carlsbad, CA 92008

Dear Mr. Nue, Mr. De Cordova:

Subject: Notice of Preparation of the City of San Diego 2020 Urban Water Management Plan

This letter is to inform you that the City of San Diego is updating its Urban Water Management Plan (UWMP). California State law requires urban water suppliers to update their UWMPs every five years including a water shortage contingency plan. The City of San Diego must adopt an updated UWMP tentatively by June 15, 2021 and submit the adopted plan to the California Department of Water Resources by July 1, 2021.

The UWMP is required to contain a detailed evaluation of the water supplies necessary to reliably meet demands over at least a 20-year period in both normal and dry years. In accordance with State law, the City of San Diego is distributing this notice to the cities and county within which it provides water supplies at least 60 days prior to the Environment Committee public hearing tentatively scheduled for April 15, 2021 or alternatively May 27, 2021. The 2020 UWMP also includes an updated Water Shortage Contingency Plan. The UWMP will be posted on the City's website in early March 2021 along with another notice that will be distributed 30 days prior to the Environment Committee public hearing. An additional public notice will be provided two weeks prior to adoption of the UWMP by City Council. The 2020 UWMP Public Participation and Adoption Schedule is provided as an attachment.

Please feel free to contact me in the Public Utilities Department via email at RStevens@sandiego.gov and Khuram Shah at KHShah@sandiego.gov, if you have any questions or would like additional information.

Sincerely,



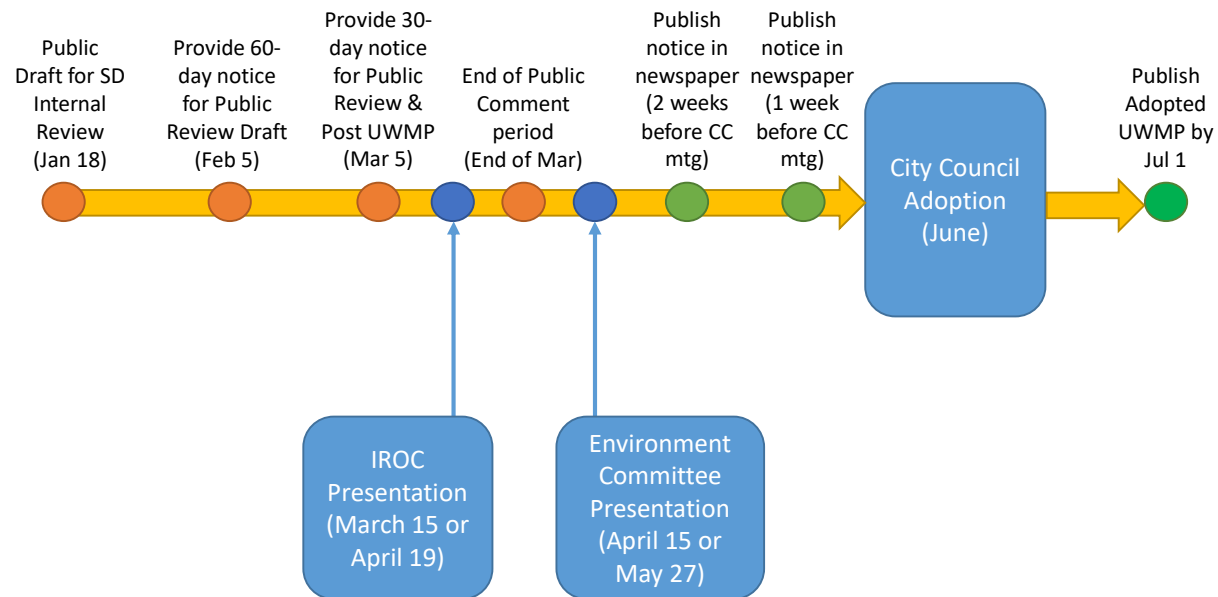
Richard Stevens,
Senior Civil Engineer, P.E.
San Diego Public Utilities Department

Attachments: 2020 UWMP Public Participation & Adoption Schedule

cc: Khuram Shah, Project Manager, KHShah@sandiego.gov



2020 UWMP Public Participation & Adoption Schedule



SAN DIEGO COUNTY WATER AUTHORITY 2020 UWMP PUBLIC NOTICE MAILING LIST

Jurisdiction/Agency	Name	Address	Phone/Fax/Email
City of Carlsbad	Don Neu City Planner	City of Carlsbad Planning Department 1635 Faraday Drive Carlsbad, CA 92008	760-602-4601 760-602-8560 fax Don.Neu@carlsbadca.gov
	David De Cordova Housing Services Manager	City of Carlsbad Planning Department 1635 Faraday Drive Carlsbad, CA 92008	760-602-4604 760-602-8560 fax david.decordova@carlsbadca.gov
City of Chula Vista	Tiffany Allen Development Services Director	City of Chula Vista Development Services 276 Fourth Avenue, Bldg B Chula Vista, CA 91910-2631	619-691-5179 619-409-5861 fax tallen@chulavistaca.gov
	Scott Donaghe Principal Planner, Advance Planning Division	City of Chula Vista Development Services 276 Fourth Avenue Chula Vista, CA 91910-2631	619-407-3594 619-409-5859 fax sdonaghe@chulavistaca.gov
City of Coronado	Richard Grunow Director of Community Development, Redevelopment Services and Housing	City of Coronado Department of Community Development 1825 Strand Way Coronado, CA 92118-3005	619 522-7326 619-522-2418 fax rgrunow@coronado.ca.us
City of Del Mar	Joseph Smith Planning and Community Development Director	City of Del Mar Planning and Comm. Dev. 1050 Camino Del Mar Del Mar, CA 92014-2604	858-755-9313 x1157 858-755-2794 fax jsmith@delmar.ca.us
City of El Cajon	Anthony Shute Director of Community Development	City of El Cajon Community Development Department 200 Civic Center Way, 3rd Floor El Cajon, CA 92020-3912	619-441-1742 619-441-1743 fax ashute@cityofelcajon.us
City of Encinitas	Roy Sapa'u Assistant Director	City of Encinitas Planning Division 505 S. Vulcan Avenue Encinitas, CA 92024-3633	760-633-2710 760-633-2818 fax rsapau@encinitasca.gov
City of Escondido	Mike Strong Director of Community	City of Escondido Community Dev. 201 N. Broadway Escondido, CA 92025-2709	760-839-4671 760-839-4313 fax mstrong@escondido.org
City of Imperial Beach	Tyler Foltz Community Development Director	City of Imperial Beach Community Development Department 825 Imperial Beach Boulevard Imperial Beach, CA 91932-2702	619-628-2381 619-424-4093 fax tfoltz@imperialbeachca.gov
	Meagan Openshaw Associate Planner	City of Imperial Beach Community Development Department 825 Imperial Beach Boulevard Imperial Beach, CA 91932-2702	619-628-0858 619-429-9770 fax mopenshaw@imperialbeachca.gov
City of La Mesa	Kerry Kusiak Director of Community Development	City of La Mesa Community Development Department 8130 Allison Avenue La Mesa, CA 91942	619-667-1177 619-667-1380 fax cddir@cityoflamesa.us

Jurisdiction/Agency	Name	Address	Phone/Fax/Email
City of Lemon Grove	Noah Alvey Community Development Manager	City of Lemon Grove Development Services Department 3232 Main Street Lemon Grove, CA 91945-1705	619-825-3812 619-825-3818 fax nalvey@lemongrove.ca.gov
City of National City	Martin Reeder Principal Planner	City of National City Planning Department 1243 National City Boulevard National City, CA 91950-4301	619-336-4313 619-336-4321 fax mreeder@nationalcityca.gov planning@nationalcityca.gov
City of Oceanside	Jeff Hunt City Planner	City of Oceanside Planning Department 300 N. Coast Highway Oceanside, CA 92054	760-435-3535 760-754-2958 fax 760-435-3520 (main #) jhunt@oceansideca.org
City of Poway	Robert (Bob) Manis Director of Development Services Department	City of Poway Department of Development Services 13325 Civic Center Drive Poway, CA 92064	858-668-4601 858-668-1212 fax 858-668-4600 (main #) bmanis@poway.org
City of San Diego	Mike Hansen Director of Planning	City of San Diego Planning Department 9485 Aero Dr., M.S. 413 San Diego, CA 92123	619-236-6057 619-235-5200 (main #) mhansen@sandiego.gov
County of San Diego	Kathleen Flannery Acting Director, Department of Planning and Development Services	County Department of Planning and Development Services 5510 Overland Avenue San Diego, CA 92123	858-694-2962 858-694-2555 fax (?) kathleen.flannery@sdcounty.ca.gov
City of San Marcos	Dahvia Lynch Development Services Director	City of San Marcos Planning Department 1 Civic Center Drive San Marcos, CA 92069-2949	760-744-1050 x3281 760-591-4135 fax dlynch@san-marcos.net
	Joseph Farace Planning Manager	City of San Marcos Planning Department 1 Civic Center Drive San Marcos, CA 92069-2949	760-744-1050 x3248 760-591-4135 fax jfarace@san-marcos.net
City of Santee	Melanie Kush Director of Development Services	City of Santee Development Services 10601 Magnolia Avenue Santee, CA 92071-1222	619-258-4100 x167 619-562-9376 fax mkush@cityofsanteeca.gov _____
City of Solana Beach	Joseph Lim Director of Community Development	Solana Beach Community Development Department 635 S. Highway 101 Solana Beach, CA 92075-2215	858-720-2440 858-720-2448 fax jlim@cosb.org

[_____](#)

Jurisdiction/Agency	Name	Address	Phone/Fax/Email
City of Vista	John Conley Director of Community Development and Engineering	Vista Community Development Department 200 Civic Center Drive Vista, CA 92084	760-639-6100 760-639-6101 fax jconley@cityofvista.com
	Patsy Chow City Planner	Vista Community Development Department 200 Civic Center Drive Vista, CA 92084	760-639-6100 760-639-6101 fax pchow@cityofvista.com
San Diego County Water Authority	Jeff Stephenson Water Resources Manager	San Diego County Water Authority 4677 Overland Avenue San Diego, CA 92123	858-522-6750 858-268-7881 fax jstephenson@sdewa.org
	Alexi Schnell Water Resources Specialist		858-522-6778 aschnell@sdewa.org
San Diego Association of Governments	Coleen Clementson Director of Regional Planning	SANDAG 401 B Street, Suite 800 San Diego, CA 92101 (or Mail Station 980)	619-699-1944 619-699-1900 (general #) 619-699-1905 fax coleen.clementson@sandag.org
San Diego LAFCO	Keene Simonds Executive Officer	9335 Hazard Way, Suite 200 San Diego, CA 92123	858-614-7755 858-614-7766 (fax) keene.simonds@sdcounty.ca.gov
Otay Water District	Jose Martinez General Manager	Otay Water District 2554 Sweetwater Springs Blvd. Spring Valley, CA 91978-2004	619-670-2280 619-617-2222 (general #) jose.martinez@otaywater.gov
Santa Fe Water District	Al Lau General Manager	Santa Fe Irrigation District 5920 Linea del Cielo Rancho Santa Fe, CA 92067	858-756-2424 858-756-0450 fax GeneralManager@sfidwater.org
Olivenhain Municipal Water District	Kimberly Thorner General Manager	OMWD 1966 Olivenhain Road Encinitas, CA 92024	760-632-4648 760-753-6466 (general #) Kthorner@olivenhain.com

FOR IMMEDIATE RELEASE

March 1, 2021

City Invites Public Input on Draft 2020 Urban Water Management Plan

*Plan Addresses Existing and Future Water Needs;
Part of City's Ongoing, Multi-Faceted Water Planning Efforts*

The City of San Diego is inviting public review and comment on its Draft 2020 Urban Water Management Plan (UWMP) through April 5, 2021. The Plan includes an updated Water Shortage Contingency Plan (WSCP) Appendix.

In compliance with California Water Code (§10610-10656, §10608 and §10632) the UWMP and WSCP are required to contain detailed evaluations of the water supplies necessary to reliably meet demands over at least a 20-year period in both normal and dry years.

The City is required by the Urban Water Management Planning Act to prepare a plan every five years. The City is required to formally update and adopt a plan by July 1, 2021 for submittal to the California Department of Water Resources. An Environment Committee public hearing for these documents is tentatively scheduled for April 15, 2021 or alternatively May 27, 2021. All comments will be reviewed before the public hearing.

The Plans are available for public review and can be found on the City of San Diego website at:
<https://www.sandiego.gov/public-utilities/sustainability/water-supply>

Comments must be received no later than 5:00 p.m. Thursday, April 5, 2021 and can be sent to:

Khuram Shah, Project Manager
Public Utilities Department
khshah@sandiego.gov

(619) 232-3486
 notices@sdtranscript.com

LEGAL NOTICES

FAX (619) 232-1239

NOTICE OF INTENTION TO CIRCULATE RECALL PETITION

TO THE HONORABLE Cori Schumacher: Pursuant to Section 11020, California Elections Code, the undersigned registered qualified voters of Carlsbad City Council District 1, in the State of California, hereby give notice that we are the proponents of a recall petition and that we intend to seek your recall and removal from the office of District 1 Councilmember, in Carlsbad, California, and to demand election of a successor in that office. The grounds for the recall are as follows:

Carlsbad City Councilmember Cori Schumacher created a toxic environment in our city and must be recalled from office before more damage is done. In March 2021, a Superior Court judge found Schumacher liable for harassment and retaliation against several of her constituents – and her misdeeds could now end up costing taxpayers more than \$100,000 in legal fees! Schumacher not only was defaming and slandering innocent individuals, but she diverted resources that should have been spent on legitimate victims of domestic violence. As Carlsbad struggled with Covid-19 lockdowns, Schumacher made matters much worse. Instead of seeking to help those who were struggling to survive, Schumacher threatened working families and struggling small businesses with sweeping fines and enforcement penalties. Schumacher turned a blind eye to the suffering of our children by aggressively fighting any attempt to reopen our schools. Cori Schumacher has done enough damage to Carlsbad and must be recalled.

The printed names, signatures, and residence addresses of the proponents are as follows:

- | NAME | ADDRESS | SIGNATURE |
|---------------------------|--|-----------------------|
| 1. Nancy Cochran | 4506 Horizon Dr. Carlsbad CA 92008 | Nancy Cochran |
| 2. Melanic Burkholder | 4440 Sunnyside Dr. Carlsbad, CA 92008 | Melanie Burkholder |
| 3. Andrea C. Ryan | 1686 Brady Circle, Carlsbad, CA 92008 | Andrea C. Ryan |
| 4. Melody Hulsebusch | 1331 KNOWLES AVE, Carlsbad, CA 92008 | Melody Hulsebusch |
| 5. Patricia A. Davis | 2631 Roosevelt St #23 Carlsbad CA 92008 | Patricia A. Davis |
| 6. Kimberly Heitchew | 2420 Pio Pio Drive Carlsbad, CA 92008 | Kimberly Heitchew |
| 7. | | |
| 8. | | |
| 9. GREGORY SCHORR | 2640 KREMEYER AVE #8 CARLSBAD 92008 | Gregory Schorr |
| 10. Cynthia Smerud | 906 Pine Ave #101 Carlsbad, CA 92008 | Cynthia Smerud |
| 11. Theresa Carpenter | 2581 State St. Carlsbad 92008 | Theresa Carpenter |
| 12. JHARNA SKJEI | 2829 Forest Viewway Carlsbad, CA 92008 | Jharnea M. Skjei |
| 13. Monica Golan | 3461 TOPPEKA ST Carlsbad CA 92008 | Monica Golan |
| 14. Paul Golan | 3461 TOPPEKA ST, Carlsbad CA 92008 | Paul Golan |
| 15. MARY JANE WORTHMAN | 3864 WESTHAVEN DRIVE, Carlsbad CA 92008 | Mary Jane Worthman |
| 16. Angela Derby | 2362 Hosp way Carlsbad Angeli com ca 92008 | Angela Derby |
| 17. Mike Reinhardt-Miller | 3248 Palmdale Carlsbad, CA 92008 | Mike Reinhardt-Miller |
| 18. Kelly Le Berthon | 3993 Alder Ave Carlsbad, CA 92008 | Kelly Le Berthon |
| 19. DARIO ZUCKER | 1687 BRADY Cir CARLSBAD, CA 92008 | Dario Zucker |
| 20. Richard Smerud | 906 Pine Ave. #101 CARLSBAD, CA 92008 | Richard Smerud |
| 21. Kathy Garafalo Mch | 1769 Yourail, 92008 Carlsbad | Kathy Garafalo Mch |
| 22. George B Mch | 1769 Yourail, 92008 Carlsbad | George B Mch |
| 23. GREGORY BERRY | 1890 LAS FLORES CARLSBAD, CA 92008 | Gregory Berry |
| 24. Cathy Berry | 1240 LAS FLORES CARLSBAD CA 92008 | Cathy C Berry |
| 25. | | |

Telephone number to contact proponents (N/A)

The original notice and proof of service will be filed with the Carlsbad City Clerk Office.

Elections Code section 11023. (a) Within seven days after the filing of the notice of intention, the officer sought to be recalled may file with the elections official, or in the case of a state officer, the Secretary of State, an answer, in not more than 200 words, to the statement of the proponents. (b) If an answer is filed, the officer shall, within seven days after the filing of the notice of intention, also serve a copy of it, by personal delivery or by certified mail, on one of the proponents named in the notice of intention. (c) The answer shall be signed and shall be accompanied by the printed name and business or residence address of the officer sought to be recalled.

CNSB#3468212



CITY OF SAN DIEGO – 9192 Topaz Way, SAN DIEGO, CA 92101
 PUBLIC NOTICE

Date: May 4, 2021

Subject: City Council to Consider 2020 Urban Water Management Plan for Adoption

The City of San Diego is inviting public review and comment on its 2020 Urban Water Management Plan (UWMP) through May 18, 2021. The Plan will be brought before City Council for adoption on May 18, 2021. The 2020 UWMP also includes the City's updated 2020 Water Shortage Contingency Plan (WSCP).

In compliance with the Urban Water Management Planning Act of the California Water Code (§10610-10656, §10608 and §10632) the UWMP and WSCP are required to evaluate sufficiency of City water supplies necessary to reliably meet demands over a 20-year planning horizon considering normal and dry years. The City is required by the Urban Water Management Planning Act to prepare a Plan every five years. The City is required to formally update and adopt the Plan by July 1, 2021 for submittal to the California Department of Water Resources.

Public hearings for the Plan were held at Public Utilities Department's Independent Rate Oversight Committee (IROC) on March 15, 2021 and City Council Environment Committee on April 15, 2021.

The Plans are available for public review and can be found on the City of San Diego website at:
<https://www.sandiego.gov/public-utilities/sustainability/water-supply>

Comments can be made at the Council Hearing or can be sent anytime before the Council Hearing to:

Khuram Shah
 Public Utilities Department
kshah@sandiego.gov

CNSB#3468457

CIVIL

SUMMONS (CITACION JUDICIAL)

CASE NUMBER (Número del Caso):
 37-2019-00049225-CL-UM-CTL
 NOTICE TO DEFENDANT (AVISO AL DEMANDADO): ALBERTO VARGAS;
 Does 1-100

YOU ARE BEING SUED BY PLAINTIFF (LO ESTÁ DEMANDANDO EL DEMANDANTE): STATE FARM AUTOMOBILE INSURANCE COMPANY
 NOTICE! You have been sued. The court may decide against you without your being heard unless you respond within 30 days. Read the information below.

You have 30 CALENDAR DAYS after this summons and legal papers are served on you to file a written response at this court and have a copy served on the plaintiff. A letter or phone call will not protect you. Your written response must be in proper legal form if you want the court to hear your case. There may be a court form that you can use for your response. You can find these court forms and more information at the California Courts Online Self-Help Center (www.courtinfo.ca.gov/selfhelp), your county law library, or the courthouse nearest you. If you cannot pay the filing fee, ask the court clerk for a fee waiver form. If you do not file your response on time, you may lose the case by default, and your wages, money, and property may be taken without further warning from the court.

There are other legal requirements. You may want to call an attorney right away. If you do not know an attorney, you may want to call an attorney referral service. If you cannot afford an attorney, you may be eligible for free legal services from a nonprofit legal services program. You can locate these nonprofit groups at the California Legal Services Web site (www.lawhelpcalifornia.org), the California Courts Online Self-Help Center (www.courtinfo.ca.gov/selfhelp), or by contacting your local court or county bar association. NOTE: The court has a statutory lien for waived fees and costs on any settlement or arbitration award of \$10,000 or more in a civil case. The court's lien must be paid before the court will dismiss the case.

¡AVISO! Lo han demandado. Si no responde dentro de 30 días, la corte puede decidir en su contra sin escuchar su versión. Lea la información a continuación. Tiene 30 DÍAS DE CALENDARIO después de que le entreguen esta citación y papeles legales para presentar una respuesta por escrito en esta corte y hacer que se entregue una copia al demandante. Una carta o una llamada telefónica no lo protegen. Su respuesta por escrito tiene que estar en formato legal correcto si desea que procesen su caso en la corte.

Es posible que haya un formulario que usted pueda usar para su respuesta. Puede encontrar estos formularios de la corte y más información en el Centro de Ayuda de las Cortes de California (www.sucorte.ca.gov), en la biblioteca de leyes de su condado o en la corte que le quede más cerca. Si no puede pagar la cuota de presentación, pida al secretario de la corte que le dé un formulario de exención de pago de cuotas. Si no presenta su respuesta a tiempo, puede perder el caso por incumplimiento y la corte le podrá quitar su sueldo, dinero y bienes sin más advertencia.

