



2020 COACHELLA VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN





2020 Coachella Valley Regional Urban Water Management Plan

Prepared For:

**Coachella Valley Water District
Coachella Water Authority
Desert Water Agency
Indio Water Authority
Mission Springs Water District
Myoma Dunes Mutual Water Company**

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Prepared by Water Systems Consulting, Inc.



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- B. Notification Letters and Newspaper Notices of Plan Preparation and Adoption Hearing
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- D. Standard UWMP Reporting Tables
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- I. DWR UWMP Checklists

Attachments

Water Shortage Contingency Plan for each agency including Legal Authority

References

Acronyms and Abbreviations

°C	Degrees Celsius
°F	Degrees Fahrenheit
AB	Assembly Bill
AF	Acre Foot
AFY	Acre Feet per Year
AHHG	Area of Historic High Groundwater
AMR	Automatic Meter Reader
AOB	Area of Benefit
APA	Administrative Procedures Act
AWWA	American Water Works Association
BDCC	Bermuda Dunes Country Club
BMP	Best Management Practice
CALWARN	California Water/Wastewater Agency Response Network
CAP	Central Arizona Project
CAT	Climate Action Team
CCF	Hundred Cubic Feet
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFS	Cubic Feet per Second
CII	Commercial, Industrial, and Institutional
CIMIS	California Irrigation Management Irrigation System
CPS	City of Palm Springs
CRA	Colorado River Aqueduct
CSD	Coachella Sanitary District
CUWCC	California Urban Water Conservation Council
CVRWVG	Coachella Valley Regional Water Management Group
CVWD	Coachella Valley Water District
CWA	Coachella Water Authority
CWC	California Water Code
DCF	Delta Conveyance Facility
DCP	Drought Contingency Plan
DCR	DWR SWP Delivery Capacity Report
DDW	SWRCB Division of Drinking Water
DFW	California Department of Fish and Wildlife
DIP	Ductile Iron Pipe

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DMM	Demand Management Measure
DRA	Drought Risk Assessment
DWA	Desert Water Agency
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
ERNIE	Emergency Response Network of the Inland Empire
ESA	Endangered Species Act
ET	Evapotranspiration
ET _o	Reference Evapotranspiration
GAC	Granulated Activated Carbon
GIS	Geographic Information System
GPCD	Gallons per Capita per Day
GPM	Gallons per Minute
GRF	Groundwater Replenishment Facility
GRP	Groundwater Replenishment Program
HECW	High Efficiency Clothes Washer
HET	High Efficiency Toilet
IWA	Indio Water Authority
IX	Ion Exchange
KAF	Thousand Acre Feet
KAFY	Thousand Acre Feet per Year
LAFCO	Local Agency Formation Commission
MAF	Million Acre-Feet
MCL	Maximum Contaminant Level
MDMWC	Myoma Dunes Mutual Water Company
MF	Multi-family
MG	Million Gallons
MGD	Million Gallons per Day
MOU	Memorandum of Understanding
MSL	Mean Sea Level
MSWD	Mission Springs Water District
MTBE	Methyl Tertiary Butyl Ether
MVP	Mid-Valley Pipeline
MWD	Metropolitan Water District of Southern California
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration

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NPDES	National Pollutant Discharge Elimination System
PCE	Perchloroethylene
PVC	Polyvinyl Chloride
QSA	Quantification Settlement Agreement
QWEZ	Qualified Water Efficient Landscaper
RIX	Rapid Infiltration and Extraction
RPA	Reasonable and Prudent Alternative
RUWMP	Regional Urban Water Management Plan
RWQCB	Regional Water Quality Control Board
SB X7-7	Senate Bill 7 of Special Extended Session 7
SCSD	Salton Community Services District
SF	Single Family
SOC	Synthetic Organic Chemicals
SOI	Sphere of Influence
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
TCE	Trichloroethylene
ULFT	Ultra-Low Flush Toilet
UV	Ultraviolet
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act
VOC	Volatile Organic Compound
VSD	Valley Sanitary District
WBIC	Weather Based Irrigation Controller
WSCP	Water Shortage Contingency Plan
WFF	Water Filtration Facility
WSS	Water Sense Specification
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

Chapter 1 Introduction

This Regional Urban Water Management Plan (RUWMP) has been prepared on behalf of the six urban water suppliers that serve customers in the Coachella Valley:

- Coachella Valley Water District (CVWD)
- Coachella Water Authority (CWA)
- Desert Water Agency (DWA)
- Indio Water Authority (IWA)
- Mission Springs Water District (MSWD)
- Myoma Dunes Mutual Water Company (MDMWC)

These agencies have historically collaborated on planning efforts related to water resources and their efficient use in the Coachella Valley. Some previous planning efforts have involved some or all of the agencies listed above, and some efforts have involved additional agencies, such as the Valley Sanitary District (VSD). Relevant past and on-going efforts include:

- 2010 Coachella Valley Water Management Plan Update (2010 CVWMP Update)
- 2013 Mission Creek/Garnet Hill Subbasins Water Management Plan (2013 MC/GH WMP)
- 2015 Coachella Valley Salt and Nutrient Management Plan (2015 CV-SNMP)
- 2018 Coachella Valley Integrated Regional Water Management Plan and Stormwater Resource Plan (2018 IRWM/SWR Plan)
- 2021 CV-SNMP Development Workplan and Groundwater Monitoring Program Workplan
- 2022 Sustainable Groundwater Management Act (SGMA) Alternative Plan Update for the Indio Subbasin (in progress)
- 2022 SGMA Alternative Plan Update for the Mission Creek Subbasin (in progress)

1.1 Purpose

The purpose of this RUWMP is to allow the six agencies to address Urban Water Management Plan (UWMP) requirements. These requirements originated in California's Urban Water Management Planning Act of 1983 (Act), and the requirements have been expanded and updated with subsequent legislation. Agencies are required to prepare an updated UWMP every five years and submit it to the California Department of Water Resources (DWR). DWR then performs a review to verify that each UWMP addresses the requirements of the California Water Code (CWC). The current round of UWMPs will report on water use through 2020, and they are due to be submitted to DWR by July 1, 2021.

Although most agencies prepare an individual UWMP and submit it to DWR, the CWC allows agencies to join together to prepare a RUWMP. The RUWMP must include all the same elements as an individual UWMP. Jointly preparing a RUWMP presents an opportunity for agencies to coordinate their efforts on demand projections, characterization of shared supplies, and planning for potential water shortages.

DWR has produced an Urban Water Management Plan Guidebook 2020 (Guidebook) (Final March 2021) to assist water suppliers in UWMP preparation. This Guidebook identifies several additional requirements that have been added by new legislation since the 2015 UWMPs were prepared. Major new requirements identified by DWR include:

- **Five Consecutive Dry-Year Water Reliability Assessment.** The Legislature modified the dry-year water reliability planning from a "multiyear" time period to a "drought lasting five consecutive water years" designation. This statutory change requires a Supplier to analyze the reliability of its water supplies to meet its water use over an extended drought period. Each agency addresses this requirement in Section 7 of its individual chapter.
- **Drought Risk Assessment.** The California Legislature created a new UWMP requirement for drought planning, in part because of the significant duration of recent California droughts and the predictions about hydrological variability attributable to climate change. The Drought Risk

Assessment (DRA) requires a Supplier to assess water supply reliability over a five-year period from calendar years 2021 to 2025 that examines water supplies, water uses, and the resulting water supply reliability under a reasonable prediction for five consecutive dry years. Each agency addresses this requirement in Section 7 of its individual chapter.

- **Seismic Risk.** The Water Code now requires Suppliers to specifically address seismic risk to various water system facilities and to have a mitigation plan. Each agency addresses this requirement in its Water Shortage Contingency Plan (WSCP).
- **Water Shortage Contingency Plan.** In 2018, the Legislature modified the UWMP laws to require a WSCP with specific elements. The WSCP provides a Supplier with an action plan for a drought or catastrophic water supply shortage. Each agency has prepared a WSCP and adopted it alongside this RUWMP.
- **Groundwater Supplies Coordination.** In 2014, the Legislature enacted the SGMA to address groundwater conditions throughout California. Water Code now requires Suppliers' 2020 UWMPs to be consistent with Groundwater Sustainability Plans, in areas where those plans have been completed by Groundwater Sustainability Agencies. In the Coachella Valley, SGMA requirements are being met through the update of two Alternative Plans, one for the Indio Subbasin and one for the Mission Creek Subbasin. The coordination with those efforts is described in Chapter 3 of the RUWMP.
- **Lay Description.** The Legislature included a new statutory requirement for Suppliers to include a lay description of the fundamental determinations of the UWMP, especially regarding water service reliability, challenges ahead, and strategies for managing reliability risks. This description is included as Section 1.3.

The 2020 UWMPs will also require suppliers to document their compliance with Senate Bill (SB) X7-7, the Water Conservation Act of 2009. This legislation required urban suppliers to reduce their per-capita water use by 20 percent by the year 2020. This 2020 RUWMP demonstrates each supplier's compliance with this requirement.