Hay otros requisitos legales. Es recomendable que llame a un abogado inmediatamente. Si no conoce a un abogado, puede llamar a un servicio de remisión a abogados. Si no puede pagar a un abogado, es posible que cumpla con los requisitos para obtener servicios legales gratuitos de un programa de servicios legales sin fines de lucro. Puede encontrar estos grupos sin fines de lucro en el sitio web de California Legal Services (www.lawhelpcalifornia.org), en el Centro de Ayuda de las Cortes de California (www.sucorte.ca.gov) o poniéndose en contacto con la corte o el colegio de abogados locales. AVISO: Por ley, la corte tiene derecho a reclamar las cuotas y los costos exentos por imponer un gravamen sobre cualquier recuperación de \$10,000 o más de valor recibida mediante un acuerdo o una concesión de arbitraje en un caso de derecho civil. Tiene que pagar el gravamen de la corte antes de que la corte pueda desear el caso.

The name and address of the court is (El nombre y dirección de la corte es): SAN DIEGO COUNTY SUPERIOR COURT, 330 West Broadway, San Diego CA 92101. The name, address, and telephone number of plaintiff's attorney, or plaintiff without an attorney, is (El nombre, la dirección y el número de teléfono del abogado del demandante, o del demandante que no tiene abogado, es): Lee M. Mendelson, Esq. (SBN 236819); Marc A. Schwarz, Esq. (SBN 292758), Mendelson Schwarz, APLC, 5805 Sepulveda Blvd, Suite 850 Sherman Oaks, CA 91411, (818) 575-6822. DATE (Fecha): SEP 18, 2019, Clerk (Secretario), by C. SCHAEFFER, Deputy (Adjunto) (SEAL)

NOTICE TO THE PERSON SERVED: You are served as an individual. 5/6, 5/13, 5/20, 5/27/21

SD-3467739#

ORDER TO SHOW CAUSE FOR CHANGE OF NAME

Case No. 37-2021-00008177-CU-PT-CTL
 Superior Court of California, County of SAN DIEGO
 Petitioner of: Myles Aaron Dudas for Change of Name
 TO ALL INTERESTED PERSONS:
 Petitioner Myles Aaron Dudas filed a petition with this court for a decree

changing names as follows:
 Myles Aaron Dudas to Myles Aaron Heidenreich
 The Court orders that all persons interested in this matter appear before this court at the hearing indicated below to show cause, if any, why the petition for change of name should not be granted. Any person objecting to the name changes described above must file a written objection that includes the reasons for the objection at least two court days before the matter is scheduled to be heard and must appear at the hearing to show cause why the petition should not be granted. If no written objection is timely filed, the court may grant the petition without a hearing.

Notice of Hearing:
 Date: 06/01/2021, Time: 8:30, Dept.: 61
 The address of the court is 330 W BROADWAY SAN DIEGO, CA-92101
 A copy of this Order to Show Cause shall be published at least once each week for four successive weeks prior to the date set for hearing on the petition in the following newspaper of general circulation, printed in this county: THE DAILY TRANSCRIPT
 Due to the Covid-19 Pandemic, and the Court not conducting in-person hearings the following Order is Made: NO HEARING WILL OCCUR ON THE DATE SPECIFIED IN THE ORDER TO SHOW CAUSE. The Court will review the documents filed as of the date specified on the Order to Show Cause. If all requirements for a name change have been met as of the date specified, and no timely written objection has been received (required at least two court days before the date specified), the Petition will be granted without a hearing. If all the requirements have not been met as of the date specified, the Court will mail you a written order with further directions. If a timely objection is filed, the Court will set a hearing date and contact the parties by mail with further directions. IF YOU ARE A RESPONDENT OBJECTING TO THE NAME CHANGE, YOU MUST FILE A WRITTEN OBJECTION AT LEAST TWO COURT DAYS (excluding weekends and holidays) BEFORE THE DATE SPECIFIED. Do not Come to Court on the Specified Date, you will be notified by mail by the Court of a Future hearing date. Any Petition for the Name Change of a minor, that is signed by only one parent, must have this Attachment served along with the Petition and Order to Show Cause on the other, non-signing parent, and proof of service must be filed with the Court. IT IS SO ORDERED.
 Date: 04/15/21
 Lorna A. Alksne
 Judge of the Superior Court
 4/29, 5/6, 5/13, 5/20/21

SD-3465851#

CITATION FOR PUBLICATION UNDER WELFARE AND INSTITUTIONS CODE SECTION 294

Case Number: 00520445

SUPERIOR COURT OF CALIFORNIA, COUNTY OF SAN DIEGO, 2851 Meadow Lark Drive, San Diego, CA 92123, JUVENILE DIVISION
 CASE NAME: CLAYTON LOUIS RADA
 1. To: SAOLO GRACE RADA aka SAOLO RADA and anyone claiming to be a parent of: CLAYTON LOUIS RADA born on: July 2, 2020, at: Tri-City Medical Center, Oceanside, California

2. A hearing will be held on: July 13, 2021 at: 8:00 a.m. in Dept: 10 located at court address above.
 3. At the hearing the court will consider the recommendations of the social worker or probation officer.
 4. The social worker or probation officer will recommend that your child be freed from your legal custody so that the child may be adopted. If the court follows the recommendation, all your parental rights to the child will be terminated.
 5. You have the right to be present at the hearing, to present evidence, and you have the right to be represented by an attorney. If you do not have an attorney and cannot afford to hire one, the court will appoint an attorney for you.

6. If the court terminates your parental rights, the order may be final.
 7. The court will proceed with this hearing whether or not you are present.

Date: April 14, 2021
 By LISA MARASIGAN, Deputy
 Request for Accommodations
 Assistive listening systems, computer-assisted real-time captioning, or sign language interpreter services are available if you ask at least five days before the proceeding. Contact the clerk's office or go to www.courtinfo.ca.gov/forms for Request for Accommodations by Persons With Disabilities and Order (form MC-410). (Civil Code, Sec. 54.8.)
 CN977154 RADA
 4/22, 4/29, 5/6, 5/13/21

SD-3463399#

ORDER TO SHOW CAUSE FOR CHANGE OF NAME

Case No. 37-2021-00014902-CU-PT-CTL
 Superior Court of California, County of San Diego
 Petitioner of: KYLE R. GRINDLEY & JI HYON ON BEHALF OF MINOR CHILD ANA LOUISE GRINDLEY for Change of

(619) 232-3486
notices@sdtranscript.com

LEGAL NOTICES

FAX (619) 232-1239

Advertisement for Bids

Notice is hereby given that the San Diego Unified School District, acting by and through its governing board, will receive "ELEC-TRONIC-ONLY" bids for the furnishing of all labor, materials, transportation, equipment, and services for:

CPMA SCHOOL JOINT USE FIELD PARKING AND FENCING

A mandatory site visit is scheduled for 9:00 a.m. on THURSDAY, MAY 20, 2021, outside the main office of CPMA School. ALL CONTRACTORS MUST PREREGISTER WITH THE DISTRICT PRIOR TO ATTENDING THE SITE WALK. Please send only one representative per Company. Contact Jess Imperial, jimperial@sandi.net for the link to preregister. PLEASE SEE BID FOR DETAILS (No. CZ21-0689-52).

GENERAL CONTRACTORS ARE HIGHLY ENCOURAGED TO INVITE SUBCONTRACTORS TO PREREGISTER PRIOR TO THE SITE VISITS.

COVID-19 SITE WALK SAFETY PRECAUTIONS WILL BE ENFORCED:

- Prior to attending the site walk, all attendees will be required to preregister with the District and self-certify utilizing a Smartsheet form (contact jimperial@sandi.net) for the link to preregister) that they:
 - Have had no signs of a fever or a measured temperature of 100.0 degrees or greater, a cough or shortness of breath within the past 7 days.
 - Have not travelled on an airplane within the past 14 days. Have not travelled from another country within the past 14 days.
 - Have not had "close contact" with an individual diagnosed with COVID-19.
 - "Close contact" means living in the same household as a person who has tested positive for COVID-19, caring for a person who has tested positive for COVID-19, being within 6-feet of a person who has tested positive for COVID-19 for about 15 minutes, or coming in direct contact with secretions (e.g., sharing utensils, being coughed on) from a person who has tested positive for COVID-19, while that person was symptomatic.
 - Have not been asked to self-isolate or quarantine by their doctor or a local public health official.
 - Have not tested positive for COVID-19 and have been symptom free for 14 days.
- All attendees will be required to wash their hands prior to the start and at the end of the site walk at a designated bathroom or portable handwashing station.
- No physical contact is allowed. This means, but is not limited to: handshaking, high-fives, elbow bumping or fist bumping.
- Gloves will be handed out to all attendees immediately after they have washed their hands.
- Face coverings are required to be worn by all persons (district staff and visitors) and will not be provided.
 - Face coverings may be: bandanas, or "masks" made from home materials, such as T-shirts, pillow cases, cloth napkins. Wearing a face covering protects others that you may encounter, in case you do not realize you are infectious because you have no symptoms. These face coverings must cover one's nose and mouth.
 - Do not touch your face covering until you remove it, and then wash your hands. Stay 6-feet apart, even with a face covering.
- A "No Congregation" policy is in effect, individuals must implement social distancing by maintaining a minimum distance of 6-feet from other individuals.
- In areas where required social distancing is impossible, one (1) person at a time will be allowed to view a specific area.
- Only one (1) representative from a company is allowed to attend a site-walk.

All bids must be received electronically at or before 1:00 p.m. on JUNE 10, 2021. Firms interested in submitting a bid package must go to <https://www.planetbids.com/portal/portal.cfm?CompanyID=43764> then search under "Bid Opportunities" for "Invitation number" CZ21-0689-52 CPMA JUF Parking and Fencing. For new vendors, please register under "New Vendor Registration".

The project estimate is between \$1.3 million and \$1.6 million. This is a PSA project and requires prequalification. The District requires that Bidders possess any of the following classification(s) of California State Contractors License(s), valid and in good standing, at the time of bid opening and contract award: A or other appropriate license, subject to District approval.

Each bid shall be in accordance with all terms, conditions, plans, specifications and any other documents that comprise the bid package. The Bid and Contract Documents are available in three formats, hard copy, CD, or online from PlanWell. Hard copy bid documents are available at Crisp Imaging, 8375 Camino Santa Fe, Unit B, San Diego, CA 92121, phone number 858-535-0607, for a refundable payment of Two Hundred Dollars (\$200) per set; CD's are available for a non-refundable charge of \$50. Payments shall be made by check payable to SAN DIEGO UNIFIED SCHOOL DISTRICT. If the payment for Bid and Contract Documents is refundable, refunds will be processed by the District only if the Bid and Contract Documents, including all addendums, are returned intact and in good order to Crisp Imaging within ten (10) days of the issuance of the Final Bid Tabulation. Online documents are available for download on PlanWell through Crisp Imaging. Go to www.crispimg.com, click on PlanWell, Public Planroom, search SDUSD (Questions? 949-285-3171). All bids shall be submitted on bid forms furnished by the District in the bid package beginning May 7, 2021. Bid packages will only be accepted via PlanetBids.

PRE-QUALIFICATION OF BIDDERS: Pursuant to Public Contract Code (PCC) §20111.6, each contractor wishing to bid as a prime to the District for projects estimated at \$1,000,000 or over, or any subcontractor performing the license classifications of A, B [if performing the work of] C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43 and/or C-46 wishing to submit a bid to a bidding prime contractor must be prequalified in order to bid. Projects estimated at 10 million or greater require audited financials. Go online to <https://www.sandiegounified.org/contractor-prequalification> to download the most current prequalification application for your company. Completed applications must be submitted to the District no later than (MAY 27, 2021), which is 10 business days before the bid opening due date. Any questionnaires submitted later than this deadline will not be processed for this invitation for Bids. The District encourages all general contractors bidding as a prime contractor, and all MEP subcontractors to request a questionnaire, complete it and submit it as soon as possible.

SENATE BILL (SB) 854 REQUIREMENTS: Effective July 1, 2014, no contractor or subcontractor may be listed on a bid proposal, or awarded a contract for a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations (DIR) pursuant to Labor Code §1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code §1771.1(a)]. This project is subject to compliance monitoring and enforcement by the DIR.

Prime contractors must add the DIR Registration Number for each of their listed subcontractors to the Subcontractors List AND submit a certificate of registration for their own firm and those of their listed subcontractors upon request by the District. Failure of the bidding prime contractor to list their subcontractors DIR Registration Number on the Subcontractors List at time of bid may result in rejection of their bid as non-responsive.

Refer to the following DIR Website for further information: www.dir.ca.gov/Public-Works/PublicWorks.html

PREVAILING WAGES: Prevailing wage requirements apply to all public works projects and must be followed per Article 17 of the General Conditions of this bid.

PROJECT STABILIZATION AGREEMENT (PSA): This project is subject to the Project Stabilization Agreement (PSA) adopted by the Board of Education on July 28, 2009. The complete agreement is available for viewing and downloading at www.sandi.net - Proposition S & Z and YY


DISABLED VETERAN BUSINESS ENTERPRISE PARTICIPATION PROGRAM: Pursuant to Resolution In Support of Service Disabled Veterans Owned Businesses (SDVOB) and Disabled Veteran Business Enterprises (DVBE) approved on May 10, 2011 by the Board of Education, the Bidder is required to satisfy a minimum DVBE participation percentage of at least three percent (3%) for this project. In compliance with this Program, the Bidder shall satisfy all requirements enumerated in the bid package.

Each bid must be submitted on the Bid Form provided in the bid package and shall be accompanied by a satisfactory bid security in the form of either a bid bond executed by the bidder and Surety Company, or a certified or cashier's check in favor of the San Diego Unified School District, in an amount equal to ten percent (10%) of the bid value. Said bid security shall be given to guarantee that the Bidder will execute the contract as specified, within five (5) working days of notification by the District.

The District reserves the right to reject any and all bids and to waive any irregularities or informalities in any bids or in the bidding process. No bidder may withdraw his bid for a period of 120 days after the date set for the opening of bids. For information regarding bidding, please email jimperial@sandi.net.

SAN DIEGO UNIFIED SCHOOL DISTRICT
Andrea O'Hara, M.A.
Strategic Sourcing and Contracts Officer
Strategic Sourcing and Contracts Department

Advertisement Dates:
05/11/2021
05/18/2021
CZ21-0689-52
CNSB#3470002



Public Utilities

CITY OF SAN DIEGO – 9192 Topaz Way, SAN DIEGO, CA 92101
PUBLIC NOTICE

Date: May 11, 2021

Subject: City Council to Consider 2020 Urban Water Management Plan for Adoption

The City of San Diego is inviting public review and comment on its 2020 Urban Water Management Plan (UWMP) through May 18, 2021. The Plan will be brought before City Council for adoption on May 18, 2021. The 2020 UWMP also includes the City's updated 2020 Water Shortage Contingency Plan (WSCP).

In compliance with the Urban Water Management Planning Act of the California Water Code (§10610-10656, §10608 and §10632) the UWMP and WSCP are required to evaluate sufficiency of City water supplies necessary to reliably meet demands over a 20-year planning horizon considering normal and dry years. The City is required by the Urban Water Management Planning Act to prepare a Plan every five years. The City is required to formally update and adopt the Plan by July 1, 2021 for submittal to the California Department of Water Resources.

Public hearings for the Plan were held at Public Utilities Department's Independent Rate Oversight Committee (IROC) on March 15, 2021 and City Council Environment Committee on April 15, 2021.

The Plans are available for public review and can be found on the City of San Diego website at:
<https://www.sandiego.gov/public-utilities/sustainability/water-supply>

Comments can be made at the Council Hearing or can be sent anytime before the Council Hearing to:

Khuram Shah
Public Utilities Department
kshah@sandiego.gov

CNSB#3468460

BULK SALES

NOTICE TO CREDITORS OF BULK SALE (UCC SEC. 6105)
Escrow No. 10054-JH
NOTICE IS HEREBY GIVEN that a bulk sale is about to be made. The name(s), business address(es) to the Seller(s) are: MIRAMOR HB, A CALIFORNIA CORPORATION, 2660 ANTARES DR. STE B SAN DIEGO, CA 92145
Doing Business as: L & L HAWAIIAN BARBECUE
All other business name(s) and address(es) used by the Seller(s) within three years, as stated by the Seller(s), is/are: L & L HAWAIIAN BBQ
The name(s) and address of the Buyer(s) is/are: EDWIN GALBAN AND MARIEBEL GALBAN, 2660 ANTARES DR. STE B SAN DIEGO, CA 92145
The assets to be sold are described in general as: FURNITURE, FIXTURES, AND EQUIPMENT, GOODWILL, INVENTORY, LEASE, AND LEASEHOLD IMPROVEMENT and are located at: 2660 ANTARES DR. STE B, SAN DIEGO, CA 92145
The bulk sale is intended to be consummated at the office of: DETAIL ESCROW, INC. 13737 ARTESIA BLVD. #105 CERRITOS, CA 90703 and the anticipated sale date is MAY 27, 2021.
The bulk sale is subject to California Uniform Commercial Code Section 6106.2. [If the sale is subject to Sec. 6106.2, the following information must be provided.] The name and address of the person with whom claims may be filed is: DETAIL ESCROW, INC. 13737 ARTESIA BLVD #105, CERRITOS, CA 90703 and the last day for filing claims shall be MAY 26, 2021, which is the business day before the sale date specified above.
Dated: MAY 3, 2021
BUYER: EDWIN GALBAN AND MARIEBEL GALBAN, 297034 DAILY TRANSCRIPT 5/11/21
SD-3470010#

NOTICE TO CREDITORS OF BULK SALE (Secs. 6104, 6105 U.C.C.)
Escrow No. 156528P-CG
NOTICE IS HEREBY GIVEN that a bulk sale is about to be made. The name(s) and business address(es) of the seller(s) is/are: K A Management, Inc., a California Corporation, 2870 Lenwood Rd., Barstow, CA 92311
Doing business as: BARSTOW SHELL
All other business name(s) and address(es) used by the seller(s) within the past three years, as stated by the seller(s), is/are: KA Barstow, LLC at 2870 Lenwood Rd., Barstow, CA 92311
The location in California of the chief executive office of the seller(s) is: 5820 Oberlin Drive #201, San Diego CA 92121
The name(s) and business address of the

buyer(s) is/are: Equilon Enterprises, LLC, a Delaware limited Liability Company, 2870 Lenwood Rd., Barstow, CA 92311
The assets to be sold are generally described as: detached Furniture, Fixtures, Equipment and fuel inventory and are located at: "Barstow Shell", 2870 Lenwood Rd., Barstow, CA 92311
The bulk sale is intended to be consummated at the office of: Allison-McCloskey Escrow Company, 4820 El Cajon Boulevard, San Diego, CA 92115-4695 and the anticipated sale date is May 27, 2021.
This bulk sale IS NOT subject to California Uniform Commercial Code Section 6106.2. The name and address of the person with whom claims may be filed is: Allison-McCloskey Escrow Company, 4820 El Cajon Boulevard, San Diego, CA 92115-4695, and the last date for filing claims by any creditor shall be May 26, 2021, which is the business day before the anticipated sale date specified above.
Dated: 04/22/2021
Buyer's Signature
Equilon Enterprises, LLC, a Delaware Limited Liability Company
By: /s/ Lydell Lauro, Real Estate Manager 5/11/21
SD-3468065#

CIVIL

ORDER TO SHOW CAUSE FOR CHANGE OF NAME
Case No. 37-2021-00019032-CU-PT-CTL Superior Court of California, County of SAN DIEGO
Petition of: Teresa Gonzalez Rico for Change of Name
TO ALL INTERESTED PERSONS: Petitioner Teresa Gonzalez Rico filed a petition with this court for a decree changing names as follows: Teresa Gonzalez Rico to Maria Teresa Gonzalez Rico
The Court orders that all persons interested in this matter appear before this court at the hearing indicated below to show cause, if any, why the petition for change of name should not be granted. Any person objecting to the name changes described above must file a written objection that includes the reasons for the objection at least two court days before the matter is scheduled to be heard and must appear at the hearing to show cause why the petition should not be granted. If no written objection is timely filed, the court may grant the petition without a hearing.
Notice of Hearing: Date: 06/21/21, Time: 8:30, Dept.: C-61 The address of the court is 330 W BROADWAY SAN DIEGO, CA-92101
A copy of this Order to Show Cause shall be published at least once each week for four successive weeks prior to the date set for hearing on the petition in the following

newspaper of general circulation, printed in this county: THE DAILY TRANSCRIPT Due to the Covid-19 Pandemic, and the Court not conducting in-person hearings the following Order is Made: NO HEARING WILL OCCUR ON THE DATE SPECIFIED IN THE ORDER TO SHOW CAUSE. The Court will review the documents filed as of the date specified on the Order to Show Cause. If all requirements for a name change have been met as of the date specified, and no timely written objection has been received (required at least two court days before the date specified), the Petition will be granted without a hearing. If all the requirements have not been met as of the date specified, the Court will mail you a written order with further directions. If a timely objection is filed, the Court will set a hearing date and contact the parties by mail with further directions. IF YOU ARE A RESPONDENT OBJECTING TO THE NAME CHANGE, YOU MUST FILE A WRITTEN OBJECTION AT LEAST TWO COURT DAYS (excluding weekends and holidays) BEFORE THE DATE SPECIFIED. Do not Come to Court on the Specified Date, you will be notified by mail by the Court of a Future hearing date. Any Petition for the Name Change of a minor, that is signed by only one parent, must have this Attachment serviced along with the Petition and Order to Show Cause on the other, non-signing parent, and proof of service must be filed with the Court. IT IS SO ORDERED.
Date: 04/30/2021
Lorna A. Alksne
Judge of the Superior Court 5/11, 5/18, 5/25, 6/1/21
SD-3470172#

ORDER TO SHOW CAUSE FOR CHANGE OF NAME
Case No. 37-2021-00019032-CU-PT-CTL Superior Court of California, County of SAN DIEGO
Petition of: Eien Patrick Duckett for Change of Name
TO ALL INTERESTED PERSONS: Petitioner Eien Patrick Duckett filed a petition with this court for a decree changing names as follows: Eien Patrick Duckett to Ian Patrick Curt Duckett
The Court orders that all persons interested in this matter appear before this court at the hearing indicated below to show cause, if any, why the petition for change of name should not be granted. Any person objecting to the name changes described above must file a written objection that includes the reasons for the objection at least two court days before the matter is scheduled to be heard and must appear at the hearing to show cause why the petition should not be granted. If no written objection is timely filed, the court may grant the petition without a hearing.
Notice of Hearing: Date: 06/24/2021, Time: 8:30 am, Dept.: 61 The address of the court is 330 W BROADWAY SAN DIEGO, CA-92101
A copy of this Order to Show Cause shall be published at least once each week for four successive weeks prior to the date set for hearing on the petition in the following newspaper of general circulation, printed in this county: THE DAILY TRANSCRIPT Due to the Covid-19 Pandemic, and the Court not conducting in-person hearings the following Order is Made: NO HEARING WILL OCCUR ON THE DATE SPECIFIED IN THE ORDER TO SHOW CAUSE. The Court will review the documents filed as of the date specified on the Order to Show Cause. If all requirements for a name change have been met as of the date specified, and no timely written objection has been received (required at least two court days before the date specified), the Petition will be granted without a hearing. If all the requirements have not been met as of the date specified, the Court will mail you a written order with further directions. If a timely objection is filed, the Court will set a hearing date and contact the parties by mail with further directions. IF YOU ARE A RESPONDENT OBJECTING TO THE NAME CHANGE, YOU MUST FILE A WRITTEN OBJECTION AT LEAST TWO COURT DAYS (excluding weekends and holidays) BEFORE THE DATE SPECIFIED. Do not Come to Court on the Specified Date, you will be notified by mail by the Court of a Future hearing date. Any Petition for the Name Change of a minor, that is signed by only one parent, must have this Attachment serviced along with the Petition and Order to Show Cause on the other, non-signing parent, and proof of service must be filed with the Court. IT IS SO ORDERED.
Date: 04/04/2021
Lorna A. Alksne
Judge of the Superior Court 5/11, 5/18, 5/25, 6/1/21
SD-3469751#

SUMMONS (CITACION JUDICIAL)
CASE NUMBER (Número del Caso): 37-2020-00045050-CL-PA-CTL NOTICE TO DEFENDANT (AVISO AL DEMANDADO): JOSE FLORES, and Does 1 to 10
YOU ARE BEING SUED BY PLAINTIFF (LO ESTÁ DEMANDANDO EL DEMANDANTE): STATE FARM MUTUAL

(R-2021-441)

RESOLUTION NUMBER R- 313530

DATE OF FINAL PASSAGE MAY 19 2021

A RESOLUTION OF THE COUNCIL OF THE CITY OF
SAN DIEGO ADOPTING THE CITY OF SAN DIEGO 2020
URBAN WATER MANAGEMENT PLAN (UWMP) AND 2020
WATER SHORTAGE CONTINGENCY PLAN (WSCP).

WHEREAS, the State of California, Department of Water Resources (DWR) requires urban water suppliers such as the City of San Diego (City) to submit Urban Water Management Plans (UWMPs) every five years, including a detailed water supply evaluation to ensure adequate supplies are available to meet existing and future demands; and

WHEREAS, the information collected from UWMPs submitted to the DWR as part of the Urban Water Management Planning Act is used for local, regional, and statewide water planning; thus, DWR reviews the submitted UWMPs to make sure they have addressed the requirements identified in the Water Code, and DWR submits a report to the Legislature summarizing the status of the plans for each five-year cycle; and

WHEREAS, Water Shortage Contingency Plans (WSCPs) are prepared in conjunction with UWMPs, with these WSCPs supporting the City's contingency planning in the event of a declared water emergency or enactment of more stringent restrictions on water use; and

WHEREAS, within WSCPs, urban water suppliers must provide procedures used in conducting an annual water supply and demand assessment, detail six standard water shortage levels and the shortage response actions, provide procedures for communication, compliance, legal authorities, financial consequences and other requirements as identified in the Water Code; and

WHEREAS, the City's UWMP includes a detailed water supply evaluation to ensure adequate supplies are available to meet existing and future demands, and the WSCP increases water shortage response levels from four levels to six levels as required by updated State requirements; and

WHEREAS, this action is a request for the City Council to approve these two related items: Subitem A), the City of San Diego 2020 Urban Water Management Plan (UWMP); and Subitem B), the supplemental 2020 Water Shortage Contingency Plan (WSCP) for DWR compliance review by the July 1, 2021 deadline; NOW, THEREFORE,

BE IT RESOLVED, by the City Council of the City of San Diego, that:

Subitem A), The City of San Diego's 2020 Urban Water Management Plan (UWMP), is hereby adopted for submission by the City to the State of California Department of Water Resources to meet California Water Code requirements for compliance review by the July 1, 2021 deadline.

BE IT FURTHER RESOLVED, that:

Subitem B), The City of San Diego's supplemental 2020 Water Shortage Contingency Plan (WSCP), is hereby adopted for submission by the City to the State of California Department of Water Resources to meet California Water Code requirements for compliance review by the July 1, 2021 deadline.

APPROVED: MARA W. ELLIOTT, City Attorney

By /s/ Raymond C. Palmucci
Raymond C. Palmucci
Deputy City Attorney

RCP:cw
05/05/21
Or.Dept: Public Utilities Department
CC No.: N/A
Doc. No.: 2653938

I certify that the foregoing Resolution was passed by the Council of the City of San Diego, at this meeting of 05/18/2021.

ELIZABETH S. MALAND
City Clerk

By /s/ Matthew R. Hilario
Deputy City Clerk

Approved: 5/19/21
(date)


TODD GLORIA, Mayor

Vetoed: _____
(date)

TODD GLORIA, Mayor

Passed by the Council of The City of San Diego on MAY 18 2021, by the following vote:

Councilmembers	Yeas	Nays	Not Present	Recused
Joe LaCava	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jennifer Campbell	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stephen Whitburn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monica Montgomery Steppe	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marni von Wilpert	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chris Cate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Raul A. Campillo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vivian Moreno	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sean Elo-Rivera	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Date of final passage MAY 19 2021.

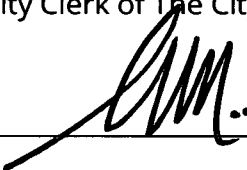
(Please note: When a resolution is approved by the Mayor, the date of final passage is the date the approved resolution was returned to the Office of the City Clerk.)

AUTHENTICATED BY:

TODD GLORIA
Mayor of The City of San Diego, California.

(Seal)

ELIZABETH S. MALAND
City Clerk of The City of San Diego, California.

By , Deputy

Office of the City Clerk, San Diego, California

Resolution Number R-313530

(619) 232-3486
 notices@sdtranscript.com

LEGAL NOTICES

FAX (619) 232-1239

Advertisement for Bids

Notice is hereby given that the San Diego Unified School District, acting by and through its governing board, will receive "ELECTRONIC-ONLY" bids for the furnishing of all labor, materials, transportation, equipment, and services for:

HEARST ELEMENTARY SCHOOL ASPHALT AND CONCRETE REPAIRS

A **mandatory site visit** is scheduled for 9:00 a.m. on **THURSDAY, MAY 27, 2021**, outside the main office of Hearst Elementary School, 6230 Del Cerro Blvd, San Diego, CA 92120. ALL CONTRACTORS MUST PREREGISTER WITH THE DISTRICT PRIOR TO ATTENDING THE SITE WALK. Please send only one representative per Company. Contact Mason Moyers mmoyers1@sandi.net for the link to preregister. PLEASE SEE BID FOR DETAILS (No. CP22-0039-39).

GENERAL CONTRACTORS ARE HIGHLY ENCOURAGED TO INVITE SUBCONTRACTORS TO PREREGISTER PRIOR TO THE SITE VISITS.

COVID-19 SITE WALK SAFETY PRECAUTIONS WILL BE ENFORCED:

- Prior to attending the site walk, all attendees will be required to preregister with the District and self-certify utilizing a Smartsheet form (contact mmoyers1@sandi.net) for the link to preregister) that they:
 - Have had no signs of a fever or a measured temperature of 100.0 degrees or greater, a cough or shortness of breath within the past 7 days.
 - Have not travelled on an airplane within the past 14 days. Have not travelled from another country within the past 14 days.
 - Have not had "close contact" with an individual diagnosed with COVID-19.
 - "Close contact" means living in the same household as a person who has tested positive for COVID-19, caring for a person who has tested positive for COVID-19, being within 6-feet of a person who has tested positive for COVID-19 for about 15 minutes, or coming in direct contact with secretions (e.g., sharing utensils, being coughed on) from a person who has tested positive for COVID-19, while that person was symptomatic.
 - Have not been asked to self-isolate or quarantine by their doctor or a local public health official.
 - Have not tested positive for COVID-19 and have been symptom free for 14 days.
- All attendees will be required to wash their hands prior to the start and at the end of the site walk at a designated bathroom or portable handwashing station.
- No physical contact is allowed. This means, but is not limited to: handshaking, high-fives, elbow bumping or fist bumping.
- Gloves will be handed out to all attendees immediately after they have washed their hands.
- Face coverings are required to be worn by all persons (district staff and visitors) and will not be provided.
 - Face coverings may be: bandanas, or "masks" made from home materials, such as T-shirts, pillow cases, cloth napkins. Wearing a face covering protects others that you may encounter, in case you do not realize you are infectious because you have no symptoms. These face coverings must cover one's nose and mouth.
 - Do not touch your face covering until you remove it, and then wash your hands. Stay 6-feet apart, even with a face covering.
- A "No Congregation" policy is in effect, individuals must implement social distancing by maintaining a minimum distance of 6-feet from other individuals.
- In areas where required social distancing is impossible, one (1) person at a time will be allowed to view a specific area.
- Only one (1) representative from a company is allowed to attend a site-walk.

All bids must be received electronically at or before **1:00 p.m. on JUNE 10, 2021**. Firms interested in submitting a bid package must go to <https://www.planetbids.com/portal/portal.cfm?CompanyID=43764> then search under "Bid Opportunities" for "Invitation number" CP22-0039-39, Hearst ES Asphalt and Concrete Repairs. For new vendors, please register under "New Vendor Registration".

The project estimate is between **\$400,000 and \$500,000**. This is not a PSA project and does not require prequalification. The District requires that Bidders possess any of the following classification(s) of California State Contractors License(s), valid and in good standing, at the time of bid opening and contract award: **A or other appropriate license, subject to District approval.**

Each bid shall be in accordance with all terms, conditions, plans, specifications and any other documents that comprise the bid package. The Bid and Contract Documents are available in three formats, hard copy, CD, or online from PlanWell. Hard copy bid documents are available at Crisp Imaging, 8375 Camino Santa Fe, Unit B, San Diego, CA 92121, phone number 858-535-0607, for a refundable payment of Two Hundred Dollars (\$200) per set. CD's are available for a non-refundable charge of \$50. Payments shall be made by check payable to SAN DIEGO UNIFIED SCHOOL DISTRICT. If the payment for Bid and Contract Documents is refundable, refunds will be processed by the District only if the Bid and Contract Documents, including all addendums, are returned intact and in good order to Crisp Imaging within ten (10) days of the issuance of the Final Bid Tabulation. Online documents are available for download on PlanWell through Crisp Imaging. Go to www.crispimg.com, click on PlanWell, Public Planroom, search SDUSD (Questions? 949-285-3171). All bids shall be submitted on bid forms furnished by the District in the bid package beginning May 18, 2021. Bid packages will **only be accepted via PlanetBids**.

SENATE BILL (SB) 854 REQUIREMENTS: Effective July 1, 2014, no contractor or subcontractor may be listed on a bid proposal, or awarded a contract for a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations (DIR) pursuant to Labor Code §1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code §1771.1(a)]. This project is subject to compliance monitoring and enforcement by the DIR.

Prime contractors must add the DIR Registration Number for each of their listed subcontractors to the Subcontractors List AND submit a certificate of registration for their own firm and those of their listed subcontractors upon request by the District. Failure of the bidding prime contractor to list their subcontractors DIR Registration Number on the Subcontractors List at time of bid may result in rejection of their bid as non-responsive.

Refer to the following DIR Website for further information: www.dir.ca.gov/Public-Works/PublicWorks.html

PREVAILING WAGES: Prevailing wage requirements apply to all public works projects and must be followed per Article 17 of the General Conditions of this bid. The applicable wage determination for this contract is 2021-1, and will be 2021-1 for the duration of the contract. This includes amendments, change orders, and warranty work relating to this contract number. The following is a link to the Department of Industrial Relations website to obtain rate information, and any applicable predetermine increases www.dir.ca.gov/opri/dprewagedetermination.htm.

DISABLED VETERAN BUSINESS ENTERPRISE PARTICIPATION PROGRAM: Pursuant to Resolution In Support of Service Disabled Veterans Owned Businesses (SDVOB) and Disabled Veteran Business Enterprises (DVBEB) approved on May 10, 2011 by the Board of Education, the Bidder is required to satisfy a minimum DVBE participation percentage of at least three percent (3%) for this project. In compliance with this Program, the Bidder shall satisfy all requirements enumerated in the bid package.

Each bid must be submitted on the Bid Form provided in the bid package and shall be accompanied by a satisfactory bid security in the form of either a bid bond executed by the bidder and Surety Company, or a certified or cashier's check in favor of the San Diego Unified School District, in an amount equal to ten percent (10%) of their bid value. Said bid security shall be given to guarantee that the Bidder will execute the contract as specified, within five (5) working days of notification by the District.

The District reserves the right to reject any and all bids and to waive any irregularities or informalities in any bids or in the bidding process. No bidder may withdraw his bid for a period of 120 days after the date set for the opening of bids. For information regarding bidding, please email mmoyers1@sandi.net.

SAN DIEGO UNIFIED SCHOOL DISTRICT
 Andrea O'Hara, M.A.
 Strategic Sourcing and Contracts Officer
 Strategic Sourcing and Contracts Department

Advertisement Dates:
 05/18/2021
 05/25/2021
 CP22-0039-39

CNSB#472765



CITY OF SAN DIEGO – 9192 Topaz Way, SAN DIEGO, CA 92101 PUBLIC NOTICE

Date: May 25, 2021

Subject: City Council to Consider 2020 Urban Water Management Plan for Adoption

The City of San Diego City Council adopted the City's 2020 Urban Water Management Plan (UWMP) at the May 18, 2021 Council Meeting. The 2020 UWMP includes the City's updated 2020 Water Shortage Contingency Plan (WSCP).

In compliance with the Urban Water Management Planning Act of the California Water Code (§10610-10656, §10608 and §10632) the UWMP and WSCP are required to evaluate sufficiency of City water supplies necessary to reliably meet demands over a 20-year planning horizon considering normal and dry years.

The City is required by the Urban Water Management Planning Act to prepare a Plan every five years. The City is required to submit the Plan by July 1, 2021 to the California Department of Water Resources. Public hearings for the Plan were held at Public Utilities Department's Independent Rate Oversight Committee (IROC) on March 15, 2021. City Council Environment Committee on April 15, 2021 and at the May 18, 2021 Council Meeting.

The final adopted Plan is available to the public and can be found on the City of San Diego website at:

<https://www.sandiego.gov/public-utilities/sustainability/water-supply>

CNSB#472031

ORDER TO SHOW CAUSE

FOR CHANGE OF NAME

Case No. 37-2021-00021648-CU-PT-CTL
 Superior Court of California, County of San Diego

Petitioner of: MARITRESS ELAZEGUI RAMOS for Change of Name

TO ALL INTERESTED PERSONS:

Petitioner MARITRESS ELAZEGUI RAMOS filed a petition with this court for a decree changing names as follows:

MARITRESS ELAZEGUI RAMOS to MARITRESS ELAZEGUI RAMIREZ

The Court orders that all persons interested in this matter appear before this court at the hearing indicated below to show cause, if any, why the petition for change of name should not be granted.

Any person objecting to the name changes described above must file a written objection that includes the reasons for the objection at least two court days before the matter is scheduled to be heard and must appear at the hearing to show cause why the petition should not be granted. If no written objection is timely filed, the court may grant the petition without a hearing.

Notice of Hearing:

Date: 07/06/2021, Time: 8:30 a.m., Dept: 61

The address of the court is 330 West Broadway, San Diego, CA 92101, Hall of Justice

A copy of this Order to Show Cause shall be published at least once each week for four successive weeks prior to the date set for hearing on the petition in the following newspaper of general circulation, printed in this county: THE DAILY TRANSCRIPT

Due to the Covid-19 Pandemic, and the Court not conducting in-person hearings the following Order is made: NO HEARING WILL OCCUR ON THE DATE SPECIFIED IN THE ORDER TO SHOW CAUSE.

The Court will review the documents filed as of the date specified on the Order to Show Cause.

If all requirements for a name change have been met as of the date specified, and no timely written objection has been received (required at least two court days before the date specified), the Petition will be granted without a hearing. If all the requirements have not been met as of the date specified, the Court will mail you a written order with further directions.

If a timely objection is filed, the Court will set a hearing date and contact the parties by mail with further directions.

IF YOU ARE A RESPONDENT OBJECTING TO THE NAME CHANGE, YOU MUST FILE A WRITTEN OBJECTION AT LEAST TWO COURT DAYS (excluding weekends and holidays) BEFORE THE DATE SPECIFIED. Do not Come to Court on the Specified Date, you will be notified by mail by the Court of a Future hearing date.

Any Petition for the Name Change of a minor, that is signed by only one parent, must have this Attachment serviced along with the Petition and Order to Show Cause on the other, non-signing parent, and proof of service must be filed with the Court. IT IS SO ORDERED.

Date: 05/14/2021

Lorna Alksne

Judge of the Superior Court

5/18, 5/25, 6/1, 6/8/21

SD-3472557#

ORDER TO SHOW CAUSE

FOR CHANGE OF NAME

Case No. 37-2021-00020850-CU-PT-CTL

Superior Court of California, County of San Diego

Petitioner of: TERRY MICAL SIMMONS for Change of Name

TO ALL INTERESTED PERSONS:

Petitioner TERRY MICAL SIMMONS filed a petition with this court for a decree changing names as follows:

TERRY MICAL SIMMONS to KYLER-MICAL ALEXANDRIS SIMMONS

The Court orders that all persons interested in this matter appear before this court at the hearing indicated below to show cause, if any, why the petition for change of name should not be granted.

Any person objecting to the name changes described above must file a written objection that includes the reasons for the objection at least two court days before the matter is scheduled to be heard and must appear at the hearing to show cause why the petition should not be granted. If no written objection is timely filed, the court may grant the petition without a hearing.

Notice of Hearing:

Date: 07/06/2021, Time: 8:30 a.m., Dept: 61

The address of the court is 330 West Broadway, San Diego, CA 92101

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Any Petition for the Name Change of a minor, that is signed by only one parent, must have this Attachment serviced along with the Petition and Order to Show Cause on the other, non-signing parent, and proof of service must be filed with the Court. IT IS SO ORDERED.

Date: 05/14/2021

Lorna Alksne

Judge of the Superior Court

5/18, 5/25, 6/1, 6/8/21

SD-3472557#

ORDER TO SHOW CAUSE

FOR CHANGE OF NAME

Case No. 37-2021-00019032-CU-PT-CTL

Superior Court of California, County of San Diego

Petitioner of: Teresa Gonzalez Rico for Change of Name

TO ALL INTERESTED PERSONS:

Petitioner Teresa Gonzalez Rico filed a petition with this court for a decree changing names as follows:

TERESA GONZALEZ RICO to KYLER-MICAL ALEXANDRIS SIMMONS

The Court orders that all persons interested in this matter appear before this court at the hearing indicated below to show cause, if any, why the petition for change of name should not be granted.

Any person objecting to the name changes described above must file a written objection that includes the reasons for the objection at least two court days before the matter is scheduled to be heard and must appear at the hearing to show cause why the petition should not be granted. If no written objection is timely filed, the court may grant the petition without a hearing.

Notice of Hearing:

Date: 06/28/2021, Time: 8:30 a.m., Dept.: C-61

The address of the court is 330 West Broadway, San Diego, CA 92101

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Date: 05/14/2021

Lorna Alksne

Judge of the Superior Court

5/18, 5/25, 6/1, 6/8/21

SD-3472557#

ORDER TO SHOW CAUSE

FOR CHANGE OF NAME

Case No. 37-2021-00019032-CU-PT-CTL
 Superior Court of California, County of San Diego

Petitioner of: TERRY MICAL SIMMONS for Change of Name

TO ALL INTERESTED PERSONS:

Petitioner TERRY MICAL SIMMONS filed a petition with this court for a decree changing names as follows:

TERRY MICAL SIMMONS to KYLER-MICAL ALEXANDRIS SIMMONS

The Court orders that all persons interested in this matter appear before this court at the hearing indicated below to show cause, if any, why the petition for change of name should not be granted.

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Date: 05/14/2021

Lorna Alksne

Judge of the Superior Court

5/18, 5/25, 6/1, 6/8/21

SD-3472557#

ORDER TO SHOW CAUSE

FOR CHANGE OF NAME

Case No. 37-2021-00019032-CU-PT-CTL

Superior Court of California, County of San Diego

Petitioner of: Teresa Gonzalez Rico for Change of Name

TO ALL INTERESTED PERSONS:

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TERESA GONZALEZ RICO to KYLER-MICAL ALEXANDRIS SIMMONS

The Court orders that all persons interested in this matter appear before this court at the hearing indicated below to show cause, if any, why the petition for change of name should not be granted.