1.2 RUWMP Organization

This report has been organized to reflect the agencies' collaborative efforts in managing shared water resources, while still allowing each agency to meet its individual reporting requirements.

1. Chapter 1 provides an introduction and reviews the purpose and organization of the RUWMP.
2. Chapter 2 provides an overview of the participating agencies and their service areas.
3. Chapter 3 provides a narrative description of water sources used in the region.
4. Chapters 4 through 9 are individual agency chapters. Each agency's individual chapter is structured with the organization recommended in the Guidebook. For each agency, the elements of the individual chapter include:
 1. Introduction and Overview
 2. Plan Preparation
 3. System Description
 4. Water Use Characterization
 5. SB X7-7 Baseline and Targets
 6. Water Supply Characterization
 7. Water Service Reliability and Drought Risk Assessment
 8. Water Shortage Contingency Plan
 9. Demand Management Measures
 10. Plan Adoption, Submittal, and Implementation
5. Appendices provide supporting information and documentation used in preparation of the RUWMP.
6. Each agency has prepared a WSCP to be adopted by its governing board. These WSCPs are attachments to the RUWMP.

1.3 Plain Language Summary

1. Introduction

This Regional Urban Water Management Plan (RUWMP) has been prepared on behalf of six water providers that serve customers in the Coachella Valley. The agencies include:

- Coachella Valley Water District (CVWD)
- Coachella Water Authority (CWA)
- Desert Water Agency (DWA)
- Indio Water Authority (IWA)
- Mission Springs Water District (MSWD)
- Myoma Dunes Mutual Water Company (MDMWC)

These agencies work together on planning efforts related to water resources and their efficient use in the Coachella Valley.

This report has two main parts. Chapters 1 through 3 are regional chapters which provide an overall introduction, descriptions of the six participating agencies, and an overview of the water supplies used in the Coachella Valley. Chapters 4 through 9 are individual agency chapters. Each agency chapter addresses how that participating agency meets its reporting requirements under the Urban Water Management Planning Act.

In addition to the RUWMP, each agency has prepared a WSCP. The WSCP is a document to describe how each agency would respond to a water shortage. These WSCPs are attachments to the RUWMP.

2. Water Supplies

The Coachella Valley Groundwater Basin is used by all six agencies as their primary source of supply for meeting municipal water demands (water used for typical household, business, and local government use). The basin provides storage to help meet demand even in dry years. In a typical year, groundwater pumping is more than the amount of local rain and mountain snowmelt. CVWD and DWA replenish the basin with water imported from outside the basin.

The two largest subbasins in the Coachella Valley Groundwater Basin used to meet municipal water demands are the Indio Subbasin and the Mission Creek Subbasin. Subbasins are portions of a larger groundwater basin – usually separated by faults. In both of these subbasins, water agencies are developing updated plans to address long-term sustainable management of the groundwater basin. These plans were approved by the California Department of Water Resources to meet planning requirements of the Sustainable Groundwater Management Act (SGMA) and are called the Alternative Plans. While the RUWMP is focused on water used for municipal supply, the Alternative Plans address all water use in the Valley, including golf course and agricultural irrigation.

In addition to groundwater, some of the water providers use local stream water, and some have recycled water systems to provide highly treated wastewater for irrigation. Imported water is used for groundwater replenishment and meeting nonurban demands.

3. Water Demands

Each agency's chapter provides a summary of their current water demands (the amount of water customers are using) and their projected water use through 2045. These projections were developed considering variables like climate, population growth, and customer behaviors. Each agency's chapter also describes the Demand Management Measures (DMMs) that encourage efficient water use by all customers. Through these programs, the agencies have seen significant reductions in water use by customers since 2010 and have complied with targets set by the State.

4. Drought Risk

Each agency's chapter presents a comparison of expected supplies and demands under future conditions. The agencies are committed to efficient water use and can implement their WSCPs to reduce demands if needed. However, the agencies anticipate being able to meet all demands through 2045, even throughout a five-year dry period.

Thanks to the storage capacity of the groundwater basin, supplies are very reliable from year to year because the agencies can pump enough groundwater to meet demands. In the longer term, reliability depends on the continued replenishment of the groundwater basin with imported water supplies. The agencies are working together to continue and expand replenishment programs.

5. Contingency Planning

If an extended drought or sudden event (like an earthquake) impacted the region's ability to replenish the groundwater basin or the agency's ability to provide enough water to meet all customer needs, the WSCP may need to be implemented. Each agency's WSCP defines six levels of shortage and outlines the actions that will be required of customers during each level. The six agencies aligned the actions in their plans as much as possible to maintain consistent requirements and messaging for customers throughout the Valley.

6. Preparation and Outreach

The agencies received feedback from the community in developing this RUWMP and the WSCPs. The agencies hosted two public workshops and used an on-line collaboration portal to gather additional feedback. Each agency also made the draft plans available for public review and held a public hearing to consider input. If the WSCPs need to be implemented during a water shortage, the agencies will evaluate how well they are working and consider making changes.

DRAFT

Chapter 2 Agency Descriptions

The Coachella Valley lies in the northwestern portion of a great valley, the Salton Trough, which extends from the Gulf of California in Mexico northwesterly to the Cabazon area. This area lies primarily in Riverside County but also extends into northern San Diego County and northeastern Imperial County. The Colorado River enters this trough, and its delta has formed a barrier between the Gulf of California and the Coachella Valley. The Coachella Valley is ringed with mountains on three sides. On the west and north sides are the Santa Rosa, San Jacinto, and San Bernardino Mountains, which rise more than 10,000 feet above mean sea level (ft msl). To the northeast and east are the Little San Bernardino Mountains, which attain elevations of 5,500 ft msl. The Whitewater River and its tributaries, including the San Gorgonio River, Mission Creek, and Little and Big Morongo Creeks, and Box Canyon Wash, drain the major portion of the Valley.

The Coachella Valley is drained primarily by the Whitewater River that conveys flows southward along the natural alignment to the Coachella Valley Stormwater Channel (CVSC). The CVSC is a man-made channel that conveys flows downstream of Point Happy to the Salton Sea. The Coachella Valley is characterized by low precipitation and high summer daytime temperatures. Water bodies in the Coachella Valley include the Salton Sea, a collection of small ephemeral streams and creeks, and the Whitewater River, an ephemeral stream in the western Coachella Valley.

This chapter provides background information about the agencies participating in this RUWMP and other agencies involved in water resource planning in the Coachella Valley.

2.1 Agencies Participating in RUWMP

The jurisdictional service areas of the six participating agencies are shown in Figure 2-1.

Background about these six agencies is presented in the following sections.