Any person objecting to the name changes described above must file a written objection that includes the reasons for the objection at least two court days before the matter is scheduled to be heard and must appear at the hearing to show cause why the petition should not be granted. If no written objection is timely filed, the court may grant the petition without a hearing.

Notice of Hearing:

Date: 06/28/2021, Time: 8:30 a.m., Dept.: C-61

The address of the court is 330 West Broadway, San Diego, CA 92101

A copy of this Order to Show Cause shall be published at least once each week for four successive weeks prior to the date set for hearing on the petition in the following newspaper of general circulation, printed in this county: THE DAILY TRANSCRIPT

Due to the Covid-19 Pandemic, and the Court not conducting in-person hearings the following Order is made: NO HEARING WILL OCCUR ON THE DATE SPECIFIED IN THE ORDER TO SHOW CAUSE.

The Court will review the documents filed as of the date specified on the Order to Show Cause.

If all requirements for a name change have been met as of the date specified, and no timely written objection has been received (required at least two court days before the date specified), the Petition will be granted without a hearing. If all the requirements have not been met as of the date specified, the Court will mail you a written order with further directions.

If a timely objection is filed, the Court will set a hearing date and contact the parties by mail with further directions.

IF YOU ARE A RESPONDENT OBJECTING TO THE NAME CHANGE, YOU MUST FILE A WRITTEN OBJECTION AT LEAST TWO COURT DAYS (excluding weekends and holidays) BEFORE THE DATE SPECIFIED. Do not Come to Court on the Specified Date, you will be notified by mail by the Court of a Future hearing date.

Any Petition for the Name Change of a minor, that is signed by only one parent, must have this Attachment serviced along with the Petition and Order to Show Cause on the other, non-signing parent, and proof of service must be filed with the Court. IT IS SO ORDERED.

Date: 05/14/2021

Lorna Alksne

Judge of the Superior Court

5/18, 5/25, 6/1, 6/8/21

SD-3472557#

ORDER TO SHOW CAUSE

FOR CHANGE OF NAME

Case No. 37-2021-00019032-CU-PT-CTL

Superior Court of California, County of San Diego

Petitioner of: Teresa Gonzalez Rico for Change of Name

TO ALL INTERESTED PERSONS:

Petitioner Teresa Gonzalez Rico filed a petition with this court for a decree changing names as follows:

TERESA GONZALEZ RICO to KYLER-MICAL ALEXANDRIS SIMMONS

The Court orders that all persons interested in this matter appear before this court at the hearing indicated below to show cause, if any, why the petition for change of name should not be granted.

Any person objecting to the name changes described above must file a written objection that includes the reasons for the objection at least two court days before the matter is scheduled to be heard and must appear at the hearing to show cause why the petition should not be granted. If no written objection is timely filed, the court may grant the petition without a hearing.

APPENDIX

B

Urban Water Management Plan Act

Urban Water Management Planning Act

California Water Code Division 6, Part 2.6.

Chapter 1. General Declaration and Policy §10610-10610.4

Chapter 2. Definitions §10611-10618

Chapter 3. Urban Water Management Plans §10620-10645

Article 1. General Provisions §10620-10621

Article 2. Contents of Plans §10630-10634

Article 2.5. Water Service Reliability §10635

Article 3. Adoption and Implementation of Plans §10640-10645

Chapter 4. Miscellaneous Provisions §10650-10657

Chapter 1. General Declaration and Policy [10610 - 10610.4]

10610. This part shall be known and may be cited as the “Urban Water Management Planning Act.”

10610.2. (a) The Legislature finds and declares all of the following:

- (1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- (2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
- (3) A long-term, reliable supply of water is essential to protect the productivity of California’s businesses and economic climate, and increasing long-term water conservation among Californians, improving water use efficiency within the state’s communities and agricultural production, and strengthening local and regional drought planning are critical to California’s resilience to drought and climate change.
- (4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years now and into the foreseeable future, and every urban water supplier should collaborate closely with local land-use authorities to ensure water demand forecasts are consistent with current land-use planning.
- (5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
- (6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water

quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

- (7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
 - (8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
 - (9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.
- (b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

- (a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.
- (b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
- (c) Urban water suppliers shall be required to develop water management plans to achieve the efficient use of available supplies and strengthen local drought planning.

Chapter 2. Definitions [10611 - 10618]

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

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

10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Drought risk assessment" means a method that examines water shortage risks based on the driest five-year historic sequence for the agency's water supply, as described in subdivision (b) of Section 10635.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. “Person” means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.
10615. “Plan” means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area’s characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.
10616. “Public agency” means any board, commission, county, city and county, city, regional agency, district, or other public entity.
- 10616.5. “Recycled water” means the reclamation and reuse of wastewater for beneficial use.
10617. “Urban water supplier” means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.
- 10617.5. “Water shortage contingency plan” means a document that incorporates the provisions detailed in subdivision (a) of Section 10632 and is subsequently adopted by an urban water supplier pursuant to this article.
10618. “Water supply and demand assessment” means a method that looks at current year and one or more dry year supplies and demands for determining water shortage risks, as described in Section 10632.1.

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

Article 1. General Provisions [10620 - 10621]

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).
- (b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.
- (c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

- (d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation, efficient water use, and improved local drought resilience.
 - (2) Notwithstanding paragraph (1), each urban water supplier shall develop its own water shortage contingency plan, but an urban water supplier may incorporate, collaborate, and otherwise share information with other urban water suppliers or other governing entities participating in an areawide, regional, watershed, or basinwide urban water management plan, an agricultural management plan, or groundwater sustainability plan development.
 - (3) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.
 - (e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.
 - (f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.
- 10621.
- (a) Each urban water supplier shall update its plan at least once every five years on or before July 1, in years ending in six and one, incorporating updated and new information from the five years preceding each update.
 - (b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.
 - (c) An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage contingency plan as part of the supplier's general rate case filings.
 - (d) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).
 - (e) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

- (f) Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.

Article 2. Contents of Plans [10630 - 10634]

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied, while accounting for impacts from climate change.
- 10630.5. Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.
10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:
- (a) Describe the service area of the supplier, including current and projected population, climate, and other social, economic, and demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available. The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.
 - (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:
 - (1) A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.
 - (2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.
 - (3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.

- (4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:
 - (A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.
 - (B) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).
 - (C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
 - (D) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.
- (c) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.
- (d) (1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses

among water use sectors, including, but not necessarily limited to, all of the following:

- (A) Single-family residential.
 - (B) Multifamily.
 - (C) Commercial.
 - (D) Industrial.
 - (E) Institutional and governmental.
 - (F) Landscape.
 - (G) Sales to other agencies.
 - (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
 - (I) Agricultural.
 - (J) Distribution system water loss.
- (2) The water use projections shall be in the same five-year increments described in subdivision (a).
- (3) (A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.
- (B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.
- (C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.
- (4) (A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.
- (B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

- (i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.
 - (ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.
- (e) Provide a description of the supplier's water demand management measures. This description shall include all of the following:
 - (1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.
 - (B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:
 - (i) Water waste prevention ordinances.
 - (ii) Metering.
 - (iii) Conservation pricing.
 - (iv) Public education and outreach.
 - (v) Programs to assess and manage distribution system real loss.
 - (vi) Water conservation program coordination and staffing support.
 - (vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.
 - (2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.
- (f) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single-dry

water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

- (g) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
- (h) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

(Amended by Stats. 2019, Ch. 239, Sec. 8. (AB 1414) Effective January 1, 2020.)

10631.1.

- (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.
- (b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

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

10631.2.

- (a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:
 - (1) An estimate of the amount of energy used to extract or divert water supplies.
 - (2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.

- (3) An estimate of the amount of energy used to treat water supplies.
 - (4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.
 - (5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
 - (6) An estimate of the amount of energy used to place water into or withdraw from storage.
 - (7) Any other energy-related information the urban water supplier deems appropriate.
 - (b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.
 - (c) The Legislature finds and declares that energy use is only one factor in water supply planning and shall not be considered independently of other factors.
10632. (a) Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan that consists of each of the following elements:
- (1) The analysis of water supply reliability conducted pursuant to Section 10635.
 - (2) The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:
 - (A) The written decision making process that an urban water supplier will use each year to determine its water supply reliability.
 - (B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:
 - (i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.
 - (ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.
 - (iii) Existing infrastructure capabilities and plausible constraints.

- (iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.
 - (v) A description and quantification of each source of water supply.
- (3) (A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.
- (B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.
- (4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:
 - (A) Locally appropriate supply augmentation actions.
 - (B) Locally appropriate demand reduction actions to adequately respond to shortages.
 - (C) Locally appropriate operational changes.
 - (D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.
 - (E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.
- (5) Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following:
 - (A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.

- (B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1.
 - (C) Any other relevant communications.
- (6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.
- (7)
 - (A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.
 - (B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1.
 - (C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.
- (8) A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:
 - (A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).
 - (B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).
 - (C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.
- (9) For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.
- (10) Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.

- (b) For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.
 - (c) The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.
- 10632.1. An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.
- 10632.2. An urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in its water shortage contingency plan, as identified in subdivision (a) of Section 10632, or reasonable alternative actions, provided that descriptions of the alternative actions are submitted with the annual water shortage assessment report pursuant to Section 10632.1. Nothing in this section prohibits an urban water supplier from taking actions not specified in its water shortage contingency plan, if needed, without having to formally amend its urban water management plan or water shortage contingency plan.
- 10632.3. It is the intent of the Legislature that, upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, the board defer to implementation of locally adopted water shortage contingency plans to the extent practicable.
- 10632.5. (a) In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.
- (b) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.

- (c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.
10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:
- (a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.
 - (b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.
 - (c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.
 - (d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
 - (e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.
 - (f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.
 - (g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.
10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Article 2.5. Water Service Reliability [10635- 10635.]

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.
- (b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following:
- (1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.
 - (2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.
 - (3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.
 - (4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.
- (c) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.
- (d) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

- (e) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

Article 3. Adoption and Implementation of Plans [10640 - 10645]

10640. (a) Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.
- (b) Every urban water supplier required to prepare a water shortage contingency plan shall prepare a water shortage contingency plan pursuant to Section 10632. The supplier shall likewise periodically review the water shortage contingency plan as required by paragraph (10) of subdivision (a) of Section 10632 and any amendments or changes required as a result of that review shall be adopted pursuant to this article.
10641. An urban water supplier required to prepare a plan or a water shortage contingency plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.
10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.
10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.
10644. (a) (1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department,

the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

- (2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.
- (b) If an urban water supplier revises its water shortage contingency plan, the supplier shall submit to the department a copy of its water shortage contingency plan prepared pursuant to subdivision (a) of Section 10632 no later than 30 days after adoption, in accordance with protocols for submission and using electronic reporting tools developed by the department.
- (c) (1) (A) Notwithstanding Section 10231.5 of the Government Code, the department shall prepare and submit to the Legislature, on or before July 1, in the years ending in seven and two, a report summarizing the status of the plans and water shortage contingency plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans and water shortage contingency plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan and water shortage contingency plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans and water shortage contingency plans submitted pursuant to this part.
- (B) The department shall prepare and submit to the board, on or before September 30 of each year, a report summarizing the submitted water supply and demand assessment results along with appropriate reported water shortage conditions and the regional and statewide analysis of water supply conditions developed by the department. As part of the report, the department shall provide a summary and, as appropriate, urban water supplier specific information regarding various shortage response actions implemented as a result of annual supplier-specific water supply and demand assessments performed pursuant to Section 10632.1.
- (C) The department shall submit the report to the Legislature for the 2015 plans by July 1, 2017, and the report to the Legislature for the 2020 plans and water shortage contingency plans by July 1, 2022.
- (2) A report to be submitted pursuant to subparagraph (A) of paragraph (1) shall be submitted in compliance with Section 9795 of the Government Code.
- (d) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

10645. (a) Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.
- (b) Not later than 30 days after filing a copy of its water shortage contingency plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

Chapter 4. Miscellaneous Provisions [10650 - 10657]

10650. Any actions or proceedings, other than actions by the board, to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:
- (a) An action or proceeding alleging failure to adopt a plan or a water shortage contingency plan shall be commenced within 18 months after that adoption is required by this part.
- (b) Any action or proceeding alleging that a plan or water shortage contingency plan, or action taken pursuant to either, does not comply with this part shall be commenced within 90 days after filing of the plan or water shortage contingency plan or an amendment to either pursuant to Section 10644 or the taking of that action.
10651. In any action or proceeding to attack, review, set aside, void, or annul a plan or a water shortage contingency plan, or an action taken pursuant to either by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.
10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.
10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the board and the Public Utilities Commission, for the preparation of water management plans, water shortage contingency plans, or conservation plans; provided, that if the board or the Public Utilities Commission requires additional information concerning water conservation, drought response measures, or financial conditions to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of

this part shall be satisfied by any urban water demand management plan that complies with analogous federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

- 10654. An urban water supplier may recover in its rates the costs incurred in preparing its urban water management plan, its drought risk assessment, its water supply and demand assessment, and its water shortage contingency plan and implementing the reasonable water conservation measures included in either of the plans.
- 10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.
- 10656. An urban water supplier is not eligible for a water grant or loan awarded or administered by the state unless the urban water supplier complies with this part.
- 10657. The department may adopt regulations regarding the definitions of water, water use, and reporting periods, and may adopt any other regulations deemed necessary or desirable to implement this part. In developing regulations pursuant to this section, the department shall solicit broad public participation from stakeholders and other interested persons.

APPENDIX

C

UWMP Checklist

UWMP Checklist Arranged by Water Code Section

Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Sections 5.1 & 5.2 pgs 61-63
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.2 pg 63
10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5.2.1 page 63
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Not Applicable
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 1.6 pg 17
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1 pg 61
10608.4	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.2.1 pg 63
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 1.6 pg 17
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 1.5 pg 16 Appendix A
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Sections 5.3 - 5.7 pgs 67-74
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 1.6 pg 16 Appendix A
10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	Section 1.6 pg 17
10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information.	Summary	Sections 1.2, 2-7 pgs 11, 19, 37, 45, 61, 75, & 95
10631(a)	Describe the water supplier service area.	System Description	Section 2 pg 19
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 2.2 pg 22
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Section 2.1 pg 21
10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 2.1 pg 21
10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 2.1 pg 21

10631(a)	Describe the land uses within the service area.	System Description	Section 2.1 pg 21
10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Section 4.5 pg 60
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 4.2 pg 47
10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Sections 6.1-6.4 pgs 76-82
10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	Section 6.4 pg 80
10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Section 4.2.2, 4.3.3, 4.3.4 pgs 48, 51, & 52
10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 4.2 pg 47
10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 4.2 pg 47
10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 4.2 pg 47
10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	Section 4.2 pg 47
10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 4.2.1 pg 48
10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 4.2.2 pg 48
10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 4.4 & 6.4.3 pgs 54 & 81
10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Sections 3.1-3.3 pgs 37-44
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 pg 39
10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 3.2 pg 39
10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Section 5.3 - 5.7 pgs 67-74
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	Section 5.5 pgs 69-73
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	Sections 4.1 - 4.4 pgs 46 - 59
10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 4.4 & 6.4.3 pgs 60 & 81
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 1.5 pg 16

10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 1.5 pg 16
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 3.3.1 pg 41
10631.2(a)	The UWMP must include energy intensity information as stated in the code.		Section 7 pg 95
10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Appendix E
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 E, Section 1 pg 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 E, Section 1 pg 2
10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Appendix E, Section 2 pg 6
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 E, Section 2 pg 6
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 E, Section 4 pg 9
10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Appendix E, Section 4 pg 9
10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix E, Section 4 pg 9
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 E, Section 4 pg 9
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 E, Section 4 pg 9
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 E, Section 9 pg 25
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 E, Section 9 pg 25
10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix E, Section 8 pg 24
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 E, Section 9 pg 25

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 E, Section 9 pg 25
10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix E, Section 6 pg 18
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 E, Section 6 pg 17
10632(a)(8)(C)	Describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought.	Water Shortage Contingency Planning	Appendix E, Section 6 pg 17
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 E, Section 5 pg 16
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 E, Section 5 pg 16
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 E, Section 4 pg 9
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 4.3.1 pg 49
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 4.3.2 pg 50
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 4.3.3 pg 51
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 4.3.3 pg 51
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 4.3.4 pg 52
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 4.3.4 pg 52
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 6.6 pg 83
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Sections 6.1 - 6.3 pgs 76-80
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 6.9 pg 92
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 6.9 pg 92

10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Sections 6.1 - 6.3 pgs 76-80
10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Sections 6.2 & 6.3 pgs 77-80
10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change condition, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Sections 6.4, 6.7, & 6.8 pgs 80, 83, & 87
10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 1.6 pg 17
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	Section 1.6 pg 17
10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing.	Plan Adoption, Submittal, and Implementation	Section 1.6 pg 17 Appendix A
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	Appendix A
10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Appendix A
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 1.6 pg 17
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 1.6 pg 17
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Section 1.6 pg 17
10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 1.6 pg 17
10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 1.6 pg 17

APPENDIX

D

Department of Water Resources Compliance 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>			
CA3710020	City of San Diego	308,604	161,573
TOTAL		308,604	161,573
* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.			
NOTES:			

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:			

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
<input checked="" 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:	

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:

Submittal Table 2-4 Wholesale: Water Supplier Information Exchange (select one)☐

Supplier has informed more than 10 other water suppliers of water supplies available in accordance with Water Code Section 10631. Completion of the table below is optional. If not completed, include a list of the water suppliers that were informed.

Provide page number for location of the list.

☒

Supplier has informed 10 or fewer other water suppliers of water supplies available in accordance with Water Code Section 10631.

Complete the table below.

Water Supplier Name

Add additional rows as needed

California American Water Company

City of Del Mar

Santa Fe Irrigation District

San Dieguito Water District

City of Poway

Olivenhain Municipal Water District

Otay Water District

NOTES:

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

Population Served	2020	2025	2030	2035	2040	2045(<i>opt</i>)
	1,430,489	1,481,471	1,531,174	1,572,213	1,594,343	1,639,872

NOTES:

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

Population Served	2020	2025	2030	2035	2040	2045(<i>opt</i>)
	42,273	42,585	43,093	43,400	43,346	43,055

NOTES:

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable¹ 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	Indoor and Outdoor uses	Drinking Water	54,228
Multi-Family	Indoor and Outdoor uses	Drinking Water	35,370
Commercial	CII Indoor and Outdoor Uses	Drinking Water	38,615
Landscape	Landscape Irrigation	Drinking Water	17,175
Losses	Non-revenue water	Drinking Water	16,185
TOTAL			161,573
¹ Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.			
NOTES:			

Submittal Table 4-1 Wholesale: Demands for Potable and Non-Potable¹ 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 WUE data online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume ²
Add additional rows as needed			
Sales to other agencies	Raw and Drinking water	Drinking Water	9,085
Losses	Non-revenue water	Drinking Water	1,218
TOTAL			10,303
¹ Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4. Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.			
NOTES:			

Submittal Table 4-2 Retail: Use for Potable and Non-Potable¹ Water - Projected

Use Type	Additional Description (as needed)	Projected Water Use ² Report To the Extent that Records are Available				
<u>Drop down list</u> May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Single Family		54,814	54,360	53,794	54,197	55,159
Multi-Family		40,623	45,491	49,607	52,854	54,464
Commercial	CII Uses	47,402	50,090	52,784	55,239	56,873
Landscape	Large Irrigation	17,718	17,606	17,375	17,133	16,991
Losses	Non-revenue water	15,827	16,470	17,023	17,562	17,936
TOTAL		176,384	184,017	190,583	196,985	201,423

¹ Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.
 measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.

² Units of

NOTES:

Submittal Table 4-2 Wholesale: Use for Potable and Raw Water¹ - Projected

Use Type	Additional Description (as needed)	Projected Water Use ²				
<div>Drop down list</div> <div>May select each use multiple times</div> <div>These are the only Use Types that will be recognized by the WUEdata online submittal tool.</div>		Report To the Extent that Records are Available				
		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Sales to other agencies		11,518	11,518	11,518	11,518	11,518
Losses	Non-revenue water	1,191	1,240	1,281	1,322	1,350
TOTAL		12,709	12,758	12,799	12,840	12,868

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:

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>	161,573	176,384	184,017	190,583	196,985	201,423
Recycled Water Demand ¹ <i>From Table 6-4</i>	10,393	13,773	13,773	13,773	13,773	13,773
Optional Deduction of Recycled Water Put Into Long- Term Storage ²						
TOTAL WATER USE	171,966	190,157	197,790	204,356	210,758	215,196

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

NOTES:

Submittal Table 4-3 Wholesale: Total Water Use (Potable and Non-Potable)

	2020	2025	2030	2035	2040	2045 (opt)
Potable and Raw Water From Tables 4-1W and 4-2W	10,303	12,709	12,758	12,799	12,840	12,868
Recycled Water Demand* From Table 6-4W	2,466	0	0	0	0	0
TOTAL WATER DEMAND	12,769	12,709	12,758	12,799	12,840	12,868

**Recycled water demand fields will be blank until Table 6-4 is complete.*

NOTES:

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss ^{1,2}
07/2015	14,733
07/2016	14,993
07/2017	13,762
07/2018	14,995
07/2019	15,843

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:

OPTIONAL Table 4-4 Wholesale: Last Five Years of Water Loss Audit Reporting

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss ^{1,2}
07/2015	1,109
07/2016	1,129
07/2017	1,036
07/2018	1,129
07/2019	1,192

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:

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections**Are Future Water Savings Included in Projections?**

(Refer to Appendix K of UWMP Guidebook)

Drop down list (y/n)

Yes

If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.

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Are Lower Income Residential Demands Included In Projections?*Drop down list (y/n)*

Yes

NOTES:

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

Baseline Period	Start Year *	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	1996	2005	171	142
5 Year	2004	2008	163	

**All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)*

NOTES:

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>		
101	0	101	142	Yes
<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: 2020 Target is 142 GPCD, actual is 101 GPCD, 71% of the target				

Submittal Table 6-1 Retail: Groundwater Volume Pumped						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
<input type="checkbox"/>	All or part of the groundwater described below is desalinated.					
Groundwater Type <i>Drop Down List</i> May use each category multiple times	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
Add additional rows as needed						
Alluvial Basin	Santee-El Monte	0	18.8	38	25.8	51.6
TOTAL		0	19	38	26	52
* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.						
NOTES:						

Submittal Table 6-1 Wholesale: Groundwater Volume Pumped						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
<input type="checkbox"/>	All or part of the groundwater described below is desalinated.					
Groundwater Type	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:						

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>
San Diego Public Utilities Department	Metered	164,000	San Diego Public Utilities Department	Point Loma Wastewater Treatment Plant	Yes	No
San Diego Public Utilities Department	Metered	18,208	San Diego Public Utilities Department	North City Water Reclamation Plant	Yes	No
San Diego Public Utilities Department	Metered	7,323	San Diego Public Utilities Department	South Bay Water Reclamation Plant	Yes	No
Total Wastewater Collected from Service Area in 2020:		189,531				
* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3 .						
NOTES:						

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

☐

No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	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
Point Loma	Pacific Ocean	Pacific Ocean		Ocean outfall	Yes		164,000	164,000	0	0	
North City Water	Sewer	Sewer		Other	Yes	Tertiary	18,208	9,256	8,300	771	
South Bay Water	Pacific Ocean	Pacific Ocean		Ocean outfall	Yes	Tertiary	7,323	4,942	2,093	1,694	
Total							189,531	178,198	10,393	2,466	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: Point Loma WWTP treatment level is chemically enhanced primary. The wastewater treated volumes for the North City and South Bay Water Reclamation Plants do not represent any sludge volumes sent to PLWWTP; as a result there is a discrepancy in wastewater collected (Table 6-2R) and wastewater treated (Table 6-3R) at the plants.

Submittal Table 6-3 Wholesale: Wastewater Treatment and Discharge Within Service Area in 2020											
<input checked="" type="checkbox"/>	Wholesale Supplier neither distributes nor provides supplemental treatment to recycled water. 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
Add additional rows as needed											
Total							0	0	0	0	0
¹ Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3. 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 ² If the											
NOTES:											

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area

☐

Recycled water is not used and is not planned for use within the service area of the supplier.
The supplier will not complete the table below.

Name of Supplier Producing (Treating) the Recycled Water:

Name of Supplier Operating the Recycled Water Distribution System:

Supplemental Water Added in 2020 (volume) *Include units*

Source of 2020 Supplemental Water

Beneficial Use Type <i>Insert additional rows if needed.</i>	Potential Beneficial Uses of Recycled Water (Describe)	Amount of Potential Uses of Recycled Water (Quantity) <i>Include volume units ¹</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 (exc golf courses)										
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)			Landscape irrigation and industrial reuse combined	Tertiary	10,393	13,773	13,773	13,773	13,773	13,773
Total:					10,393	13,773	13,773	13,773	13,773	13,773
2020 Internal Reuse										

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

NOTES:

Submittal Table 6-4 Wholesale: Current and Projected Retailers Provided Recycled Water Within Service Area

<input type="checkbox"/>	Recycled water is not directly treated or distributed by the Supplier. Supplier will not complete the table below.							The
Name of Receiving Supplier or Direct Use by Wholesaler	Level of Treatment <i>Drop down list</i>	2020*	2025*	2030*	2035*	2040*	2045* <i>(opt)</i>	
<i>Add additional rows as needed</i>								
Otay Water District	Tertiary	1,694						
City of Poway	Tertiary	391						
Olivenhain Municipal Water	Tertiary	380						
Total		2,466	0	0	0	0	0	
* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.								
NOTES:								

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



Recycled water was not used in 2015 nor projected for use in 2020.
The supplier will not complete the table below. 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)		
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)	12,780	10,393
Total	12,780	10,393

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

NOTE:

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

<input type="checkbox"/>	Recycled water was not used or distributed by the supplier in 2015, nor projected for use or distribution in 2020. The wholesale supplier will not complete the table below.	
Name of Receiving Supplier or Direct Use by Wholesaler	2015 Projection for 2020*	2020 Actual Use*
<i>Add additional rows as needed</i>		
Otay Water District	4,600	1,694
City of Poway	750	391
Olivenhain Municipal Water	500	380
Total	5,850	2,466
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.		
NOTES:		

Submittal Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
<input type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use *
<i>Add additional rows as needed</i>			
Pure Water San Diego Phase I	Potable Reuse	2030	33,600
Pure Water San Diego Phase 2	Potable Reuse	2035	59,360
Total			92,960
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.			
NOTES:			

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
<input type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
<input type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down List</i>	Expected Increase in Water Supply to Supplier* <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Supplier Name</i>				
<i>Add additional rows as needed</i>						
Santee El Monte Groundwater Basin	No		Pumped groundwater used for "pump and blend" raw water applications	2025	Average Year	50
Surface Water Reservoirs: Barrett, El Capitan, Hodges, Lower Otay, Morena, San Vicente, Sutherland	No			2025	Average Year	2,729
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.						
NOTES:						

Submittal Table 6-7 Wholesale: Expected Future Water Supply Projects or Programs						
<input type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
<input type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other suppliers?		Description <i>(if needed)</i>	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down list</i>	Expected Increase in Water Supply to Supplier*
	<i>Drop Down Menu</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:						

Submittal Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2020		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
Add additional rows as needed				
Surface water (not desalinated)	Reservoirs	19,686	Drinking Water	19,686
Groundwater (not desalinated)	Includes both raw water and drinking water	52	Drinking Water	52
Recycled Water	Recycled	10,393	Recycled Water	10,393
Purchased or Imported Water	From SDCWA (includes both raw water and drinking water)	140,353	Drinking Water	140,353
Total		170,484		170,484
<i>*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</i>				
NOTES:				

Submittal Table 6-8 Wholesale: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2020		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
Add additional rows as needed				
Recycled Water	Recycled	2,466	Recycled Water	2,466
Purchased or Imported Water	From SDCWA (includes both raw water and drinking water)	10,224	Drinking Water	10,224
Total		12,690		12,690
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.				
NOTES:				

Submittal Table 6-9 Retail: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply * Report To the Extent Practicable									
		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											
Surface water (not desalinated)		22,415	22,415	22,415	22,415	22,415	22,415	22,415	22,415	22,415	22,415
Groundwater (not desalinated)	Includes both raw water and drinking water	100	100	100	100	100	100	100	100	100	100
Recycled Water		13,773	13,773	13,773	13,773	13,773	13,773	13,773	13,773	13,773	13,773
Recycled Water	Pure Water Phase 1	16,800	16,800	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600
Recycled Water	Pure Water Phase 2					59,360	59,360	59,360	59,360	59,360	59,360
Purchased or Imported Water	From SDCWA (includes both raw water and drinking water)	137,069	137,069	127,902	127,902	75,108	75,108	81,510	81,510	85,948	85,948
	Total	190,157	190,157	197,790	197,790	204,356	204,356	210,758	210,758	215,196	215,196
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.											
NOTES: Surface water includes local surface water plus supply from the City-Lake Cuyamaca Interagency Agreement											

Submittal Table 6-9 Wholesale: Water Supplies — Projected

Water Supply		Projected Water Supply* Report To the Extent Practicable									
		2025		2030		2035		2040		2045 (opt)	
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	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											
Recycled Water		0		0		0		0		0	
Purchased or Imported Water	Potable and raw water sales to other agencies	12,709	12,709	12,758	12,758	12,799	12,799	12,840	12,840	12,868	12,868
Total		12,709	12,709	12,758	12,758	12,799	12,799	12,840	12,840	12,868	12,868
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.											
NOTES:											

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

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020	Available Supplies if Year Type Repeats	
		<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	2019		100%
Single-Dry Year	2014		104%
Consecutive Dry Years 1st Year	2013		100%
Consecutive Dry Years 2nd Year	2014		104%
Consecutive Dry Years 3rd Year	2015		104%
Consecutive Dry Years 4th Year	2016		102%
Consecutive Dry Years 5th Year	2017		102%
Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.			
NOTES:			

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

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000	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	2019		100%
Single-Dry Year	2014		104%
Consecutive Dry Years 1st Year	2013		100%
Consecutive Dry Years 2nd Year	2014		104%
Consecutive Dry Years 3rd Year	2015		104%
Consecutive Dry Years 4th Year	2016		102%
Consecutive Dry Years 5th Year	2017		102%

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. Suppliers may create an additional worksheet for the additional tables.

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

NOTES:

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045 (<i>Opt</i>)
Supply totals (<i>autofill from Table 6-9</i>)	190,157	197,790	204,356	210,758	215,196
Demand totals (<i>autofill from Table 4-3</i>)	190,157	197,790	204,356	210,758	215,196
Difference	0	0	0	0	0

NOTES:

Submittal Table 7-2 Wholesale: Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045 (<i>Opt</i>)
Supply totals (<i>autofill from Table 6-9</i>)	12,709	12,758	12,799	12,840	12,868
Demand totals (<i>autofill fm Table 4-3</i>)	12,709	12,758	12,799	12,840	12,868
Difference	0	0	0	0	0

NOTES:

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals*	197,460	205,370	212,174	218,808	223,406
Demand totals*	197,460	205,370	212,174	218,808	223,406
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:					

Submittal Table 7-3 Wholesale: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals*	12,709	12,758	12,799	12,840	12,868
Demand totals*	12,709	12,758	12,799	12,840	12,868
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:					

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison

		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	190,157	197,790	204,356	210,758	215,196
	Demand totals	190,157	197,790	204,356	210,758	215,196
	Difference	0	0	0	0	0
Second year	Supply totals	197,460	205,370	212,174	218,808	223,406
	Demand totals	197,460	205,370	212,174	218,808	223,406
	Difference	0	0	0	0	0
Third year	Supply totals	197,460	205,370	212,174	218,808	223,406
	Demand totals	197,460	205,370	212,174	218,808	223,406
	Difference	0	0	0	0	0
Fourth year	Supply totals	195,026	202,843	209,568	216,124	220,670
	Demand totals	195,026	202,843	209,568	216,124	220,670
	Difference	0	0	0	0	0
Fifth year	Supply totals	195,026	202,843	209,568	216,124	220,670
	Demand totals	195,026	202,843	209,568	216,124	220,670
	Difference	0	0	0	0	0
Sixth year (optional)	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:

Submittal Table 7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison

		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	12,709	12,758	12,799	12,840	12,868
	Demand totals	12,709	12,758	12,799	12,840	12,868
	Difference	0	0	0	0	0
Second year	Supply totals	12,709	12,758	12,799	12,840	12,868
	Demand totals	12,709	12,758	12,799	12,840	12,868
	Difference	0	0	0	0	0
Third year	Supply totals	12,709	12,758	12,799	12,840	12,868
	Demand totals	12,709	12,758	12,799	12,840	12,868
	Difference	0	0	0	0	0
Fourth year	Supply totals	12,709	12,758	12,799	12,840	12,868
	Demand totals	12,709	12,758	12,799	12,840	12,868
	Difference	0	0	0	0	0
Fifth year	Supply totals	12,709	12,758	12,799	12,840	12,868
	Demand totals	12,709	12,758	12,799	12,840	12,868
	Difference	0	0	0	0	0
Sixth year (optional)	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:

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

2021	Total
Total Water Use	176,067
Total Supplies	176,067
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

2022	Total
Total Water Use	183,984
Total Supplies	183,984
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

2023	Total
Total Water Use	191,901
Total Supplies	191,901
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

2024	Total
Total Water Use	199,818
Total Supplies	199,818
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

2025	Total
Total Water Use	207,735
Total Supplies	207,735
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

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%	Expanded Year-Round Permanent Mandatory Water Restrictions (consumer demand reduction of up to 10% is required)
2	Up to 20%	Drought Watch Condition (consumer demand reduction of up to 20% is required)
3	Up to 30%	Drought Alert Condition (consumer demand reduction of up to 30% is required)
4	Up to 40%	Drought Critical Condition (consumer demand reduction of up to 40% is required)
5	Up to 50%	Drought Crisis Condition (consumer demand reduction of up to 50% is required)
6	>50%	Drought Emergency Condition (consumer demand reduction greater than 50% is required)

NOTES:

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 WUEdata 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>
Add additional rows as needed				
1	Other	17,096 (Total for Shortage Level 1)	Expand enforcement of permanent water waste prohibitions	
	Other		Increase voluntary conservation	
	Expand Public Information Campaign			
2	Other - Require automatic shut of hoses	34,192 (Total for Shortage Level 2)		•Warning letter •Notice of Violation •Administrative Citations with penalties of \$100, \$250, \$500, and up to \$1,000 •Referral to the City Attorney for civil or criminal prosecution •Water service restricted or shut off
	Landscape - Limit landscape irrigation to specific days			
	Landscape - Limit landscape irrigation to specific times			
	Other		Prohibition of car washing	
	Other		Limit washing of mobile equipment to specific times	
	Other		Use of recycled water for construction	
3	Other - Prohibit use of potable water for washing hard surfaces	51,288 (Total for Shortage Level 3)	Prohibition on street cleaning	•Warning letter •Notice of Violation •Administrative Citations with penalties of \$100, \$250, \$500, and up to \$1,000 •Referral to the City Attorney for civil or criminal prosecution •Water service restricted or shut off
	Landscape - Limit landscape irrigation to specific times			
	Water Features - Restrict water use for decorative water features, such as fountains			
	Other		Water from fire hydrants is limited to firefighting	
4	Landscape - Limit landscape irrigation to specific times	68,384 (Total for Shortage Level 4)		•Warning letter •Notice of Violation •Administrative Citations with penalties of \$100, \$250, \$500, and up to \$1,000 •Referral to the City Attorney for civil or criminal prosecution •Water service restricted or shut off
	Water Features - Restrict water use for decorative water features, such as fountains			
	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water			
	Other water feature or swimming pool restriction			
	Other		Increase initiative to install pressure regulators to all homes and businesses that do not currently have one and require a downward adjustment to 60 pounds per square inch (PSI)	
	Other		Suspension of specific municipal uses such as hydrant flushing, street cleaning, and water-based recreation.	
5	Landscape - Prohibit all landscape irrigation	85,481 (Total for Shortage Level 5)		•Warning letter •Notice of Violation •Administrative Citations with penalties of \$100, \$250, \$500, and up to \$1,000 •Referral to the City Attorney for civil or criminal prosecution •Water service restricted or shut off
	Water Features - Restrict water use for decorative water features, such as fountains			
	Other water feature or swimming pool restriction			
	Other		Increase initiative to install pressure regulators to all homes and businesses that do not currently have one and require a downward adjustment of all pressure regulators from 60 PSI to 50 PSI	
6	Other	> 85,481 (Total for Shortage Level 6)	Use of flow restrictors on accounts that are non-responsive to outreach, and other mandatory restrictions and enforcement, as necessary	•Warning letter •Notice of Violation •Administrative Citations with penalties of \$100, \$250, \$500, and up to \$1,000 •Referral to the City Attorney for civil or criminal prosecution •Water service restricted or shut off
	Landscape - Prohibit all landscape irrigation			
	Other		Increase initiative to install pressure regulators to all homes and businesses that do not currently have one and require a downward adjustment of all pressure regulators from 60 PSI to 50 PSI	
NOTES: Shortage Gap reduction is based on the percentage reduction multiplied by the total 2020 potable water demands (that include wholesale). Units of acre-feet (AF)				

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>
Add additional rows as needed			
1			
2			
3	Stored emergency supply	14,000 AFY ¹	SDCWA Carryover Storage Program
4	Stored emergency supply	14,000 AFY ¹	SDCWA Carryover Storage Program
5	Other actions (describe)		Locally appropriate supply augmentation as per SDCWA WSCP
	Stored emergency supply	128,221 AFY ²	City emergency storage withdrawals
6	Other actions (describe)		Locally appropriate supply augmentation as per SDCWA WSCP
	Stored emergency supply	128,221 AFY ²	City emergency storage withdrawals

NOTES:

1Water to be partitioned between all SDCWA member agencies (acre-feet per year)

2City emergency facilities can be used to deliver emergency water supply in a situation where SDCWA has insufficient water available to supply at

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>		
Carlsbad	Yes	Yes
Chula Vista	Yes	Yes
Coronado	Yes	Yes
Del Mar	Yes	Yes
El Cajon	Yes	Yes
Encinitas	Yes	Yes
Escondido	Yes	Yes
Imperial Beach	Yes	Yes
La Mesa	Yes	Yes
Lemon Grove	Yes	Yes
National City	Yes	Yes
Oceanside	Yes	Yes
Poway	Yes	Yes
San Diego	Yes	Yes
San Marcos	Yes	Yes
Santee	Yes	Yes
Solana Beach	Yes	Yes
Vista	Yes	Yes
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:		

Submittal Table 10-1 Wholesale: Notification to Cities and Counties (select one)

<input checked="" type="checkbox"/>	Supplier has notified more than 10 cities or counties in accordance with Water Code Sections 10621 (b) and 10642. Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.	
See Table 10-1 R	Provide the page or location of this list in the UWMP.	
<input type="checkbox"/>	Supplier has notified 10 or fewer cities or counties. Complete the table below.	
City Name	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
County Name <small>Drop Down List</small>	60 Day Notice	Notice of Public Hearing
<i>Add additional rows as needed</i>		
NOTES:		

SB X7-7 2020 Compliance Form

The SB X7-7 2020 Compliance Form is for the calculation of 2020 compliance only. All retail suppliers must complete the SB X7-7 Compliance Form. Baseline and target calculations are done in the SB X 7-7 Verification Form.

The SB X7-7 Verification Form is for the calculation of baselines and targets and is a separate workbook from the SB X7-7 2020 Compliance Form. Most Suppliers will have completed the SB X7-7 Verification Form with their 2015 UWMP and do not need to complete this form again in 2020. See Chapter 5 Section 5.3 of the UWMP Guidebook for more information regarding which Suppliers must, or may, complete the SB X7-7 Verification Form for their 2020 UWMP. 2020 compliance calculations are done in the SB X7-7 2020 Compliance Form.

Process Water Deduction tables will not be entered into WUE Data Portal tables.

SB X7-7 tables 4-C, 4-C.1, 4-C.2, 4-C.3, 4-C.4 and 4-D

A supplier that will use the process water deduction will complete the appropriate tables in Excel, submit them as a separate upload to the WUE Data Portal, and include them in its UWMP.

Where to submit? Suppliers submit the completed table data and UWMPs (including the Water Shortage Contingency Plan) electronically through the WUE Data Portal (<https://wuedata.water.ca.gov/>). The portal will be updated in Spring 2021 and will be announced to the urban listserv, DWR webpage and WUE Data Portal opening page when it is available for plan and table submittals.

Unlocking templates (use with caution): The templates provided in this workbook are formatted to mirror the structure of information that is submitted through the WUE Data Portal for the electronic submission of Submittal Tables in the UWMP. The tables are offered in a protected (locked) version to maintain the structure of the templates. However, for those needing to adjust the tables for their own planning needs beyond the Submittal Tables, the password to 'unprotect' each worksheet is 'dwr' (no quotes). To unprotect the worksheet, go to the Review tab, select Unprotect Sheet, and enter the password 'dwr' in the pop-up (no quotes). Preparers will still need to submit the information using the original template structure provided. To redownload the templates in their original format, visit <https://wuedata.water.ca.gov> in the Resources button of the Urban Water Management Plan section (no login necessary).

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:

SB X7-7 Table 2: Method for 2020 Population Estimate

Method Used to Determine 2020 Population
(may check more than one)



**1. Department of Finance (DOF) or
American Community Survey (ACS)**



2. Persons-per-Connection Method



3. DWR Population Tool



4. Other
DWR recommends pre-review

NOTES:

SB X7-7 Table 3: 2020 Service Area Population**2020 Compliance Year Population****2020**

1,430,489

NOTES: Table 5-1 UWMP Document

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>	
	161,573			-		-	161,573

* 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:

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		Combined	
This water source is (check one) :			
<input checked="" 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
	161,573	-	161,573
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			

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
	161,573		0%	NO
NOTES:				

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

(For

use only by agencies that are deducting process water using Criteria 2)

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
		1,430,489	-	NO

NOTES:

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
	161,573		161,573	1,430,489	101	YES

NOTES:

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 SB X7-7 Table 3</i>	2020 GPCD
161,573	1,430,489	101
NOTES:		

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				
101	-	-	-	-	101	142	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:

Urban Water Supplier:City of San Diego**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	10/1/2019	Urban Water Supplier Operational Control		
End Date	9/29/2020			
<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>		320600		320600
<i>Energy Consumed (kWh)</i>		36859669		36859669
<i>Energy Intensity (kWh/vol. converted to MG)</i>		352.8	0.0	352.8
Quantity of Self-Generated Renewable Energy				
2272785 kWh				
Data Quality (<i>Estimate, Metered Data, Combination of Estimates and Metered Data</i>)				
<u>Combination of Estimates and Metered Data</u>				
Data Quality Narrative:				
Narrative:				
Self-Generated Renewable Energy consists of Solar Production at Alvarado and Otay Treatment Plants				

We are submitting O-1B instead of A or C because all the components are not broken out (ie, water storage, transfers)

Sum of all water management processes, per cell D9, represents water treatment (Table 7-3) and conveyance (Table 7-4)

Cell D11 is the sum of 168,014 from Table 7-4 (volume of water moved which would include the 152,586 volume from Table 7-3) PLUS the 152,586 - verage energy intensity works out this way even though it looks like double counting

Urban Water Supplier:

City of San Diego

Table O-2: Recommended Energy Reporting - Wastewater & Recycled Water						
Enter Start Date for Reporting Period 10/1/2019 End Date 9/29/2020		Urban Water Supplier Operational Control				
		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				
Volume of Wastewater Entering Process (volume units selected above)			112089			112089
Wastewater Energy Consumed (kWh)			83508501			83508501
Wastewater Energy Intensity (kWh/volume)			2286.4	0.0	0.0	2286.4
Volume of Recycled Water Entering Process (volume units selected above)			12427			12427
Recycled Water Energy Consumed (kWh)			472122			472122
Recycled Water Energy Intensity (kWh/volume converted to MG)			116.6	0.0	0.0	116.6

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

kWh

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

Combination of Estimates and Metered Data

Data Quality Narrative:

Narrative:

APPENDIX

E

Water Shortage Contingency Plan



CITY OF SAN DIEGO WATER SHORTAGE CONTINGENCY PLAN

Updated 2020

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INTRODUCTION

Due to increasing strain caused by more frequent and extreme drought, the City must be prepared for potential constraints on its local and imported water supply. This Water Shortage Contingency Plan (WSCP) examines the City's contingency plan in the event of a declared water emergency or enactment of more stringent restrictions on water use.