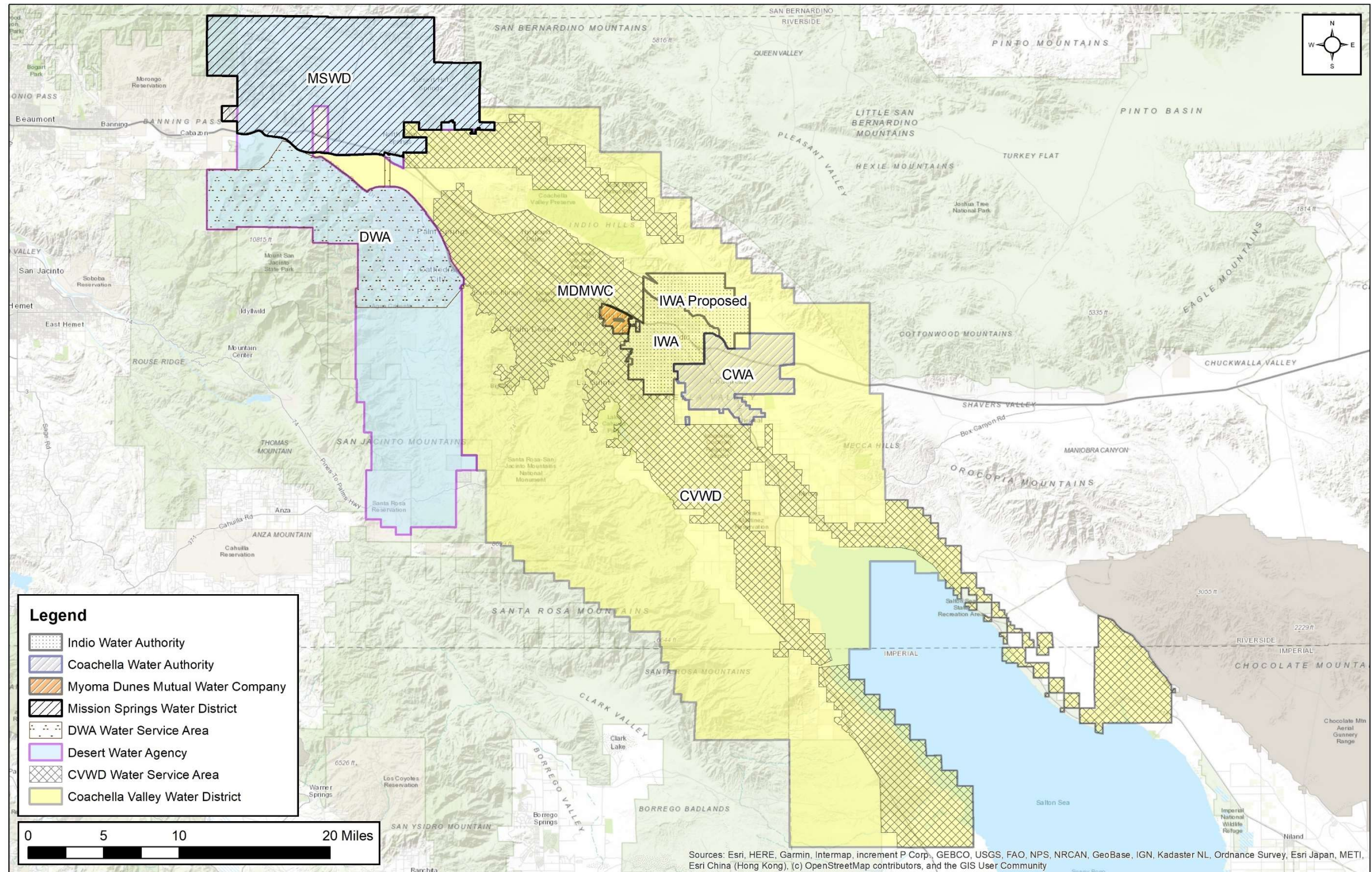


Figure 2-1. Water Agencies Participating in Coachella Valley RUWMP

2.1.1 Coachella Valley Water District

CVWD was formed in 1918 under the County Water District Act provisions of the California Water Code (CWC). In 1937, CVWD absorbed the responsibilities of the Coachella Valley Stormwater District that had been formed in 1915. CVWD now encompasses approximately 640,000 acres, mostly within Riverside County, but also extending into northern Imperial and northeastern San Diego Counties. CVWD is governed by a board of five directors, elected by district voters to four-year terms. Each director lives in and represents one of five directorial divisions in the district and is elected by voters who also reside in that division.

CVWD is a Colorado River water importer and a California State Water Project (SWP) contractor. The water-related services provided by CVWD include:

- Domestic water delivery
- Irrigation water delivery and agricultural drainage
- Wastewater reclamation and recycling
- Stormwater protection
- Groundwater replenishment

2.1.2 Coachella Water Authority

The City of Coachella was incorporated in 1946 and encompasses approximately 32 square miles in the eastern Coachella Valley. The City's sphere of influence encompasses 53 square miles.

CWA provides potable water service in the City of Coachella. The water-related services provided by the City include domestic water delivery, wastewater collection and reclamation, and local drainage control.

The City also manages the Coachella Sanitary District (CSD), which operates a 4.5 MGD design capacity wastewater treatment facility. Currently, CSD discharges treated wastewater to the Coachella Valley Storm Channel. In addition, CSD participated in a regional feasibility study to determine the best available and most cost-effective opportunity to implement a recycled water program and has plans to develop a water reuse system in the future.

The Coachella Water Authority and the Coachella Sanitary District (CSD) are wholly owned component units of the City with its own separate Board of Directors.

2.1.3 Desert Water Agency

DWA is a public agency of the State of California and was formed in 1961 to import water from the State Water Project in an effort to provide a reliable local water supply. In 1968, DWA entered the retail water business by purchasing the Cathedral City and Palm Springs water companies. DWA covers an area of about 325 square miles, including unincorporated Riverside County areas, part of Cathedral City, and most of Palm Springs. DWA is governed by a five-member Board of Directors, elected by residents within DWA boundaries.

DWA manages a domestic water system, a recycled water system, an irrigation water delivery system, a wastewater collection system, and groundwater recharge facilities. Additionally, DWA produces electrical power with two hydroelectric generating plants and two photovoltaic solar installations.

2.1.4 Indio Water Authority

Incorporated in 1930, the City of Indio was the first city in the Coachella Valley. The City encompasses approximately 38 square miles with a sphere of influence that adds approximately 22 square miles north of Interstate 10. The existing land uses include commercial, limited industrial, and residential. The majority of

land use can be classified as residential, varying in density from equestrian and country estates to high-density multi-family dwellings. The proposed future land uses within the sphere of influence include open space, residential, resource recovery, specific plans (assumed mixed use), business park, and a small amount of community commercial.

IWA was formed as a Joint Powers Authority in 2000, wholly owned by the City and Indio Redevelopment Agency, to be the legislative and policy entity responsible for delivering water to residents of the City for all municipal water programs and services.

2.1.5 Mission Springs Water District

MSWD is a public water and wastewater agency organized under the County Water District Law, through the California Water Code. MSWD began as a mutual water company in the late 1940s. By 1953, it had evolved into an incorporated entity, the Desert Hot Springs County Water District. That name was changed to Mission Springs Water District in 1987. MSWD's service area consists of 135 square miles, including the City of Desert Hot Springs, a portion of the City of Palm Springs, and ten smaller communities in Riverside County, including North Palm Springs, West Palm Springs Village and Palm Springs Crest. MSWD is governed by a five-member board, elected from five separate divisions, for a four-year term.

MSWD provides water services to more than 13,500 retail water customers through three independent production and distribution systems; and provides wastewater service to more than 9,200 customers through two independent wastewater collection and treatment systems. As a result of MSWD's Groundwater Quality Protection Program, a septic to sewer conversion program aimed at abating legacy septic systems, MSWD will begin construction on a third treatment plant in 2021. In addition, MSWD provides water conservation services. In 2019, MSWD completed a 1.0 mega-watt solar facility to help offset approximately 25% of energy consumption for its water and wastewater operations.

2.1.6 Myoma Dunes Mutual Water Company

MDMWC is a retail urban water supplier that was established in 1953 to provide potable water service to the community of Bermuda Dunes. MDMWC has grown over the years, seeing housing booms in the mid-1980s, late 1990s, and mid-2000s, and it now provides service to more than 2,500 customers in the Bermuda Dunes area. MDMWC is a mutual water company that is governed by a four-member Board of Directors.

2.2 Other Agencies and Entities

2.2.1 Valley Sanitary District

The Valley Sanitary District (VSD) is a California Special District governed by a locally elected Board of Directors. It was founded in 1925 and is governed by the California Sanitary Act of 1923. Although not a water supplier, VSD provides wastewater collection and treatment service for the City of Indio and the majority of IWA customers. Currently, VSD discharges treated wastewater to the Coachella Valley Stormwater Channel and provides a small amount of treated wastewater for on-site irrigation and agricultural irrigation for local tribes.

IWA is currently pursuing opportunities with VSD to serve recycled water to golf and other customers from VSD's plant in the future.

2.2.2 Agua Caliente Water Authority

The Agua Caliente Water Authority is a branch of Tribal Government that regulates the Tribe's groundwater and surface water.

2.2.3 City of Palm Springs

The City of Palm Springs (CPS) operates a wastewater treatment plant that treats wastewater collected within the City. Approximately 75 percent of the treated effluent is sent to DWA's Recycled Water Plant for further treatment.

2.2.4 Coachella Valley Regional Water Management Group

The Coachella Valley Regional Water Management Group (CVRWVG) is a collaborative effort between CVWD, CWA, DWA, IWA, MSWD, and VSD to implement an Integrated Regional Water Management (IRWM) Plan to address the water resources planning needs of the Coachella Valley. Following formation of the CVRWVG and formal recognition of the Coachella Valley IRWM Region (Region) by DWR through the Region Acceptance Process (RAP), the CVRWVG developed the first IRWM Plan in 2010. The CVRWVG prepared updates to the IRWM Plan in 2014 and 2018. The 2018 IRWM plan also addressed the requirements for a Stormwater Resource (SWR) Plan and therefore is referred to as the 2018 IRWM/SWR Plan. The IRWM/SWR Plan presents an integrated regional approach for addressing water management issues through a process that identifies and involves water management stakeholders from the Coachella Valley. The IRWM/SWR Plan:

- Defines the Coachella Valley IRWM Region and water systems,
- Identifies regional water management goals and objectives,
- Establishes objectives and measurable targets for the Region,
- Identifies water management issues and needs,
- Identifies stakeholder involvement and agency coordination processes,
- Identifies and evaluates resource management strategies,
- Assesses the integration of projects based on objectives,
- Establishes an IRWM and SWR Plan project evaluation and prioritization process based on regional priorities, and
- Establishes a framework for implementation of projects.

The IRWM program is a local water resources management approach directed by the California Department of Water Resources (DWR). It is aimed at securing long-term water supply reliability within California by first recognizing the inter-connectivity of water supplies, and then encouraging the development and implementation of projects that yield combined benefits for water supplies, water quality, and natural resources.