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

The City encourages its residents to use water wisely at all times, and the City of San Diego Municipal Code formalizes the WSCP in its Emergency Water Regulations in Chapter 6, Article 7, Division 38. These Emergency Water Regulations specify water use restrictions that are in effect at all times (Water Waste Prohibitions under §67.3803) and authorizes the City to determine and declare water shortages and water shortage emergencies in its service area. Prior to the CWC amendments approved in SB 606 and AB 1668, the City's Emergency Water Regulations specified four "drought condition levels." In coordination with the new CWC §10632 (a)(3), these regulations were revised to specify six drought condition levels which include a graduated scale of water use restrictions (Municipal Code §67.3805-08) that take effect in each level. Subsequently, an additional two levels of water shortage have been defined for this WSCP. During the most recent drought, the Emergency Water Regulations have served as an effective tool in reducing water use.

On July 1, 2015, the City declared a Drought Response Level 2: Drought Alert Condition to comply with a State mandate requiring the City of San Diego to reduce its water usage by 16%. The Emergency Water Regulations were amended by the City on June 29, 2015, to satisfy the California State Water Resources Control Board's (SWRCB's) Emergency Conservation Regulations that took effect on May 18, 2015. On January 26, 2017, SDCWA declared an end to drought conditions in the San Diego region. The City will continue to review its Emergency Water Regulations in light of the SWRCB's Emergency Conservation Regulations and will address any deficiencies as information becomes available. In the meantime, before formalizing any future amendments to the Emergency Water Regulations, any additional conservation requirements imposed by the SWRCB will be available on the City's Mandatory Water Use Restrictions webpage at: <http://www.sandiego.gov/water/conservation/drought/prohibitions.shtml>.

1. ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT

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

The City Council, in accordance with the provisions of the CWC, will determine if a supply shortage exists and declare any foreseen water shortage level based on the results of the Annual Assessment, which will then be included in the Annual Assessment Report submitted to the state. The evaluation is conducted by the City Public Utilities Department to determine if a shortage declaration is needed, and at what level. The Annual Assessment Report will document any anticipated shortage, any triggered shortage response actions, associated compliance and enforcement actions, and communication actions. More information on shortage response actions is included in *Chapter 4 – Shortage Response Actions*. Reasonable alternative actions can be used to address identified water shortages, provided that descriptions of alternative actions are submitted with the Annual Assessment Report.

1.1 Key Input: Projected Water Supply

This WSCP identifies key inputs and methodology needed to evaluate available water supply. Under normal (non-shortage) conditions, the City can purchase as much water as necessary to meet demands from the SDCWA. When that supply (imported supply) is under shortage conditions, the amount of shortage (allocation of shortage) specific to the City is determined in a processed lead by SDCWA. Evaluation of City supply begins with SDCWA's own supply evaluation as the City receives most of its water supply from the SDCWA regional supply system. SDCWA uses the availability of City's local supplies to determine the City's imported water allocation. As such, the City's imported water supply, in years in which imported supply is short, is dependent on availability of local supplies. To inform SDCWA's allocation process, the City must describe and quantify each source of City-owned water supply. The City's local water supply portfolio consists of the following sources:

- Local surface water
- Groundwater
- Non-potable (recycled) water
- Potable reuse (Pure Water)
- City emergency storage

After evaluating the availability of local supply, SDCWA applies allocation formulas to determine the allocation of imported supply specifically to the City in those shortage years.

1.1.1 Evaluating Available Water Supply

The City will evaluate the current year available supply and one dry year available supply in its Annual Assessment. The available water supply evaluation will consider hydrological and regulatory conditions. The methodology for determining the available supply from each water source is as follows:

Local Sources:

- **Local surface water:** On April 1 determine 1) storage in each reservoir and 2) storage above emergency storage pool in each reservoir.
- **Groundwater:** Determine last year's production and potential production constraints.
- **Non-potable (recycled) water:** Determine recent production and supply.

- **Potable reuse (Pure Water):** Not currently applicable.

Imported Sources:

- **Imported water:** Allocation determined by SDCWA.
- **SDCWA Carryover:** Determine available supply to the City based on SDCWA WSCP and the most recent information.
- **SDCWA and City emergency storage:** Not applicable for non-emergency conditions.

1.1.2 SDCWA Drought Contingency Strategy (Imported Water)

Coordination with SDCWA is crucial to accurately quantify the City's available drought contingency water supply; As the City's direct wholesale water supplier responsible for imported water as well as regional wholesale supply and emergency storage management, SDCWA coordinates all imported supply on behalf of its member agencies. SDCWA also determines the regional water shortage allocation when shortages exist.

In 2008, SDCWA's Board of Directors (Board) approved the Model Drought Response Conservation Program Ordinance (Model Drought Ordinance), which was intended to assist SDCWA's member agencies, including the City, in regional consistency in drought response levels and messaging to the public and media. In addition, the Board adopted Resolution 2008-11 that establishes procedures to administer the supply allocation methodology contained in the Drought Management Plan (DMP). Using lessons from previous shortage periods, the DMP's supply allocation methodology was updated in 2012, and the DMP was renamed the Water Shortage and Drought Response Plan (WSDRP).

To ensure that SDCWA and its member agencies continue to proactively plan for future water supply shortages, SDCWA revised its WSDRP and renamed it the Water Shortage Contingency Plan. SDCWA's WSCP is consistent with the state's long-term framework contained in the April 2017 Final Report, *Making Water Conservation a California Way of Life, Implementing Executive Order B-37-16*. The long-term framework builds on the Executive Order and provides recommendations on implementation of long-term improvements to water supply management to support water conservation. SDCWA's Annual Assessment will ensure that the Board, member agencies, the public, and state and local agencies are informed about the region's water supply conditions and the likelihood of water shortages.

SDCWA's 2017 WSCP outlines shortage response actions it is prepared to implement in times of drought. SDCWA has six regional water shortage levels, which are consistent with the six levels identified in the states' long-term framework document. SDCWA identifies five potential shortage response actions which could be implemented as appropriate for the specific drought condition. The five shortage response actions are:

- Implement the communication plan;
- Initiate storage withdrawals;
- Initiate spot transfers, other;
- Call for extraordinary demand reduction measures; and
- Implement member agency M&I supply allocations.

SDCWA acknowledges that member agencies, including the City, will independently adopt retail-level actions to manage potential water supply shortages. However, the City's WSCP uses the SDCWA's WSCP as a key input with added detail for City-owned supplies and facilities. The City's WSCP does not include a reassessment of regional

emergency supply but it does assess the resulting shortage to the City, specifically, from a declared regional shortage by SDCWA.

1.2 Key Input: Existing Infrastructure

The City is required to describe the methodology for identifying existing water supply infrastructure capabilities and potential constraints. The City's existing water supply infrastructure is well-documented on the City's GIS system and continuously assessed by Water System Operations staff. Existing water supply infrastructure includes City-owned infrastructure and imported water infrastructure. City-owned infrastructure includes surface water reservoirs, water treatment plants, pipelines, pump stations, and groundwater wells. Imported water infrastructure includes a seawater desalination plant, and SDCWA's aqueducts and regional pipelines. The City will evaluate existing water supply and capacities and any constraints for the current year and for one dry year. City-owned infrastructure constraints may consider service area-level supply capabilities in the current year, such as shut-downs due to maintenance, construction impacts, and water quality impacts. Once constraints have been identified, the City will determine whether the total quantified water supply (as determined in Section 1.1 above) should be adjusted to account for these identified constraints. The City will coordinate with SDCWA to evaluate regional infrastructure constraints to determine how they would impact available City water supplies.

1.3 Key Input: Projected Water Demand

This WSCP identifies key inputs and methodology needed to evaluate the City's projected water demand. Unless otherwise specified, the Annual Assessment will use the City's latest demand forecast (adjusted by previous year active consumption) which considers unconstrained demand, weather, population growth, and other influencing factors for the current year and following years. The demand forecast includes adjustment factors for dry year demand.

1.4 Key Input: Evaluation Criteria

The City relies primarily on SDCWA to evaluate regional supply and demand and to evaluate water shortage levels. The City's supply and demand evaluation criterion are applied as minor adjustments to account for latest information on City-owned supplies or unpredicted changes in City demand. As such, the City will evaluate City-owned supply storage levels, changes in recycled water availability, changes in groundwater availability, and recent water demand trends to determine any deviations from the SDCWA Annual Assessment. The criterion will be calculated using the key data inputs of the Annual Assessment, including:

- Overall storage;
- Storage above emergency pools;
- Imported water allocation;
- Drought pool allocation;
- Emergency allocation;
- City emergency storage;
- Effectiveness of active conservation;
- SDCWA Carryover Storage;
- Demand; and
- Infrastructure constraints.

1.5 Decision-Making Process

This section describes the decision-making process that the City will use each year to determine, and subsequently report to the state, its water supply reliability. Steps in the decision-making process are listed below.

1. SDCWA announces member agency allocation determination for current year.
2. SDCWA determines carryover (and emergency storage apportionments if under emergency).
3. City determines City supply available (per Section 1.1) – exclusive of imported water supply.
4. City determines total supply available – inclusive of imported water supply.
5. City determines infrastructure constraints (including water quality conditions limiting local sources).
6. City determines expected demand.
7. City compares supply and demand and makes a determination of the water supply reliability for the current year and one dry year (see Section 1.3 Evaluation Criteria).
8. City prepares and submits Annual Assessment Report to the state. The City will coordinate with SDCWA on submittal of the report. Submittal options are as follows: 1) within 14 days of receiving final allocations from SWP or 2) by June 1.

1.6 Reasonable Alternative Actions

As stated in the regulations, an urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in this WSCP, as identified in the CWC subdivision (a) of §10632, or reasonable alternative actions, provided that descriptions of the alternative actions are submitted with the Annual Assessment Report pursuant to CWC §10632.1. Should the City like to include reasonable alternative actions, the Annual Assessment Report will describe identified reasonable alternative actions (shortage response actions in addition to what was identified in *Chapter 4 – Shortage Response Actions* of this WSCP) to reduce the gap between water supply and demand.

2. WATER SHORTAGE LEVELS

Per regulations stipulated in SB 606, this WSCP revises the 2015 WSCP's stages of action to define a total of six water shortage levels. These graduated water shortage levels specify water shortage response actions that the City can implement in response to shortages in water supply, as expressed by percentages. Shortage response actions associated with each of these levels are discussed in *Chapter 4 - Shortage Response Actions*.

2.1 Water Shortage Levels

The City has six standard water shortage levels as provided in **Table 2-1** below. To determine the appropriate level, the City will conduct an assessment of water supply conditions per the procedures outlined in *Chapter 1 - Water Supply and Demand Assessment*. For example, if the Annual Assessment determines a shortage of 18%, the City would be in a Drought Watch Condition, or Water Shortage Level 2. Water shortage levels also apply to catastrophic interruption of water supplies, including but not limited to, a regional power outage, an earthquake, and other potential emergency events. See *Chapter 7 – Catastrophic Supply Interruption Planning* for an expanded discussion of catastrophic supply interruptions.

The Mayor¹ can, when necessary, recommend one of six shortage response levels to the City Council, which has the authority to declare the appropriate conservation level necessary to ensure sufficient supplies will be available to meet anticipated demands. The City Council can also terminate a shortage response level, based on the Mayor's recommendation. *Chapter 9 – Communication Protocol* provides the process for notifying and declaring water shortage levels. As outlined in *Chapter 1 - Water Supply and Demand Assessment*, the City's Public Utilities Department will monitor the projected supply and demand during the water shortage and recommend to the Mayor the extent of conservation required.

Table 2-1: Water Shortage Levels

Water Shortage Level	Percent Shortage Range
Level 1: Expanded Year-Round Permanent Mandatory Water Restrictions	Up to 10%
Level 2: Drought Watch Condition	Up to 20%
Level 3: Drought Alert Condition	Up to 30%
Level 4: Drought Critical Condition	Up to 40%
Level 5: Drought Crisis Condition	Up to 50%
Level 6: Drought Emergency Condition	Greater than 50%

¹ While the Drought Response is often conducted by the City Manager, the City changed from a City Manager form of government to strong Mayor form of government in 2006. While the policy language uses "City Manager", this document will refer to the Mayor.

3. PENALTIES, CHARGES, AND OTHER ENFORCEMENT OF PROHIBITIONS

Wasting water is illegal at all times, even when no drought response levels are in effect, and the Emergency Water Regulations prohibit all water waste. The regulations define violations of both the permanent water conservation measures and mandatory conservation measures for Water Shortage Levels 2 through 6. Violations are subject to criminal, civil, and administrative penalties and remedies, which are defined in Chapter 1 of the San Diego Municipal Code. Under a Water Shortage Level 1: Drought Watch Condition, conservation measures are voluntary, so there are no penalties for non-compliance.

The City may penalize those who continue to willfully waste water by using an escalating series of remedies, up to discontinuing water service or installing flow-restricting devices. Remedies in order of issuance are:

- Warning letter.
- Notice of Violation.
- Administrative Citations with penalties of \$100, \$250, \$500, and up to \$1,000.
- Referral to the City Attorney for civil or criminal prosecution.
- Water service restricted or shut off.

Water waste violators will receive a Notice of Violation if a water waste complaint is confirmed. A Notice of Violation does not carry a monetary penalty. If a water waste complaint is not confirmed by City staff, a warning letter is issued instead. Warnings are followed by a site visit from a City code enforcement office to verify if the issue has been resolved. If the problem has not been corrected, the code enforcement officer can issue an Administrative Citation. Each violation is treated on a per property basis, and not a per incident basis. For example, if a property owner has received Notice of Violation for a broken sprinkler head, the next observed violation on the property can result in an Administrative Citation, even if it's for a different fixture. If the problem persists, the case may be referred to the City Attorney and the offender's water service may be restricted or shut off.

Terminating a customer's water service is not taken lightly and would occur only when other enforcement measures have not been effective. The City will consider the following factors as part of a decision regarding appropriate remedies:

- Water shortage level in effect.
- Prior enforcement remedies applied.
- Public health and safety.
- Amount of water being used in violation.
- Impact of the violation.

3.1 Appeals and Exemption Procedures

If, due to unique circumstances, a specific requirement of this WSCP would result in undue hardship to a customer using City of San Diego water or to property upon which City of San Diego water is used, that is disproportionate to the impacts to City of San Diego water users generally or to similar property or classes of water uses, then the customer may apply for a variance to the requirements as provided in this subsection.

The variance may be granted or conditionally granted, only upon a written finding of the existence of facts demonstrating an undue hardship to a customer using City of San Diego water or to property upon which City of San Diego water is used, that is disproportionate to the impacts to City of San Diego water users generally or to similar property or classes of water user due to specific and unique circumstances of the user or the user's property. The following items are required in order to apply for a variance:

- Application: Application for a variance will be in written form prescribed by the Mayor and will be accompanied by a non-refundable processing fee in an amount set by resolution of the City Council.
- Supporting Documentation: The written application will be accompanied by photographs, maps, drawings, or other pertinent information as applicable, including a written statement of the applicant.
- Approval Authority: The Mayor will exercise approval authority and act upon any completed application after submittal and may approve, conditionally approve, or deny the variance. The applicant requesting the variance will be promptly notified in writing of any action taken. The decision of the City Manager is final. Unless specified otherwise at the time a variance is approved, the variance applies to the subject property during the term of the mandatory drought response.

There are two instances in which an application for variance will be approved.

1. An application for variance will be approved if all the following occur:

- The variance does not constitute a grant of special privilege inconsistent with the limitations upon other City of San Diego customers; and
- because of special circumstances applicable to the property or its use, the strict application of this WSCP would have a disproportionate impact on the property or use that exceeds the impacts to customers generally; and
- the authorizing of such variance will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the City of San Diego to effectuate the purpose of this WSCP and will not be detrimental to the public interest; and
- the condition or situation of the subject property or the intended use of the property for which the variance is sought is not common, recurrent or general in nature.

2. An application for variance will be approved if either of the following occur:

- the property has been adversely impacted by a disaster; or
- proposed alternative water use restrictions for the property would result in greater water savings than the existing water use restrictions.

No relief will be granted to any customer for any reason in the absence of a showing by the customer that the customer has achieved the maximum practical reduction in water consumption in the customer's residential, commercial, industrial, institutional, agricultural, or governmental water consumption.

4. SHORTAGE RESPONSE ACTIONS

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

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

Shortage response actions included in this WSCP are a mix of prohibitions on end use, consumption reduction methods, supply augmentation, and operational change measures. The California Department of Water Resources (DWR) defines prohibitions on end uses as measures to address areas that are the responsibility of end users, such as a broken sprinkler or leaking faucet. Consumption reduction methods are actions invoked by a water agency to reduce consumption, such as expanding public information campaigns and offering water use surveys. Supply augmentation is defined as any action designed to increase the existing supply availability such as the use of emergency storage or acquiring additional transfer water. Operational changes are defined as actions taken by the City to change the way in which existing supplies are used within its service area. Examples of operational change include eliminating hydrant flushing and street cleaning. The applicability of the Emergency Water Regulations is described in §67.3804 of the San Diego Municipal Code. In general, the Emergency Water Regulations do not apply to special supply programs, such as the SDCWA Special Agricultural Rate Programs. The regulations also do not apply, in general, to water drawn from private wells, reclaimed water, water from graywater systems, areas serviced by the Park and Recreation Department, or industrial manufacturing, processing, or research and development.

4.1 Permanent Water Waste Prohibitions

Permanent Water Waste prohibitions are in effect at all times in the City’s water service area. These prohibited uses, defined in §67.3803 of the City’s Emergency Water Regulations, are intended to promote water conservation as a permanent way of life in San Diego, even during years of normal or above normal precipitation. All permanent water waste prohibitions target end uses, and are included as shortage response actions under Water Shortage Level 1. The following is an abbreviated list of restrictions; the entire list of restrictions is provided in Appendix G, Emergency Water Regulations, of the City’s 2015 UWMP:

- No water may leave a customer’s property by drainage due to excessive irrigation and/or uncorrected leaks.
- Users must repair or stop all water leaks upon discovery, or within 72 hours of notification by the City.
- No washing down of sidewalks, driveways, parking areas, tennis courts, or other paved areas without using a power washer or a hose with a shutoff nozzle.
- No overfilling of swimming pools and spas.
- No use of non-recirculating ornamental fountains or cascading fountains.
- Vehicles may be washed only in a commercial car wash, or using a hose with an automatic shutoff nozzle or hand-held container.
- No single pass-through cooling systems and no non-recirculating systems are allowed in all conveyer car wash and commercial laundry systems.

- Restaurants and other food establishments shall only serve and refill water upon request.
- Guests in hotels and motels shall be provided the option of not laundering towels and linens daily.
- Irrigation of potted plants, non-commercial vegetable gardens and fruit trees, residential and commercial landscapes (including golf courses, parks, school grounds, and recreation fields) is limited to the hours before 10:00 am and after 6:00 p.m.
- Irrigation may occur at any time as required by a landscape permit for erosion control; the establishment, repair, or renovation of public use fields for schools and parks; landscape establishment following a disaster; the renovation or repair of an irrigation system with an operator present; or for nursery and commercial growers using a hand-held hose equipped with a positive shutoff device, a hand-held container, or drip or micro-irrigation distribution systems. Irrigation of nursery propagation beds is permitted at any time.

Table 4-1 below summarizes additional on-going consumption reduction methods implemented by the City which are not included in the Emergency Water Regulations.