The Region is chiefly the same as the Whitewater River watershed, also known as the Coachella Valley. The Region is about 65 miles long on a northwest-southeast trending axis and covers approximately 1,420 square miles. The Region currently faces multiple potential water supply and quality issues, including increasing water demands, historical groundwater overdraft, stormwater capture and management, groundwater quality, surface water quality, flooding, and regulatory constraints that may be associated with any of these issues.

The Region boundary was recently expanded to include the unincorporated communities of Bombay Beach and North Shore. This will facilitate integrated water resources management within the entire CVWD service area and provide opportunities for Bombay Beach and North Shore to participate in IRWM-related activities.

2.2.5 Indio Subbasin Groundwater Sustainability Agencies

The four water agencies located within the Indio Subbasin are each exclusive Groundwater Sustainability Agencies (GSAs) that oversee and manage portions of the Indio Subbasin that overlay each of their respective service areas. The agencies collaborated to submit the 2010 CVWMP Update as an alternative to a Groundwater Sustainability Plan (GSP). The 2010 CVWMP Update was approved by DWR as a functionally equivalent alternative to a GSP on July 17, 2019. These agencies are developing the Indio Subbasin Alternative Plan Update, which needs to be submitted to DWR by January 1, 2022.

The four Indio Subbasin GSAs include:

- Coachella Valley Water District
- Coachella Water Authority
- Desert Water Agency
- Indio Water Authority

2.2.6 Mission Creek Subbasin Management Committee

The three water agencies located within the Mission Creek Subbasin have formed a Management Committee. CVWD and DWA are each exclusive GSAs that oversee and manage portions of the Mission Creek Subbasin that overlay each of their respective service areas. The three agencies collaborated to submit the 2013 MC/GH WMP as an alternative to a Groundwater Sustainability Plan (GSP). The 2010 CVWMP Update was approved by DWR as a functionally-equivalent alternative to a GSP on July 17, 2019. The Management Committee is developing the Mission Creek Subbasin Alternative Plan Update, which must be submitted to DWR by January 1, 2022.

The three agencies in the management committee include:

- Coachella Valley Water District
- Desert Water Agency
- Mission Springs Water District

2.3 Outreach During RUWMP Preparation

The CWC requires agencies to perform outreach to cities and counties within their service area, the general public, and other interested parties during preparation of the UWMP. In addition to the minimum requirements defined by the CWC, the agencies held two public workshops to present information about the RUWMP and gather input from stakeholders. These workshops were held in December 2020 and March 2021. Due to restrictions on in-person gatherings as a result of the COVID-19 Pandemic, and in compliance with the Governor’s Executive Orders (EOs) related to public meetings (EO-N-25-20, EO-N-29-20, and EO-N-33-20), the meetings were held virtually using an online collaboration platform. The agencies also maintained an online social collaboration site during December 2020 and January 2021 where participants could provide comments and input on the plan following the first public workshop. During the second workshop in March 2021, breakout groups were used to facilitate public comments on key elements of the plan. The concerns and comments received were used to guide the development of the final RUWMP.

In February 2021, formal notifications of RUWMP preparation were provided to the recipients identified in Table 2-1.

Table 2-1. Outreach Recipients

Type	Recipient
City	La Quinta
City	Indio (Indio Water Authority)
City	Coachella (Coachella Water Authority)
City	Palm Desert
City	Cathedral City
City	Indian Wells
City	Rancho Mirage

Type	Recipient
City	Palm Springs
City	Desert Hot Springs
County	County of Riverside Transportation and Land Management Agency - Planning Department
County	Riverside County Flood Control and Water Conservation District
County	Riverside County Department of Environmental Health
County	Imperial County Planning and Development Services
Tribal	Cabazon Band of Mission Indians
Tribal	Agua Caliente Band of Cahuilla Indians
Tribal	Torres Martinez Desert Cahuilla Indians
Tribal	Augustine Band of Cahuilla Indians
Tribal	Twenty-Nine Palms Band of Mission Indians
Tribal	Morongo Band of Mission Indians
Other	Coachella Valley Resource Conservation District
Other	Desert Valley Builders Association

A second set of notices were sent to these recipients to notify them of the time and date for each agency's public hearing to consider feedback. Each agency held a public hearing in June 2021, and each agency's governing board adopted the RUWMP. The details of each agency's adoption are included in the individual agency chapters.

Chapter 3 Regional Sources of Supply

Each of the six agencies has its own portfolio of water sources that it uses to meet demands. The available supplies fall into the major categories below:

- Groundwater
- Colorado River water imported through the Coachella Canal
- State Water Project water exchanged for Colorado River water delivered by the Metropolitan Water District (MWD) of Southern California through the Colorado River Aqueduct
- Local surface water
- Recycled water

These sources are described in the following sections.

3.1 Groundwater

Groundwater is the principal source of municipal water supply in the Coachella Valley. The Coachella Valley Groundwater Basin (DWR Basin No. 7-21) encompasses the entire floor of the Coachella Valley and consists of four subbasins as identified in California Department of Water Resources (DWR) Bulletin 118:

- Indio¹
- Mission Creek
- Desert Hot Springs
- San Gorgonio Pass

The USGS recognizes a fault-bounded portion of the western end of the Indio Subbasin as the Garnet Hill Subbasin. This area is referred to in this report as the Garnet Hill Subarea of the Indio Subbasin, as designated in DWR Bulletin 118.

The agencies have groundwater wells that produce water from the Indio Subbasin, including the Garnet Hill Subarea, the Mission Creek Subbasin, and the San Gorgonio Pass Subbasin. Water from the Desert Hot Springs Subbasin is higher in temperature and salinity, and is not used for potable purposes.

3.1.1 Basin Description

The Coachella Valley groundwater basin, as described by the DWR Bulletin 118, is bounded on the easterly side by the non-waterbearing crystalline rocks of the San Bernardino and Little San Bernardino Mountains and on the westerly side by the crystalline rocks of the San Jacinto and Santa Rosa Mountains. The trace of the Banning fault on the north side of San Gorgonio Pass forms the upper boundary. At the west end of the San Gorgonio Pass, between Beaumont and Banning, the basin boundary is defined by a surface drainage divide separating the Coachella Valley Groundwater Basin from the Beaumont Groundwater Basin of the Upper Santa Ana drainage area.

The southern boundary is formed primarily by the watershed of the Mecca Hills and by the northwest shoreline of the Salton Sea running between the Santa Rosa Mountains and Mortmar. Between the Salton Sea and Travertine Rock, at the base of the Santa Rosa Mountains, the lower boundary coincides with the Riverside/Imperial County Line. Southerly of the southern boundary, at Mortmar and at Travertine Rock, the subsurface materials are predominantly fine grained and low in permeability; although groundwater is

¹ The subbasin is identified as the Indio Subbasin in DWR Bulletin 108 (1964) and Bulletin 118 (2003). However, the subbasin is identified as the Whitewater River Subbasin by the USGS. This report identifies the subbasin as the Indio Subbasin.

present, it is not readily extractable. A zone of transition exists at these boundaries; to the north, the subsurface materials are coarser and more readily yield groundwater.

In 1964, DWR estimated that the Coachella Valley groundwater basin contained a total of approximately 39.2 million acre-feet (AF) of water in the first 1,000 feet below the ground surface; much of this water originated as runoff from the adjacent mountains. Of this amount, approximately 28.8 million AF of water was stored in the Indio Subbasin. However, the amount of water in the subbasin decreased over the years because pumping to serve urban, rural, and agricultural development in the Coachella Valley withdrew water at a rate faster than its rate of recharge. Over the last ten years, the subbasin has seen significant groundwater level increases. These increases are the result of the high volumes of direct replenishment that occurred at Groundwater Replenishment Facilities (GRFs), increased conservation, and projects that provide imported water for irrigation to reduce groundwater pumping. Replenishment and conservation have also resulted in increasing water levels over the last decade in the Mission Creek Subbasin.

Although there is interflow of groundwater throughout the groundwater basin, fault barriers, constrictions in the basin profile and areas of low permeability limit and control movement of groundwater. Based on these factors, the groundwater basin has been divided into subbasins and subareas as described by DWR in 1964 and the USGS in 1971.

The boundaries between subbasins are generally based upon faults that are effective barriers to the lateral movement of groundwater. Minor subareas have also been delineated, based on one or more of the following geologic or hydrologic characteristics: type of water bearing formations, water quality, areas of confined groundwater, forebay areas, groundwater flow divides, and surface drainage divides.

The subbasins used for planning include:

- Indio
- Mission Creek
- Desert Hot Springs
- San Geronio Pass

The subbasins, with their groundwater storage reservoirs, are defined without regard to water quantity or quality. They delineate areas underlain by formations which readily yield the stored water through water wells and offer natural reservoirs for the regulation of water supplies.

The planning subbasins are shown in Figure 3-1.

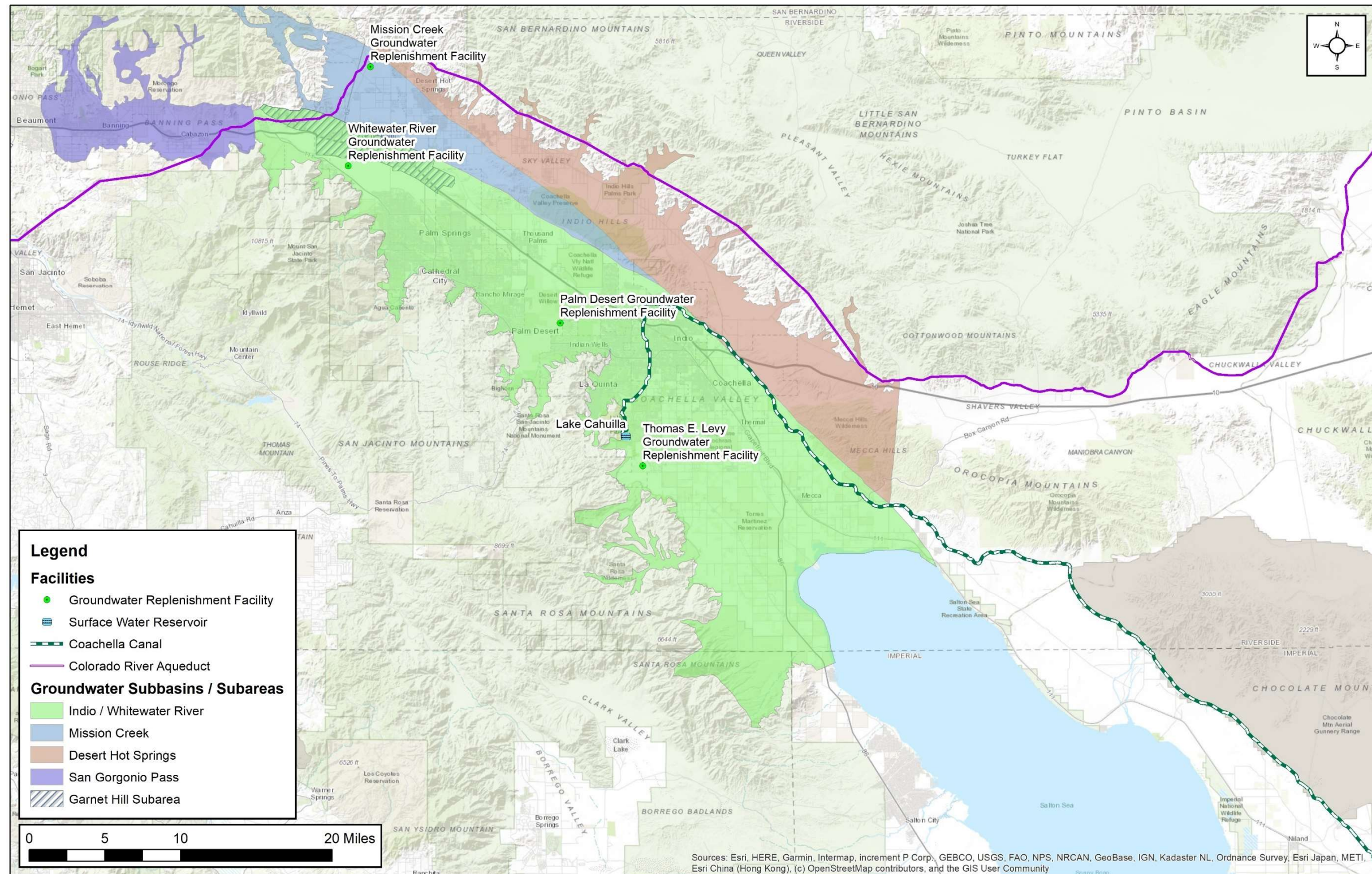


Figure 3-1. Coachella Valley Groundwater Subbasins and Groundwater Replenishment Facilities

3.1.1.1 Indio Subbasin

The Indio Subbasin underlies the major portion of the Coachella Valley floor and encompasses approximately 400 square miles. Beginning approximately one mile west of the junction of State Highway 111 and Interstate 10, the Indio Subbasin extends southeast approximately 70 miles to the Salton Sea. The Indio Subbasin underlies the cities of Palm Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, La Quinta, Indio, and Coachella, and the unincorporated communities of Thousand Palms, Thermal, Bermuda Dunes, Oasis, and Mecca.

The Indio Subbasin is divided for management into the West Valley and the East Valley. The East Valley lies southeast of a line generally extending from Point Happy (a rocky outcrop of the Santa Rosa Mountains near Washington Street and Highway 111) northeast to the Indio Hills near Jefferson Street, and the West Valley is northwest of this line.

Generally, the West Valley, which includes the cities of Palm Springs, Cathedral City, Rancho Mirage, Indian Wells and Palm Desert, has a predominately resort/recreation-based economy that relies on groundwater as its principal water source. In the West Valley portion of the Indio Subbasin, underlying sediments profiles consist of coarse sand and gravel with minor amounts of clay. The aquifer in this area is unconfined, allowing water that applied on the ground surface to percolate directly into the underlying aquifer system, making recharge simple and efficient.

CVWD and DWA collaborate to provide groundwater replenishment in the West Valley. Recharge activities with SWP Exchange water commenced in 1973 at the Whitewater River Groundwater Replenishment Facility (WWR-GRF), north of Palm Springs. Recharge activities at this location have varied with the availability of SWP Exchange water. Groundwater levels in the subbasin have increased or stabilized since recharge commenced. Although some areas of the mid-valley are still experiencing a decline in groundwater levels, the rates of decline have been generally decreasing and many areas have seen increases. Recharge activities began at a newly completed facility, Phase 1 of the Palm Desert Groundwater Replenishment Facility (PD-GRF), in early 2019.

The East Valley includes the cities of Coachella, Indio and La Quinta and the communities of Bermuda Dunes, Mecca, and Thermal. Much of the East Valley has an agricultural-based economy utilizing groundwater and Colorado River water imported through the Coachella Canal. Some portions of the East Valley are underlain by several impervious clay layers (an aquitard) that impedes groundwater recharge. From about Indio southeasterly to the Salton Sea, the subbasin contains increasingly thick layers of silt and clay, especially in the shallower portions of the subbasin. These silt and clay layers, which are remnants of ancient lake bed deposits, impede the percolation of water applied for irrigation and limit groundwater replenishment opportunities to the westerly fringe in this area of the subbasin.

The historical fluctuations of groundwater levels in the East Valley of the Indio Subbasin indicate a steady decline in the levels throughout the subbasin prior to 1949. With the importation of Colorado River water from the Coachella Canal after 1949, the demand on the groundwater basin declined in the East Valley, and the groundwater levels rose sharply. Water levels in the deeper aquifers of the East Valley rose from 1950 to about 1980. However, in the early 1980s, water levels in the East Valley began declining again, at least partly due to increasing urbanization and groundwater usage. In 2009, CVWD implemented large-scale recharge activities in the East Valley at the Thomas E. Levy Groundwater Replenishment Facility (TEL-GRF) that have resulted in increasing water levels.

Conservation and source substitution with Canal water and recycled water are also ongoing strategies to manage groundwater levels throughout the subbasin.

3.1.1.2 Mission Creek Subbasin

Water-bearing materials underlying the Mission Creek upland comprise the Mission Creek Subbasin. The subbasin is bounded on the south by the Banning fault and on the north and east by the Mission Creek fault. The subbasin is bordered on the west by non-water bearing rocks of the San Bernardino Mountains. To the southeast of the subbasin are the Indio Hills, which consist of the semi water-bearing Palm Springs Formation.

Both the Mission Creek fault and the Banning fault are effective barriers to groundwater movement, as evidenced by offset water levels, fault springs, and changes in vegetation. The wells drilled in this subbasin pass through unconsolidated recent alluvium (sands and gravels forming the uppermost geologic formation in the subbasin) and semi-consolidated and interbedded sands, gravels and silts. Although these Pleistocene deposits are the main source of water, water also occurs in recent alluvium where the water table is sufficiently shallow.

The Mission Creek Subbasin is considered an unconfined aquifer with a saturated thickness of 1,200 feet or more and an estimated total storage capacity on the order of 2.6 million acre-feet (MAF). The subbasin is naturally recharged by surface and subsurface flow from the Mission Creek, Dry, and Big Morongo Washes, the Painted Hills, and surrounding mountain drainages. Irrigation return flows and discharges from municipal and individual subsurface wastewater disposal systems also contribute to recharge.

Due to overdraft conditions in the Mission Creek Subbasin, CVWD and DWA began constructing facilities to replenish the Mission Creek Subbasin in October 2001. Facilities were completed in June 2002 and in December 2002, DWA and CVWD began recharge activities in the Mission Creek Subbasin. The current replenishment program is effectively increasing water levels throughout most of the subbasin.