Table 4-1: Additional On-going Consumption Reduction Methods

Consumption Reduction Method	Description
Improve Customer Billing	City single-family residential water bill provides data showing usage for the current billing period as compared to last year for each billing period and it also shows average single-family residential use in the area. For non-single-family residential bills, the usage during the current billing period is shown in gallons per day and in hundred cubic feet, and shows usage compared to last year's use and the percentage change.
Increase Frequency of Meter Reading	<p>The City is testing Advanced Metering Infrastructure (AMI) at 11,000 meters, including at 1,000 single-family residences. AMI meters use radio-based technology to read meters, eliminating the need to manually read them and providing real-time data to customers and better tools to conserve water. The Department will be rolling out this technology City-wide over the next several years.</p> <p>A submetering ordinance requires submeters to be installed in every new multi-unit building with at least three units. This will allow tenants to be billed on their water use, thereby providing a financial incentive to conserve water.</p>
Offer Water Use Surveys	Water use surveys are offered for residential customers inside and outside their home, and for commercial landscapes. Water-wise business surveys are offered for commercial, industrial, and institutional users. Staffing for the surveys programs was increased in 2015 in response to the drought. See Section 7 of the City's 2015 UWMP for additional details.
Provide Rebates or Giveaways of Plumbing Fixtures and Devices	Through MWD, the City offers rebates on various water conserving devices. See Section 7 of the City's 2015 UWMP for additional details.
Provide Rebates for Landscape Irrigation Efficiency and water wise landscape incentives	Rebates for landscape irrigation efficiency devices and grass replacement are offered on an ongoing basis. In 2015 funding was increased for grass replacement.

Consumption Reduction Method	Description
Decrease Line Flushing	<p>The City actively seeks to minimize the amount of water used for line flushing and has evaluated options to reuse and/or decrease the amount of water required for flushing. However, at this time there is no cost-effective alternative to flushing.</p> <p>SDPUD works closely with the Public Works Department to track, reduce, and limit the amount of water necessary to meet water quality requirements in new lines. Public Works has implemented a tracking form used by contractors to meter flushing. This information is being gathered to accurately determine if appropriate or excessive water is being used for flushing. The information may ultimately be used to revise contract documents and specifications related to flushing, to reduce waste.</p>
Reduce System Water Loss	<p>The City is conducting water system audits on a yearly basis using the American Water Works Association's (AWWA) Water Audit Software, as discussed in Subsection 4.3.2. of the City's 2015 UWMP. Additionally, the City has a goal of replacing more than 30 miles of water mains per year to reduce losses.</p>
Increase Water Waste Patrols	<p>In response to the recent drought, the City is enforcing mandatory reduction measures by using staff from the Public Utilities and the Transportation & Stormwater Departments. When customers continue to waste water after being informed not to do so, the City's Code Enforcement Section steps in. Additionally, the City has a Waste No Water app available for iPhones and Android operating systems, allowing users to take a photo of a problem or concern and link the address using the app's GPS. This information is then conveyed to SDPUD Water Conservation staff for investigation and response. Additional information regarding the app is available in Section 7 of the City's 2015 UWMP.</p>

4.2 Shortage Response Actions

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

The City employs numerous shortage response actions to mitigate water shortages during drought conditions or catastrophic events. Some of these response actions are detailed in the Emergency Water Regulations, while others go beyond the regulations. As specific drought response levels are implemented, the City will closely monitor projected available supply and demand per the Annual Assessment. Depending on these projections, the shortage response actions would either be implemented or expanded to appropriately respond to shortages.

The shortage response actions presented in this WSCP were developed through the coordinated effort of multiple City departments and builds on the City's 2015 WSCP. The combination of shortage response actions associated with each water shortage level considered the estimate of extent to which the supply gap was reduced. The first two water shortage levels focus on low-hanging actions so as to delay, indefinitely, the reductions to rate-payer quality of life. In addition, implementing supply augmentation strategies, such as considering SDCWA's carryover storage program, early on allows water customers to maintain their standard of living. Water Shortage Level 1 includes expanded year-round water restriction found in the City's municipal code (§67.3803). Water Shortage Level 2 builds on actions outlined in Level 1 with the addition of one operational change and a supply augmentation strategy. An increase in mandatory prohibitions and the use of emergency storage withdrawals in Levels 5 and 6 reflect the urgency of mitigating shortages as drought conditions worsen.

Shortage response actions from previous levels are assumed to remain in effect as the water shortage level increases. The mix of shortage response actions in any given level is designed to produce an additional 10% of demand reductions

above the previous level's reduction. Level 3 shortage response actions in conjunction with those implemented in Levels 1 and 2 are anticipated to provide a combined demand reduction total of up to 30%.

The following subsections list the combinations of shortage response actions associated with each of the six WSCP Water Shortage Levels. The categories of "high," "medium," or "low" are assigned to each shortage response action based on the estimated extent to which it is able to reduce the supply gap. These shortage response actions are also presented in table format in **Appendix A**.

4.2.1 Water Shortage Level 1: Expanded Year-Round Permanent Mandatory Water Restrictions

Water Shortage Level 1 constitutes a consumer demand reduction of up to 10%. Shortage response actions listed under this level include the expanded enforcement of permanent water waste prohibitions listed in Section 4.1 and provided in the City's Emergency Water Regulations. In addition, the following shortage response actions have been included in Water Shortage Level 1:

- Low: Increase outreach efforts for high-volume customers and expand leak alert program.
- Low: Increase voluntary conservation.
- Medium: Expanded enforcement of Permanent Water Waste Prohibitions.

4.2.2 Water Shortage Level 2: Drought Watch Condition

The City implements a Water Shortage Level 2: Drought Watch Condition when there is reasonable probability of a supply shortage, and when demand needs to be reduced by up to 20% to ensure there will be sufficient supplies to meet demands. To reduce consumption during a Drought Watch Condition and all higher levels of conditions, the City will increase its public education and outreach efforts to build awareness of voluntary water conservation practices and all permanent water waste prohibitions. The shortage response actions under a Drought Watch Condition appears below:

- Low: Areas with no irrigation system must use a hand-held hose with a shutoff nozzle, hand-held container, or a garden hose sprinkler system on a timer.
- Low: Irrigation is prohibited during and within 48 hours of a rain event.
- Low: Washing of automobiles, vehicles, airplanes, and other mobile equipment is permitted only before 10:00 a.m. or after 6:00 p.m. with a hand-held container or a hand-held hose with shutoff nozzle. Washing is permitted at any time at commercial car washes. Car washes that do not use partially recirculated water will be subject to volume limits designated by a resolution of the City Council. Boats and boat engines are permitted to be washed down after use. Mobile equipment washings are exempt from these regulations where the health, safety, and welfare of the public are contingent upon frequent vehicle washings.
- Low: Landscape irrigation is limited to no more than three assigned days per week on a schedule posted by the Mayor. This does not apply to commercial growers or nurseries, nor to the irrigation of golf course greens and trees.
- Medium: Use of recycled or non-potable water, when available, is required for construction purposes.
- Medium: Prohibition of car washing.

4.2.3 Water Shortage Level 3: Drought Alert Condition

A Water Shortage Level 3: Drought Alert Condition is implemented when demand must be reduced up to 30% to ensure sufficient supplies. During a Drought Alert Condition, a new set of mandatory water conservation practices takes effect, in addition to all Permanent Water Waste Prohibitions, Level 1, and Level 2 conservation practices. A list of the Water Shortage Level 3 shortage response actions appears below:

- Low: Construction operations receiving water from a fire hydrant meter or water truck will not use water beyond that required for normal construction activities. Construction projects requiring water for new landscaping materials shall adhere to the designated irrigation hours of before 10:00 a.m. and after 6:00 p.m.
- Low: Water from fire hydrants is limited to firefighting.
- Low: Landscaped irrigation of areas not covered by sprinklers is limited to two assigned days per week using a hand-held container, hand-held hose with shutoff nozzle, or low volume non-spray irrigation, such as a soaker hose.
- Low: Operation of ornamental fountains is prohibited, except when needed for maintenance.
- Medium: Landscape irrigation using sprinklers is limited to no more than five minutes per watering station during two assigned days per week, on a schedule established by the Mayor. The five-minute limit per watering station does not apply to landscape irrigation systems using water efficient devices, including drip/micro-irrigation systems and stream rotor sprinklers.
- Medium: Car wash must reuse water.
- Medium: Prohibition on street cleaning.
- High: SDCWA Carryover Storage Program.

During a Drought Alert Condition, the Mayor may recommend and implement a water allocation per account as an additional tool to reduce consumption and establish a schedule of surcharges or penalties for exceeding the water allocation. These actions are subject to passage of a resolution by the City Council. Water conservation measures required under the Drought Watch and Alert conditions could be suspended by resolution of the City Council, if a water allocation is in effect.

4.2.4 Water Shortage Level 4: Drought Critical Condition

Water Shortage Level 4: Drought Critical Condition is implemented when demand must be reduced up to 40% to ensure sufficient supplies. During a Drought Critical Condition, a new set of mandatory water conservation practices takes effect, in addition to all Permanent Water Waste Prohibitions and additional restriction practices that became mandatory under Water Shortage Level 1, Level 2, and Level 3. The Drought Critical Condition's mandatory conservation practices apply to industrial manufacturing, processing, or research and development, which are exempt, under certain conditions, from the Drought Watch and Drought Alert conditions. The list of shortage response action options available for Water Shortage Level 4 appears below:

- Low: Irrigating potted plants, non-commercial vegetable gardens, and fruit trees may take place on any day, but only before 10:00 a.m. or after 6:00 p.m.
- Low: Operation of cascading and recreational fountains is prohibited, except to the extent needed for maintenance.

- Medium: Landscape irrigation is limited to two assigned days per week and to no more than five minutes per watering station, or no more than 18 minutes per day with impact rotors, rotating nozzles, or micro-spray heads. This condition does not apply to commercial growers or nurseries, or to the irrigation of golf course greens.
- Medium: Refilling ornamental lakes or ponds is prohibited, except to the extent necessary to sustain plants or animals that were present in the water feature before a water shortage level was declared.
- Medium: Washing vehicles is prohibited, except at commercial car washes that recirculate water, or by using high pressure/low volume wash systems.
- High: Suspension of specific municipal uses such as hydrant flushing, street cleaning, and water-based recreation.
- High: Increase initiative to install pressure regulators to all homes and businesses that do not currently have one and require a downward adjustment to 60 pounds per square inch (PSI).

During a Drought Critical Condition, the Mayor may recommend and implement a water allocation per account as an additional tool to reduce consumption and establish a schedule of surcharges or penalties for exceeding the water allocation. These actions are subject to passage of a resolution by the City Council. Water conservation measures required under the Drought Watch, Alert, and Critical conditions could be suspended by resolution of the City Council, if a water allocation is in effect.

4.2.5 Water Shortage Level 5: Drought Crisis Condition

Water Shortage Level 5: Drought Crisis Condition is implemented when a water shortage emergency requires that demand be reduced up to 50% to ensure sufficient supplies. During a Drought Crisis a new set of mandatory conservation measures takes effect, in addition to all Permanent Water Waste Prohibitions. Mandatory conservation practices imposed under Water Shortage Levels 1 through 4 remain in effect. The list of shortage response actions available during a Drought Crisis Condition appears below:

- Medium: Stop all landscape irrigation, except crops and landscape products of commercial growers and nurseries. This does not apply to:
 - Maintenance of trees and shrubs watered no more than two assigned days per week and by using a hand-held container, hand-held hose with an automatic shutoff nozzle, or low-volume non-spray irrigation.
 - Maintenance of existing landscaping for fire protection.
 - Maintenance of plant materials identified to be rare or protected by City Council policy, or essential for the well-being of rare animals.
 - Maintenance of landscaping within active parks and playing fields, day care centers, school grounds, cemeteries, and golf course greens, with maximum irrigation of two days per week.
- Medium: Stop filling or refilling residential pools and spas.
- High: Suspension of potable water use for irrigation (100% reduction).
- High: City emergency storage withdrawals.
- High: Locally appropriate supply augmentation as per SDCWA WSCP.

- High: Increase initiative to install pressure regulators to all homes and businesses that do not currently have one and require a downward adjustment of all pressure regulators from 60 PSI to 50 PSI.

4.2.6 Water Shortage Level 6: Drought Emergency Condition

Water Shortage Level 6: Drought Emergency Condition is implemented when a water shortage emergency requires that demand be reduced greater than 50% to ensure sufficient supplies. During a Drought Emergency a new set of mandatory conservation measures takes effect, in addition to all Permanent Water Waste Prohibitions. Mandatory conservation practices that were imposed Levels 1 through 5 remain in effect. A list of available shortage response actions under Water Shortage Level 6 appears below:

- High: Use of flow restrictors on accounts that are non-responsive to outreach, and other mandatory restrictions and enforcement, as necessary.
- High: Stop all landscape irrigation. This does not apply to:
 - Maintenance of trees and shrubs watered no more than two assigned days per week and by using a hand-held container, hand-held hose with an automatic shutoff nozzle, or low-volume non-spray irrigation.
 - Maintenance of existing landscaping for fire protection.
 - Maintenance of plant materials identified to be rare or protected by City Council policy, or essential for the well-being of rare animals.
- High: City emergency storage withdrawals.
- High: Locally appropriate supply augmentation as per SDCWA WSCP.
- High: Increase initiative to install pressure regulators to all homes and businesses that do not currently have one and require downward adjustment of all pressure regulators from 50 PSI to 40 PSI.

5. DETERMINING WATER SHORTAGE REDUCTIONS

5.1 Monitoring and Reporting

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

The City is also required to report total monthly production to the SWRCB in compliance with Governor Brown's Executive Order B-29-15 and more recently B-36-15, as described in the introduction of this WSCP.

5.2 Reevaluation and Improvement Procedures

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

6. REVENUE AND EXPENDITURE IMPACTS

When customers reduce their water consumption in response to prolonged water shortages or emergency situations, revenues for the City's Water Enterprise Fund (Fund) decline as a result. However, a portion of the Fund's expenditures are fixed regardless of how much water customers use. To remedy this imbalance of revenues versus expenditures, the City may have to increase rates and/or reduce or defer capital improvements. This is necessary to meet contractual requirements of bond holders related to outstanding debt, as the City must maintain a minimum debt service coverage ratio. Maintaining targeted debt service ratios is critical to obtaining future funding for capital projects needed to improve water system reliability and mitigate against future droughts and emergencies. In 2015 the City completed a Cost of Service Update for the City's Water Enterprise Fund to determine necessary rate changes.

6.1 Water Rate Structure

The City's current water rate structure, adopted on November 17, 2015, with an effective date of January 1, 2016, accounts for consumption reductions, among other variables, in meeting the Governor's mandate of a 16% reduction for the City from June 2015 to February 2016. The rate structure included increases on January 1, 2016, and then annually on July 1 for the ensuing four fiscal years through 2020. The Cost of Service Update indicated that revenues would be sufficient throughout the rate increase period to recover 100% of the total cost of service, accounting for the Governor's mandated 16% reduction. As adopted, the rate structure assisted the City in generating sufficient revenues to operate, manage, and maintain its facilities and services, even during State-mandated water use restrictions.

The City's rate structure uses a tiered conservation structure for single-family residential customers. The structure uses four consumption-based tiers with progressively higher commodity charges at each tier to pay for the increased costs related to peak demands. Assets like storage facilities, treatment plants, pump stations, and pipelines have to be built to not only handle average daily demand, but to handle peak hour demands plus fire suppression flow. The single-family residential class typically exhibits the highest peaking factor among the user classes, therefore have been singled out with the tiered structure. Those customers who use more water create the need for the larger, more expensive, facilities, thus pay for higher priced water. The tiered structure has also been proven to encourage conservation.

The rate structure also includes a pass-through adjustment that applies to all water users. As previously discussed in this UWMP, the City purchases the majority of its water from the SDCWA. In turn, SDCWA purchases a large portion of it supplies from MWD. Scarcities in statewide and regional water supplies have raised the cost of imported water while reducing availability. The rate increases from SDCWA and MWD are used to calculate the overall dollar impact to the City based on assumed purchases for the current fiscal year. The pass-through percentage increase to the City's customers is calculated as the impact amount as a percentage of total assumed sales, so that the City only collects the impact amount. EXAMPLE: If SDCWA imposes a 2% increase resulting in a \$5 million impact to the City for water purchases; and the City expects to sell \$500 million worth of water that year; it would raise rates by 1% to city customers (1% of \$500 million is \$5 million).

6.2 Use of Financial Reserves

The City does not anticipate tapping any reserves to maintain operations during a drought or emergency. The current rate structure accounts for the State's mandatory 16% demand reduction and incorporates pass-through adjustments associated with future increases in water purchases from SDCWA. However, if revenue shortfalls were to occur, the City could consider the options of deferring operation and maintenance and capital program projects, using emergency storage water, or drawing from one or more of the available reserve funds. Any reallocation of capital project funding to meet short-term emergency needs would be restricted by bond covenants that require bond proceeds to be used exclusively for capital projects.

There are currently three applicable reserve funds that could serve in the event of a revenue loss resulting from reduced water demands under a future reduction mandate:

- **Secondary Purchase Reserve.** Intended to be equal to 6% of the annual water purchase budget, this fund is earmarked as an emergency reserve for the purchase of water in the event of drought or other emergency that suddenly disrupts the normal supply. City Council action is required to appropriate this reserve.
- **Operating Reserve.** Intended to be used in the event of a catastrophe that prevents the utility from operating in its normal course of business, with a target level equivalent to 70 days of operation. Any request to utilize the Emergency Operating Reserve must include a plan and timeline for replenishment, which may be in conjunction with the City Council authorization of a future cost of service study and rate adjustment. City Council approval is required to appropriate this reserve.
- **Rate Stabilization Reserve.** Transfers in and out of this fund serve as a revolving mechanism to mitigate potential fluctuations in the rates for the Water System operations and maintain stable debt service coverage ratios for the Outstanding Obligations. Use of the Rate Stabilization Reserve is based upon the recommendation of Public Utilities and approved by the City's Chief Financial Officer.

Without the use of these reserves or emergency storage water, it could be necessary to increase rates if deliveries fall significantly during periods of substantial reductions. The use of reserves would ultimately require rate increases because the reserves would need to be replenished, but the increases could be spread over multiple years. The timing and the amount of the reserves used would be evaluated based on the significance of the rate increases, the ability to reduce variable operation and maintenance costs and defer capital projects, the availability of emergency storage water, the timing of additional debt issuances, and the possibility of a downgrade in the debt rating.

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

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

6.4 Measures to Mitigate Revenue and Expenditure Impacts During Shortages

The City has many ways to mitigate the effects of prolonged water shortages or emergencies on revenues and expenditures, as previously discussed. The City is performing another Cost of Service Update to address the needs of the Department going forward and is anticipating further rate increases starting Fiscal Year 2022 and will contain pass-through adjustments. As discussed in Section 6.1, any future rate increases would have to be approved by the City Council via the Proposition 218 noticing and Public Hearing process. **Table 6-1** summarizes the measures discussed in this section.

Table 6-1: Summary of Measures to Mitigate Revenue and Expenditure Impacts

Name of Measure	Summary of Effects
Use of emergency water storage and other local water resources during times of shortage	<p>Makes water available to avoid revenue losses resulting from decreased sales, and expenditure increases caused by purchasing imported water.</p> <p>Protects against potential higher cost or surcharges on imported water during shortages.</p>
Use of Secondary Purchase Reserve	<p>Allows the purchase of water during a sudden disruption of supply during drought or other emergency.</p>
Use of Operating Reserve	<p>Provides for unanticipated needs when normal water supply is disrupted by a catastrophic event.</p>
Use of Rate Stabilization Reserve	<p>Provides a source of funds to mitigate future rate increases by maintaining legal covenanted rates.</p>
Reductions in expenditures through possible deferrals	<p>Reduces current operational expenditures to compensate for reduction in water sales revenue.</p> <p>Delays operations & maintenance and capital improvements.</p>
Council approved rate increase	<p>Provides additional revenues when water sales decline or expenditures increase.</p> <p>Replenishes reserve funds used to offset effects of shortages.</p>

7. CATASTROPHIC SUPPLY INTERRUPTION PLANNING

A catastrophic supply interruption occurs when a disaster suddenly disrupts all or a large portion of the water available to meet the region's needs. The UWMP Act requires agencies to identify actions they will take if there is a catastrophic supply interruption, specifically including interruptions from a power outage, earthquake, or other non-drought related emergency. MWD, SDCWA, and the City have developed plans for catastrophic supply interruptions that include a regional power outage, earthquake, or other disaster. The City additionally maintains several emergency connections to and from neighboring water agencies, to provide mutual aid during times of catastrophic supply interruptions. These agencies include the Santa Fe Irrigation District, Poway Municipal Water District, Otay Water District, Cal-Am, and the Sweetwater Authority. Catastrophic supply interruption events are considered when determining the City's overall water supply shortage as defined by the water shortage levels identified in *Chapter 2 – Water Shortage Levels*. The City does not designate a specific catastrophic supply interruption water shortage level with its own shortage response actions. Rather, the resulting shortage of a catastrophic supply interruption would contribute to the City's total projected shortage in any given year. Shortage response actions associated with the determined water shortage level will help guide the City's response to catastrophic supply interruptions.

7.1 MWD Catastrophic Supply Interruption Planning

MWD has developed emergency storage requirements and plans based on a 100% reduction in imported supplies from all aqueducts serving its service area, for a period of six months. MWD has made significant investments in emergency storage to provide water to its member agencies during emergencies. If a catastrophe were to occur, non-firm (non-contractual) service deliveries would be suspended and firm (contractual) supplies to member agencies would be cut back by 25% from normal-year demands. Water would be drawn from a combination of MWD's surface reservoirs and groundwater basins, as well as its emergency water storage and other available storage projects. Emergency supplies are designed to be delivered via gravity, except in limited circumstances. MWD's water treatment plants have backup generators to continue treating water in the event of a power outage. MWD also has the ability to deploy mobile generators to key locations, as needed.

MWD's Water Surplus and Drought Management (WSDM) Plan and Water Supply Allocation Plan (WSAP) will guide the allocation of supplies and resources during a catastrophic supply interruption. MWD and its member agencies worked together to develop the WSDM Plan. The WSDM Plan establishes broad water resource management strategies to ensure MWD's ability to meet full service demands at all times. It also contains principles for supply allocation if the need should ever arise. The WSDM Plan splits MWD's resource actions into two major categories: Surplus Actions and Shortage Actions. The Shortage Actions are split into three subcategories: Shortage, Severe Shortage, and Extreme Shortage.