CVWD, DWA, and MSWD jointly developed a water management plan for this subbasin and the Garnet Hill Subarea in 2013 pursuant to a 2004 settlement agreement (the 2013 Mission Creek and Garnet Hill Water Management Plan). This agreement and the 2003 Mission Creek Groundwater Replenishment Agreement between CVWD and DWA (amended in 2014) specify that the available SWP water will be allocated between the Mission Creek and West Whitewater River Subbasin Management Areas in proportion to the amount of groundwater produced or surface water diverted from the West Whitewater River Subbasin management area (West Indio Subbasin Area) and the Mission Creek Subbasin Management Area during the preceding year.

3.1.1.3 Desert Hot Springs Subbasin

The Desert Hot Springs subbasin is bounded on the north by the Little San Bernardino Mountains and to the south by the Mission Creek and San Andreas faults. The San Andreas fault separates the Desert Hot Springs Subbasin from the Indio Subbasin and serves as an effective barrier to groundwater flow. Due to poor quality and low groundwater yields, all potable water demand overlying the subbasin is supplied by wells in the Mission Creek Subbasin. However, wells in the Miracle Hill area produce geothermally heated groundwater that supplies spa resorts in Desert Hot Springs. Private wells in the Fargo Canyon Subarea have historically been used for agricultural irrigation.

3.1.1.4 Garnet Hill Subarea

The area between the Garnet Hill fault and the Banning fault, named the Garnet Hill Subarea of the Indio Subbasin by DWR, was considered a distinct subbasin by the U.S. Geological Survey (USGS) because of the effectiveness of the Banning and Garnet Hill faults as barriers to groundwater movement. The area is bounded on the north by the Banning fault, on the south by the Garnet Hill fault, and on the east and west by non-water to semi-water bearing rocks. DWR considers the area to be part of the Indio Subbasin.

MSWD constructed Well 33 in the Garnet Hill Subbasin with production since 2007. MSWD, CVWD and DWA have jointly developed the 2013 Mission Creek/Garnet Hill Water Management Plan for this Subarea along with the Mission Creek Subbasin. Currently, CVWD includes a portion of the Garnet Hill Subarea in its West Whitewater Area of Benefit replenishment assessment program. Separately, DWA has a replenishment assessment program in its portion of the Garnet Hill Subarea. For SGMA compliance, the area is considered to be part of the Indio Subbasin.

3.1.1.5 San Gorgonio Pass Subbasin

A portion of the MSWD western service area and DWA jurisdictional area is underlain by the San Gorgonio Pass Subbasin. The portion of the Coachella Valley Groundwater Basin that lies entirely within the San Gorgonio Pass is described as the San Gorgonio Pass Subbasin. This subbasin is bounded on the north by the San Bernardino Mountains and by semi-permeable rocks, and on the south by the San Jacinto

Mountains. A surface drainage divide between the Colorado River and South Coastal Hydrologic Study Areas bounds the subbasin on the west. The eastern boundary is formed by a bedrock constriction that creates a groundwater cascade into the Indio Subbasin.

The main water bearing deposits in the subbasin are Holocene and Pleistocene age alluvium and Pliocene to Pleistocene age San Timoteo Formation. Holocene alluvium is mostly gravel and sand and, where saturated, would yield water readily to wells. Within the subbasin, these deposits lie largely above the water table and contribute little water to wells. Holocene alluvium is found in the tributaries of the subbasin and allows runoff to infiltrate and recharge the subbasin. Older, Pleistocene-age alluvium contains sand and gravel, but also large amounts of clay and silt. These deposits yield moderate amounts of water to wells.

The San Gorgonio Pass Subbasin is subdivided into a series of storage units that include the Banning Bench, Banning, Beaumont, and Cabazon storage units. The Cabazon storage unit is recharged naturally with runoff from the adjacent San Jacinto and San Bernardino Mountains.

The Cabazon storage unit encompasses approximately 11 square miles. The Cabazon storage unit is located near the western MSWD boundary. MSWD operates four wells in the Cabazon storage unit. Other groundwater users in the Cabazon storage unit include Desert Hills Premium Outlets, Morongo Band of Mission Indians, and Cabazon Water District.

3.1.2 Groundwater Management

Historically, groundwater overdraft was a concern for much of the Coachella Valley. CVWD and DWA jointly operate groundwater replenishment programs (GRPs) in the West Whitewater River Subbasin and Mission Creek Subbasin management areas, and CVWD operates a replenishment program in the East Whitewater River Subbasin area of benefit (AOB). These programs have had a significant beneficial effect on overdraft. To recover the cost of the GRP, a Replenishment Assessment Charge (RAC) is applied to all non-exempted groundwater production. These RACs are calculated and managed separately by each agency for each of the AOBs.

In 2002, CVWD adopted the Coachella Valley Water Management Plan (CVWMP) to address groundwater overdraft and is working collaboratively with other agencies to implement that plan. An update to the CVWMP was adopted in 2012 and a status report was prepared in 2014 and 2016. Projects constructed in the past 12 years include the TEL-GRF in La Quinta, the PD-GRF, the Martinez Canyon Pilot Recharge Facility in Oasis, and Phase I of the Mid-Valley Pipeline project, which conveys Coachella Canal water to the mid-valley, where it can be delivered directly or mixed with recycled water from WRP-10 to meet irrigation demands of golf courses in the Indian Wells-Palm Desert-Rancho Mirage area of the Valley.

As noted above, CVWD and DWA began recharge operations at the Mission Creek GRF (MC-GRF) in 2002. In addition, CVWD, DWA, and MSWD completed and adopted the 2013 Mission Creek/Garnet Hill Water Management Plan to address groundwater overdraft and the agencies (collectively the Management Committee) are implementing that plan. Projects constructed in the past eight years include septic to sewer conversion projects, abating approximately 3,400 septic tanks, and installation of additional monitoring wells. In addition, MSWD will begin construction of its Regional Water Reclamation Facility in 2021 to provide the treatment capacity needed to complete removal of all legacy septic tank systems throughout its service area.

Additional programs focusing on conversion of groundwater pumpers to recycled and imported Coachella Canal water over the next ten years are intended to prevent future overdraft. During extended drought periods when SWP Exchange water deliveries for replenishment are reduced, continued groundwater pumping could result in short-term overdraft. Reduced replenishment could result in lower groundwater levels, which are expected to recover when normal supply conditions resume. Short-term reductions in replenishment due to droughts are not expected to affect long-term supply reliability.

3.1.3 Sustainable Groundwater Management Act

In 2014, the California Legislature enacted the Sustainable Groundwater Management Act (SGMA), a package of three bills (AB 1739, SB 1168, and SB 1319), that empowers local agencies to sustainably manage groundwater resources. SGMA defines sustainable groundwater management as the management of groundwater supplies in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.

A local agency, combination of local agencies, or county may establish a GSA. It is the GSA's responsibility to develop and implement a groundwater sustainability plan (GSP) that considers all beneficial uses and users of groundwater in the basin. GSAs must develop GSPs with measurable objectives and interim milestones that ensure basin sustainability by 2042. A basin may be managed by a single GSP or multiple coordinated GSPs. A basin can be managed by an alternative to a GSP if approved by DWR.

SGMA compliance efforts are ongoing in three subbasins: Indio, Mission Creek, and San Geronio Pass. DWA, CVWD, IWA, and CWA all filed to become GSAs and jointly manage the Indio Subbasin. The 2003 Mission Creek Groundwater Replenishment Agreement (amended in 2014) and 2004 Mission Creek Settlement Agreement guide management of the Mission Creek Subbasin. CVWD and DWA filed for GSA status in the Mission Creek Subbasin. The Mission Creek Subbasin Annual Report provides additional information regarding the CVWD, DWA, and MSWD 2004 Settlement Agreement, the subsequent Management Committee, and how the agencies are working together under SGMA. DWA is one of three GSAs completing a GSP in the San Geronio Pass Subbasin.

The agencies submitted the 2010 Coachella Valley Water Management Plan and the 2013 Mission Creek and Garnet Hill Water Management Plan as Alternative Plans under SGMA for the Indio and Mission Creek Subbasins, respectively. The agencies prepared bridge documents to show how these alternative plans met the requirements of SGMA for each subbasin. The Alternative Plans were accepted by DWR, and they are currently being updated for submittal by January 1, 2022.

3.1.4 Groundwater Quality

According to the 2010 CVWMP, groundwater quality in the Coachella Valley varies with depth, proximity to faults and recharge basins, presence of surface contaminants, and other hydrogeologic or human factors. Ongoing basin-wide groundwater quality monitoring found that drinking water supplied from groundwater wells complies with all state and federal drinking water quality standards, with the exception of arsenic and the proposed chromium-6 Maximum Contaminant Level (MCL) of 10 parts per billion (ppb). Both substances are naturally occurring in some portions of the groundwater basin.

Where it is an issue, suppliers are meeting the MCL for arsenic through a combination of treatment and blending approaches.

Chromium-6, also known as Cr-6 and hexavalent chromium, is a natural element that occurs in groundwater in the Coachella Valley due to the erosion of natural deposits. Cr-6 levels are controlled in California drinking water by existing regulations that include a MCL of 50 parts per billion (ppb) for total chromium, which is twice as stringent as the national MCL for total chromium of 100 ppb established by the United States Environmental Protection Agency (EPA). California's Senate Bill 351, adopted in 2001, required the state to develop a drinking water standard for Cr-6. State health officials enacted the country's first Cr-6 drinking water standard or MCL in 2014. In May 2017, a judge invalidated the MCL because the state failed to properly consider the economic feasibility of compliance. The State Water Resources Control Board is now working on establishing a new Cr-6 MCL for drinking water.

Total dissolved solids (TDS) and salinity of the groundwater basin is also an important water quality parameter. Efforts are being made to analyze this through the Coachella Valley Groundwater Basin Salt and Nutrient Management Plan.

3.2 Imported Water

The Coachella Valley has access to two sources of imported water:

1. CVWD has rights to receive Colorado River water delivered through the Coachella Canal, a branch of the All-American Canal.
2. CVWD and DWA are SWP contractors. As such, they have rights to receive water from the State Water Project, which conveys water from northern California south to Lake Perris and other endpoints. There is no physical infrastructure to convey SWP water to the Coachella Valley. Therefore, CVWD and DWA have entered into exchange agreements with MWD. MWD's Colorado River Aqueduct (CRA) conveys water from the Colorado River through the Coachella Valley and eventually to Lake Mathews. The exchange agreements allow MWD to deliver Colorado River Water to CVWD and DWA for use in groundwater recharge in the West Whitewater River Subbasin Management Area and the Mission Creek Subbasin Management Area. In exchange, MWD receives SWP water that would have gone to CVWD and DWA.

The imported water sources and conveyance infrastructure are shown in Figure 3-2.

3.2.1 Colorado River Water

Colorado River water has been a major source of supply for the Coachella Valley since 1949 with the completion of the Coachella Canal. The Coachella Canal (Canal) is a branch of the All-American Canal that brings Colorado River water into the Imperial and Coachella Valleys. The Canal originates at Drop 1 on the All-American Canal and extends approximately 122 miles, terminating in CVWD's Lake Cahuilla. This water is used for agricultural, golf course, and landscape irrigation purposes, as well as groundwater recharge.

The Colorado River is managed and operated in accordance with the Law of the River, the collection of interstate compacts, federal and state legislation, various agreements and contracts, an international treaty, a U.S. Supreme Court decree, and federal administrative actions that govern the rights to use of Colorado River water within the seven Colorado River Basin states. The Colorado River Compact, signed in 1922, apportioned the waters of the Colorado River Basin between the Upper Basin (Colorado, Wyoming, Utah, and New Mexico) and the Lower Basin (Nevada, Arizona, and California). The Colorado River Compact allocates 15 million AFY of Colorado River water: 7.5 million AFY to the Upper Basin and 7.5 million AFY to the Lower Basin, plus up to 1 million AFY of surplus supplies. In addition to those allocations, Mexico was allocated 1.5 million AFY. The Lower Basin's water was further apportioned among the three Lower Basin states by the Boulder Canyon Project Act in 1928 and the 1964 U.S. Supreme Court decree in *Arizona v. California*. Arizona's basic annual apportionment is 2.8 million AFY, California's is 4.4 million AFY, and Nevada's is 0.3 million AFY.

California's apportionment of Colorado River water is allocated by the 1931 Seven Party Agreement. The parties involved include:

- Palo Verde Irrigation District (PVID)
- Imperial Irrigation District (IID)
- CVWD
- MWD
- City of Los Angeles
- City of San Diego
- County of San Diego

The allocations of the City and the County of San Diego and the City of Los Angeles are now incorporated into MWD's allocations. The allocations defined in the Seven Party Agreement are shown in Table 3-1.

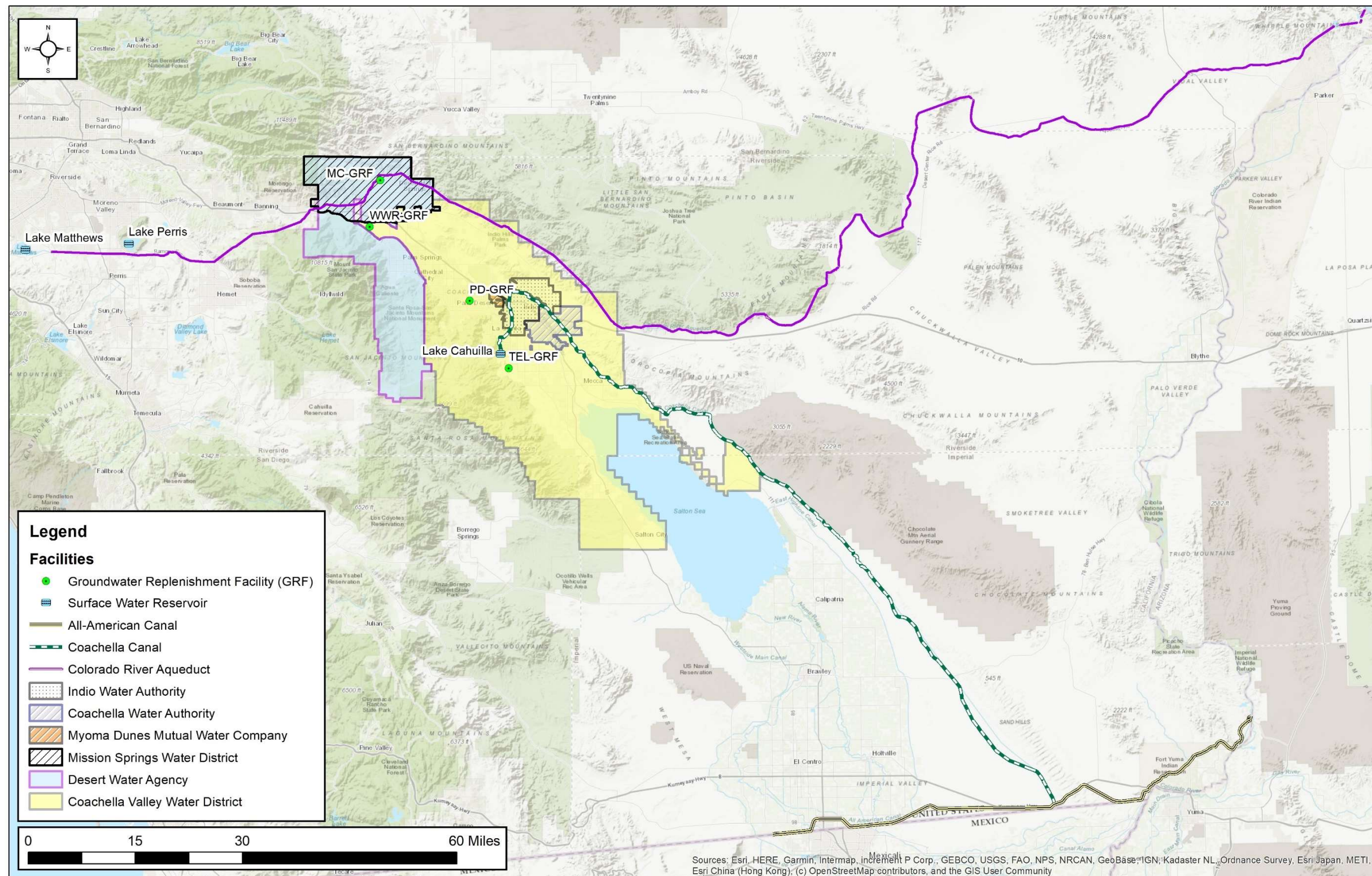


Figure 3-2. Sources of Imported Water Supply

Table 3-1. Priorities and Water Delivery Contracts, California Seven-Party Agreement of 1932

Priority	Description	AFY
1	Palo Verde Irrigation District gross area of 104,500 acres of valley lands	3,850,000
2	Yuma Project (Reservation Division) not exceeding a gross area of 25,000 acres within California	
3(a)	Imperial Irrigation District, Coachella Valley Water District, and lands in Imperial and Coachella Valleys to be served by the All-American Canal	
3(b)	Palo Verde Irrigation District – 16,000 acres of mesa lands	
4	Metropolitan Water District of Southern California for use on coastal plain	550,000
Subtotal – California’s Basic Apportionment		4,400,000
5(a)	Metropolitan Water District of Southern California for use on coastal plain	550,000
5(b)	Metropolitan Water District of Southern California for use on coastal plain [lower priority than 5(a)]	112,000
6(a)	Imperial Irrigation District and lands in the Imperial and Coachella Valleys to be served by the All-American Canal	300,000
6(b)	Palo Verde Irrigation District – 16,000 acres of mesa lands	
	Total	5,362,000
Notes:		
Priorities 5-6 would only receive water if there is water available in excess of the 7.5 million AFY for the Lower Basin states or unused water within the Lower Basin.		
Sources: United States Bureau of Reclamation, http://www.usbr.gov ; 2010 Coachella Valley Water Management Plan Update, January 2012, p. 4-14, Table 4-2.		