A catastrophic supply interruption would fall under an Extreme Shortage. Under an Extreme Shortage MWD would allocate supplies to its member agencies in accordance with the WSAP. If shortage allocations are required, MWD will rely on the calculations established in the WSAP. The plan allocates shortages equitably among its member agencies based on need, with adjustments for growth, local investments, changes in supply conditions, demand hardening (increasing water use efficiency such that additional conservation is more difficult to obtain), and water conservation plans.

7.2 SDCWA Catastrophic Supply Interruption Planning

SDCWA's catastrophic supply interruption planning consists of an Integrated Contingency Plan (ICP) and an Emergency Storage Project (ESP).

7.2.1 SDCWA Integrated Contingency Plan

The SDCWA's ICP outlines how staff would respond to an emergency that causes severe damage to SDCWA's water distribution system or hinders SDCWA's ability to provide reliable water service to its member agencies, including the

City. In addition to providing direction and strategies for responding to a crisis, it also outlines the triggers that would activate the ICP and/or the Emergency Operations Center (EOC). SDCWA's ICP includes the following:

- Authorities, policies, and procedures associated with emergency response activities.
- EOC activities, including EOC activation and deactivation guidelines.
- Multiagency and multijurisdictional coordination, particularly between SDCWA, its member agencies, and MWD, in accordance with Standardized Emergency Management Systems and National Incident Management System guidelines.
- Incident Command System management and organization and emergency staffing required to assist in mitigating any significant emergency or disaster.
- Mutual aid agreements and covenants that outline terms and conditions under which mutual aid assistance will be provided.
- Hazard specific action plans and Incident Command System position checklists.

The SDCWA's ICP provides a step-by-step approach with procedural tools such as resource and information lists, personnel rosters, listings of established policies and procedures, and reference materials. SDCWA provides input to the Unified San Diego County Emergency Services Organization's "Operational Area Emergency Plan", which serves to support SDCWA's ICP.

7.2.2 SDCWA Emergency Storage Program

The SDCWA's Emergency Storage Program (ESP) is a system of reservoirs, pipelines, pump stations, and other conveyance facilities that are designed to provide water to the region during a prolonged regional supply interruption. The recently completed project has added 90,100 AF of water storage capacity to provide for six months of supplies in the San Diego region, through at least 2030, for use during an emergency. Emergency water storage was added at Hodges Reservoir, which is owned by the City, and at the Olivenhain and San Vicente reservoirs. The regional water pipeline system was expanded to allow water distribution throughout the region in the event of an emergency. SDCWA sized the ESP based on the authority's assumption of providing a 75% service level to all member agencies during an outage, while fully implementing best management practices for water conservation. SDCWA's Board of Directors has the ability to authorize use of ESP supplies in an emergency or prolonged drought situation when imported water and local supplies would not meet 75% of the member agencies' municipal and industrial demands.

Emergency Water Delivery Plans (EWDPs) provide forecasts of SDCWA emergency water supply deliveries to its member agencies during two- and six-month emergency events. The following general steps from EWDPs show the methodology for calculating the allocation of ESP supplies to member agencies in a prolonged drought or outage situation without imported supplies:

- Define water storage and conveyance facility infrastructure that would be in place at the time of the emergency event in order to estimate the duration of the emergency (i.e., time needed to repair damaged pipelines and/or infrastructure);
- Determine the total demand of each member agency during the emergency, considering both municipal and industrial water demands and agricultural water demands;
- Determine the net demand of each member agency, considering the availability of recycled water supplies;
- Determine the local supplies available to each member agency, including: potable reuse, groundwater, surface water storage, and seawater desalination;

- Determine the amount of local supplies that could be transferred within the City of San Diego service areas;
- Determine the amount of transfers between member agencies based on existing agreements;
- Determine the amount of Lewis Carlsbad Desalination Plant supplies that could be delivered to member agencies;
- Determine the amount of imported water supplies available for delivery to member agencies;
- Allocate ESP supplies in Olivenhain, Lake Hodges, and San Vicente Reservoirs to member agencies to achieve an initial service of 75%, considering other available supplies described above and taking into account limitations of delivery facilities;
- Determine reductions in deliveries to member agencies participating in SDCWA's Transitional Special Agricultural Water Rate (TSAWR) program. The reductions rate for TSAWR customers is twice the rate imposed on SDCWA municipal and industrial customers, up to a 90% reduction. Reductions in deliveries that arise from such cutbacks would be reallocated to commercial and industrial customers;
- Determine increases in member agency deliveries due to redistribution of emergency water not delivered to member agencies as a result of TSAWR program;
- Determine net SDCWA deliveries to member agencies from all water sources available to SDCWA, consisting of Carlsbad Desalination Plant supplies, imported water supplies, and ESP reservoir supplies.

7.2.3 Emergency Storage Program Project Components

The Lake Hodges Pipeline and Pump Station project connected the City's Hodges Reservoir to Olivenhain Reservoir, which is owned by the SDCWA and Olivenhain Municipal Water District. Major components include a ten-foot diameter pipeline connecting the lake and reservoir, a pump station to pump water back and forth between the facilities, electrical turbines to generate hydroelectric power, an electrical switchyard to provide electricity to the pump station and send electricity generated by the turbines to the local electrical grid, and an inlet-outlet below the water surface connecting to the pump station. This connection allows water to be pumped back and forth between Hodges Reservoir and Olivenhain Reservoir. From Olivenhain Reservoir, water can be distributed throughout the region via SDCWA's delivery system. This project also assists in keeping Hodges Reservoir at a more constant level in dry seasons by capturing runoff during rainy seasons and preventing spills over the dam. The project gives the City access to an additional 40,000 AF of storage for delivery into the northern part of its distribution system. With the project agreements, the City has access to 20,000 AF of water in Hodges Reservoir that it could not previously access, in addition to 20,000 AF in Olivenhain Reservoir.

The San Vicente Pipeline and Pump Station and Dam Raise projects included construction of pipelines and pumping facilities, and raising the San Vicente Dam. The San Vicente Dam Raise component of the ESP raised the dam by 117 feet, from 220 feet to 337 feet, increasing the storage capacity by 152,000 AF, to 242,000 AF from 90,000 AF. Activated during emergencies, the pumping facilities can move up to 300 million gallons of water per day from the reservoir to SDCWA's water delivery system. Water is pumped through the pipelines to a 3 million-gallon surge tank. The surge tank protects the pipeline and other pipelines from extreme pressure fluctuations in the event of sudden pump or valve failures in the system. From the surge tank water flows through the pipeline by gravity to SDCWA's Second Aqueduct, where it can be delivered to agencies in the southern half of the county during emergencies. Nearly half of the City's average daily water use can be met through this project.

The final component of the ESP, consisting of a pump station and conveyance facilities, is scheduled for completion in 2019. The facilities will convey treated water from SDCWA's treatment plant to the northern portions of SDCWA's service area.

7.3 City of San Diego Emergency Storage of Water Policy

The City receives its major water supply sources through aqueducts, canals, and pumping plants owned by MWD and the SDCWA. The City maintains an accessible emergency water supply that could provide an uninterrupted supply of water to the City's water treatment facilities, should the supply of imported water be interrupted. The management of reservoirs is guided by the City of San Diego Council Policy 400-04 (Appendix G of the City's 2015 UWMP), dated December 27, 1973, which outlines the City's Emergency Water Storage Policy. The policy mandates that the City store sufficient untreated water in active, available storage to meet six-tenths of the normal annual (7.2 months) City and its contractees water demand requirements, exclusive of conservation. Active available storage is the portion of water that is above the lowest usable outlet of each reservoir. This policy applies to the following reservoirs: Lake Skinner, San Vicente, El Capitan, Lower Otay, Murray, and Miramar. The active available storage shall include any water in the San Vicente Reservoir stored to the account of SDCWA or MWD, but shall not include any water stored at El Capitan Reservoir by the Helix Irrigation District. The active available storage shall also include 60% of the active, available storage in the MWD's Lake Skinner reservoir.

The emergency storage requirement changes from month to month and is based on the upcoming seven months' water demands. This results in a seasonally fluctuating emergency storage requirement, generally peaking in April and reaching its minimum in October. This seasonally fluctuating requirement makes a portion of the required emergency storage capacity available for impounding or seasonal storage.

8. LEGAL AUTHORITIES

Under California law, including CWC Chapters 3.3 and 3.5 of Division 1, Parts 2.55 and 2.6 of Division 6, Division 13, and Article X, Section 2 of the California Constitution, the City Council is authorized to implement the water shortage actions outlined in this WSCP. In all water shortage cases, shortage response actions to be implemented will be at the discretion of the City Council and will be based on an assessment of the supply shortage, customer response, and need for demand reductions.

It is noted that upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, the state will defer to implementation of locally adopted water shortage contingency plans to the extent practicable. The City will coordinate with regional and local water suppliers for which it provided water supply services for possible proclamation of a local emergency as necessary.

9. COMMUNICATION PROTOCOL

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

Per SDCWA's 2017 WSCP, it is important to communicate to ratepayers the following when urgent conservation is needed:

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

9.1 Coordination

In order to communicate effectively, avoid confusion, and maintain credibility, the City will work in close coordination with SDCWA at various levels of management. These levels include the Joint Public Information Council/Conservation Coordinators (JPIC; staff level), the Member Agency Managers group (management level), and SDCWA Board's Legislation and Public Outreach Committee (Board level). During droughts or other times of limited supply, the frequency and extent of coordination will increase to ensure outreach tactics are consistent with the changing needs of the City and its ratepayers. The City will seek opportunities to leverage external resources to complement its own outreach.

9.2 Communication Objectives

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

- Motivate water users to quickly increase conservation in ways that are consistent with any voluntary or mandatory actions called for at the current level of the WSCP.
- Raise awareness and understanding of the drought, regulatory, or other condition affecting water supplies and the need for increased conservation.
- Minimize confusion and maintain credibility of water agencies and conservation messages with an appropriate tone that avoids a "cry wolf" perception and non-compliance backlash.
- Make water users feel appreciated for existing accomplishments in improving their water-use efficiency, and for supporting regional and local investments in water supply reliability.
- Educate regional civic and business leaders, elected officials and the public that the City has greatly improved its water supply reliability.

- Prepare the City for any potential escalation (or de-escalation) of the WSCP based on trending supply conditions.
- Ensure all stakeholders believe they are being treated fairly in relationship to other stakeholders.
- Maintain communication effectiveness by soliciting or monitoring feedback from member agencies, key stakeholders, and the general public to update or adapt messages or communication tools.
- Exit WSCP implementation having demonstrated the effectiveness and value of conservation actions and water supply reliability investments in minimizing impacts to the City's economy and quality of life.

9.3 Communication Protocol for Current or Predicted Shortage

A current or predicted shortage, as determined by the Annual Assessment, will be communicated to the public upon submittal of the Annual Assessment Report in June of any given year. For a Water Shortage Level 1 or 2, the Mayor may publish a notice of determination of the existence of a shortage condition in the City's official newspaper. The City of San Diego may also post notice of the condition on its website. A Water Shortage Level 3 or 4 condition may be declared upon recommendation by the Mayor and resolution of the City Council. The declaration of a Water Shortage Level 5 or 6 may be issued upon recommendation by the Mayor and resolution of the City Council and in accordance with the procedures specified in CWC §351 and §352.

9.4 Communication Protocol for Triggered or Anticipated to Be Triggered Shortage Response Action

The public will be notified about triggered or anticipated to be triggered shortage response actions. The implementation of shortage response actions associated with any water shortage level will take effect on the tenth day after the date the shortage response action is declared. Within five days following the declaration of the shortage response action, the Mayor will publish a notice giving the extent, terms, and conditions around the use and consumption of water a minimum of one time for three consecutive days in the City's official newspaper.

9.5 Protocol and Strategies for Relevant Communications

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

- Announce status change to key stakeholders and the general public (all Water Shortage Levels).
- Provide regular update to stakeholders and the media on conditions (all Water Shortage Levels).
- Increase agency coordination via monthly JPIC meetings (Water Shortage Level 1 and 2).
- Conduct issue briefings with elected officials and other key civic and business leaders (Water Shortage Level 2)
- Promote available water assistance resources for vulnerable populations; specialized outreach for impact industries (Water Shortage Levels 3 and 4).
- Conduct specialized outreach to reduce discretionary outdoor use while minimizing landscape damage (Water Shortage Levels 3 and 4).
- Suspend promotion of long-term water use efficiency programs/tools to focus on imminent needs (Water Shortages Levels 5 and 6).

The City has various means of implementing its communication strategies. The City may update its website, newsletters, and social media platforms to reflect conditions and convey key messaging. The City may also hold news conferences or other events to announce or explain changes in conditions. Finally, the City may modify school assembly program content to include key conservation messages.

9.5.1 Catastrophic Communications

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

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APPENDIX A: SHORTAGE RESPONSE ACTIONS TABLE



Types of response actions:

- Locally appropriate supply augmentation actions
- Locally appropriate demand reduction actions to adequately respond to shortages
- Locally appropriate operational changes
- Additional, mandatory prohibitions against specific water use practices (in addition to state-mandated prohibitions)

Note: Shortage response actions from previous drought response levels will remain in effect at later levels.

Water Shortage Level	Shortage Response Actions	Estimate Of Extent To Which Supply Gap Reduced	Response Action Type
Water Shortage Level 1: Expanded Year-Round Permanent Mandatory Water Restrictions (consumer demand reduction of up to 10% is required)	Increase outreach efforts for high-volume customers and expand leak alert program.	Low	Demand Reduction
	Increase voluntary conservation.	Low	Demand Reduction
	Expanded enforcement of Permanent Water Waste Prohibitions.	Medium	Demand Reduction
Water Shortage Level 2: Drought Watch Condition (consumer demand reduction of up to 20% is required)	Areas with no irrigation system must use a hand-held hose with a shutoff nozzle, hand-held container, or a garden hose sprinkler system on a timer.	Low	Demand Reduction
	Irrigation is prohibited during and within 48 hours of a rain event.	Low	Mandatory Prohibition
	Washing of automobiles, vehicles, airplanes, and other mobile equipment is permitted only before 10:00 a.m. or after 6:00 p.m. with a hand-held container or a hand-held hose with shutoff nozzle. Washing is permitted at any time at commercial car washes. Car washes that do not use partially recirculated water will be subject to volume limits designated by a resolution of the City Council. Boats and boat engines are permitted to be washed down after use. Mobile equipment washings are exempt from these regulations where the health, safety, and welfare of the public are contingent upon frequent vehicle washings.	Low	Mandatory Prohibition
	Landscape irrigation is limited to no more than three assigned days per week on a schedule posted by the Mayor. This does not apply to commercial growers or nurseries, nor to the irrigation of golf course greens and trees.	Low	Mandatory Prohibition
	Use of recycled or non-potable water, when available, is required for construction purposes.	Medium	Operational Change
	Prohibition of car washing.	Medium	Demand Reduction
Water Shortage Level 3: Drought Alert Condition (consumer demand reduction of up to 30% is required)	Construction operations receiving water from a fire hydrant meter or water truck will not use water beyond that required for normal construction activities. Construction projects requiring water for new landscaping materials shall adhere to the designated irrigation hours of before 10:00 a.m. and after 6:00 p.m.	Low	Mandatory Prohibition
	Water from fire hydrants is limited to firefighting.	Low	Operational Change
	Landscaped irrigation of areas not covered by sprinklers is limited to two assigned days per week using a hand-held container, hand-held hose with shutoff nozzle, or low volume non-spray irrigation, such as a soaker hose.	Low	Mandatory Prohibition
	Operation of ornamental fountains is prohibited, except when needed for maintenance.	Low	Mandatory Prohibition
	Landscape irrigation using sprinklers is limited to no more than five minutes per watering station during two assigned days per week, on a schedule established by the Mayor. The five-minute limit per watering station does not apply to landscape irrigation systems using water efficient devices, including drip/micro-irrigation systems and stream rotor sprinklers.	Medium	Mandatory Prohibition
	Car wash must reuse water.	Medium	Demand Reduction
	Prohibition on street cleaning.	Medium	Mandatory Prohibition
	SDCWA Carryover Storage Program.	High	Supply Augmentation

Water Shortage Level	Shortage Response Actions	Estimate Of Extent To Which Supply Gap Reduced	Response Action Type
Water Shortage Level 4: Drought Critical Condition (consumer demand reduction of up to 40% is required)	Irrigating potted plants, non-commercial vegetable gardens, and fruit trees may take place on any day, but only before 10:00 a.m. or after 6:00 p.m.	Low	Mandatory Prohibition
	Operation of cascading and recreational fountains is prohibited, except to the extent needed for maintenance.	Low	Mandatory Prohibition
	Landscape irrigation is limited to two assigned days per week and to no more than five minutes per watering station, or no more than 18 minutes per day with impact rotors, rotating nozzles, or micro-spray heads. This condition does not apply to commercial growers or nurseries, or to the irrigation of golf course greens.	Medium	Mandatory Prohibition
	Refilling ornamental lakes or ponds is prohibited, except to the extent necessary to sustain plants or animals that were present in the water feature before a water shortage level was declared.	Medium	Mandatory Prohibition
	Washing vehicles is prohibited, except at commercial car washes that recirculate water, or by using high pressure/low volume wash systems.	Medium	Mandatory Prohibition
	Suspension of specific municipal uses such as hydrant flushing, street cleaning, and water-based recreation.	High	Operational Change
	Increase initiative to install pressure regulators to all homes and businesses that do not currently have one and require a downward adjustment to 60 pounds per square inch (PSI).	High	Operational Change
Water Shortage Level 5: Drought Crisis Condition (consumer demand reduction of up to 50% is required)	Stop all landscape irrigation, except crops and landscape products of commercial growers and nurseries. This does not apply to: <ul style="list-style-type: none"> • Maintenance of trees and shrubs watered no more than two assigned days per week and by using a hand-held container, hand-held hose with an automatic shutoff nozzle, or low-volume non-spray irrigation. • Maintenance of existing landscaping for fire protection. • Maintenance of plant materials identified to be rare or protected by City Council policy, or essential for the well-being of rare animals. • Maintenance of landscaping within active parks and playing fields, day care centers, school grounds, cemeteries, and golf course greens, with maximum irrigation of two days per week. 	Medium	Mandatory Prohibition
	Stop filling or refilling residential pools and spas.	Medium	Demand Reduction
	Suspension of potable water use for irrigation (100% reduction).	High	Mandatory Prohibition
	City emergency storage withdrawals.	High	Supply Augmentation
	Locally appropriate supply augmentation as per SDCWA WSCP.	High	Supply Augmentation
	Increase initiative to install pressure regulators to all homes and businesses that do not currently have one and require a downward adjustment of all pressure regulators from 60 PSI to 50 PSI.	High	Operational Change
Water Shortage Level 6: Drought Emergency Condition (consumer demand reduction greater than 50% is required)	Use of flow restrictors on accounts that are non-responsive to outreach, and other mandatory restrictions and enforcement, as necessary	High	Mandatory Prohibition
	Stop all landscape irrigation. This does not apply to: <ul style="list-style-type: none"> • Maintenance of trees and shrubs watered no more than two assigned days per week and by using a hand-held container, hand-held hose with an automatic shutoff nozzle, or low-volume non-spray irrigation. • Maintenance of existing landscaping for fire protection. • Maintenance of plant materials identified to be rare or protected by City Council policy, or essential for the well-being of rare animals. 	High	Mandatory Prohibition
	City emergency storage withdrawals.	High	Supply Augmentation
	Locally appropriate supply augmentation as per SDCWA WSCP.	High	Supply Augmentation
	Increase initiative to install pressure regulators to all homes and businesses that do not currently have one and require downward adjustment of all pressure regulators from 50 PSI to 40 PSI.	High	Operational Change

APPENDIX

F

Emergency Storage of Water, City Council Policy 400-04

COUNCIL POLICY**CURRENT**

SUBJECT: EMERGENCY STORAGE OF WATER
POLICY NO.: 400-04
EFFECTIVE DATE: December 27, 1973

BACKGROUND:

The City of San Diego's major supply of water is through the aqueducts, canals, and pumping plants of the Metropolitan Water District and the San Diego County Water Authority. While such facilities have an excellent record of service, it is entirely possible for service to be interrupted by floods, earthquakes, or sabotage. Prior to 1963 the Water Utilities Department operated under an unofficial policy of providing approximately one year's storage as an emergency supply. An evaluation of the hazard and possible interruptions balanced against the costs of emergency storage caused us to reevaluate this requirement.

PURPOSE:

To provide a minimum quantity of stored, untreated water to provide for emergencies such as aqueduct failure or aqueduct pump stations outage.

POLICY:

The Water Utilities Department shall have six-tenths of the annual requirement of the City of San Diego and its contractees as active, available storage at the following reservoirs: Lake Skinner, San Vicente, El Capitan, Lower Otay, Murray, and Miramar. The active, available storage shall include any water in the San Vicente Reservoir stored to the account of the San Diego County Water Authority or the Metropolitan Water District of Southern California but shall not include any water stored at El Capitan Reservoir by the Helix Irrigation District. The active, available storage shall also include 60% of the active, available storage in the Metropolitan Water District Lake Skinner Reservoir. Active, available storage shall be that portion of the water which is above the lowest usable outlet of each reservoir.

HISTORY:

Adopted by Resolution R-176832 08/13/1963
Amended by Resolution R-200189 07/02/1970
Amended by Resolution R-209553 12/27/1973