In its 1979 supplemental decree in the Arizona v. California case, the United States Supreme Court also assigned “present perfected rights” to the use of river water to a number of individuals, water districts, towns and Indian tribes along the river. These rights, which total approximately 2.875 million AFY, are charged against California’s 4.4 million AFY allocation and must be satisfied first in times of shortage. Under the 1970 Criteria for Coordinated Long-Range Operation of the Colorado River Reservoirs (Operating Criteria), the Secretary of the Interior determines how much water is to be allocated for use in Arizona, California, and Nevada and whether a surplus, normal, or shortage condition exists. The Secretary may allocate additional water if surplus conditions exist on the Colorado River.

California’s Colorado River supply is protected by the 1968 Colorado River Basin Project Act (PL 90- 537, 1968), which authorized construction of the Central Arizona Project (CAP). This act provides that, in years of insufficient supply on the main stream of the Colorado River, supplies to the CAP shall be reduced to zero before California will be reduced below 4.4 million AF in any year. This provision assures full supplies to the Coachella Valley except in periods of extreme drought.

CVWD’s use of Colorado River water is authorized under the terms of a contract between the United States and CVWD, signed October 15, 1934, under which the United States built the Imperial Dam, the All-American Canal and the Coachella Canal, and agreed to deliver water to CVWD in accordance with the priorities of the Seven Party Agreement and the 1934 Compromise Agreement between CVWD and

Imperial Irrigation District (IID), that subordinated CVWD's right to use water to that of IID. CVWD's rights would later be quantified under the Quantification Settlement Agreement (QSA) in 2003.

The service area for Colorado River water delivery under CVWD's contract with the Bureau of Reclamation is defined as Improvement District No. 1 (ID-1) which encompasses most of the East Valley and a portion of the West Valley north of Interstate 10. Under the 1931 California Seven Party Agreement, CVWD has water rights to Colorado River water as part of the first 3.85 million AFY allocated to California. CVWD is in the third priority position along with IID.

3.2.1.1 Quantification Settlement Agreement

In October 2003, CVWD, IID, MWD, and the San Diego County Water Authority along with the state and federal governments executed the QSA. The QSA quantifies the Colorado River water allocations of California's contractors for the next 75 years and provides for the transfer of water between agencies. Under the QSA, CVWD has a base allotment of 330,000 AFY. In accordance with the QSA, CVWD has entered into water transfer agreements with MWD and IID that increase CVWD supplies as shown in Table 3-2.

Table 3-2. CVWD Colorado River Water Budget under the Quantification Settlement Agreement

Component	2020 Amount (AFY)	2027 – 2045 Amount (AFY)
Base Entitlement	330,000	330,000
1988 MWD/IID Approval Agreement	20,000	20,000
First IID/CVWD Transfer	50,000	50,000
Second IID/CVWD Transfer ¹	23,000	53,000
Less Coachella Canal Lining (to SDCWA)	-26,000	-26,000
Less Miscellaneous/Indian Present Perfected Rights	-3,000	-3,000
QSA Diversions	394,000	424,000
MWD/CVWD SWP Transfer ²	35,000	35,000
Total Allocations	429,000	459,000
Less Conveyance Losses and Regulatory Water ³	-26,200	-22,950
Total Deliveries to CVWD	402,800	436,050
Notes:		
1. The Second IID/CVWD Transfer began in 2018 with 13,000 AF of water. This amount increases annually by 5,000 AFY for a total of 53,000 AFY in 2026.		
2. The 35,000 AFY MWD/CVWD SWP Transfer may be delivered at either Imperial Dam or Whitewater River and is not subject to SWP or Colorado River reliability.		
3. Conveyance losses (5%) and regulatory water based on historic averages.		

The QSA requires most Colorado River water to be delivered at Imperial Dam, via the All-American Canal to the Coachella Canal. The 35,000 AFY MWD/CVWD SWP Transfer can also be delivered to the Whitewater Turnout on the CRA. Deliveries at Whitewater are subject to a supplemental energy charge for CRA pumping. The 35,000 AFY supply is not subject to SWP delivery reliability, rather it is a fixed annual delivery. Either MWD or CVWD may request a reduction or elimination of delivery in a given year subject to mutual consent. However, no QSA water may be used in the Mission Creek Subbasin. Delivery of this water to the WWR-GRF commenced in 2010; the amount delivered each year has varied based on supply

conditions. The 2019 Second Amendment to the Delivery and Exchange Agreement with MWD allows CVWD to receive 15,000 AF of the 20,000 AF 1988 MWD/IID Approval Agreement water at the WWR-GRF through 2026.

3.2.1.2 Canal Water Deliveries

CVWD manages the Coachella Canal and associated water delivery system used to irrigate over 60,000 acres of farmland in the ID-1 Service Area. The Coachella Canal was built during the period from August 1938 to June 1948, with construction halted during World War II. Construction of the underground distribution system was initiated in 1948 and completed in 1954. The Canal distribution system was constructed and engineered to follow the natural slope of the land to allow the free flow of water using the force of gravity. Irrigation pumps are used to deliver water to elevated areas within the availability zones. This lateral distribution system delivers water to farmers at the highest point of every 40 acres of eligible land within the District's service area.

In addition to agricultural irrigation, Canal water is currently delivered to 30 golf courses and an additional 9-holes on another course in the Indio Subbasin in-lieu of groundwater to reduce groundwater pumping. Golf courses served with Canal water are required to meet at least 80 percent of their water needs with Colorado River water. CVWD is working with one additional golf course to connect it to the Canal water distribution system.

3.2.1.3 Mid-Valley Pipeline

The Mid-Valley Pipeline (MVP) is a pipeline distribution system to deliver Canal water to the mid-Valley area for golf course and landscape irrigation. Some customers receive only Canal water, while others receive a blend of Canal water and recycled water from WRP-10. This source substitution project reduces groundwater pumping for these uses.

Construction of the first phase of the MVP from the Coachella Canal in Indio to CVWD's WRP-10 in Palm Desert (6.6 miles in length) was completed in 2009. Currently, six golf courses receive Canal water directly from the MVP. An additional 15 golf courses receive a blend of Canal water from the MVP blended with recycled water from CVWD's WRP-10.

Implementation of later phases will expand the non-potable system to be able to serve approximately 38 golf courses in the Rancho Mirage-Palm Desert-Indian Wells area that currently use groundwater as their primary source of supply with Canal water or a blend with recycled water. Golf courses connected to the MVP or non-potable system are required to meet at least 80 percent of their water needs with non-potable water.

A total of six homeowner's associations (HOAs) and municipal buildings also receive a blend of recycled water and Canal water from the MVP. The MVP and WRP-10 non-potable system currently serves approximately 12,000 AFY of Canal water and 7,000 AFY of CVWD's WRP-10 recycled water.

3.2.1.4 Oasis In-Lieu Recharge Project

The Oasis In-Lieu Recharge Project is an in-lieu source-substitution project identified in the 2010 CVWMP Update that will supply approximately 32,000 AFY to offset groundwater pumping for agricultural irrigation. System improvements required to convey water to these lands include construction of gravity and pressurized pipelines, surface reservoirs, pump stations, and related modifications and connections to the existing irrigation system. The project will be constructed, owned, and operated by CVWD. It will be connected to the existing water delivery system (Lateral 97.1) that serves the Oasis Area. This lateral serves one of the six distinct service zones within Improvement District No. 1 (ID-1). Its headworks is a turnout from the Coachella Canal and it heads southwesterly across the Coachella Valley to the Oasis Tower location at the intersection of Avenue 70 and Polk Street.

Phase I of the project included two reservoirs to provide additional storage and operational improvements and flexibility in the Oasis area. Construction on Phase I of the project was completed in December 2020. The construction of Phase II is scheduled to be completed by 2023. Connections to the distribution system are expected to be phased in between 2023 and 2028.

3.2.2 State Water Project Water/MWD Exchange

To recharge groundwater supplies in the Management Areas of the West Whitewater River and Mission Creek subbasins, CVWD and DWA obtain imported water supplies from the SWP. The SWP is managed by DWR and includes 660 miles of aqueduct and conveyance facilities extending from Lake Oroville in northern California to Lake Perris in the south. The SWP has contracts to deliver 4.172 million AFY to 29 contracting agencies. DWA and CVWD initially contracted with the State of California for SWP water in 1962 and 1963, respectively. CVWD's original SWP water allocation (Table A Amount) was 23,100 AFY, while DWA's original SWP water allocation was 38,100 AFY. As a result of the water transfers in Table 3-3, CVWD's current Table A allocation is 138,350 AFY and DWA's Table A allocation is 55,750 AFY for a total of 194,100 AFY to the Coachella Valley. These totals are shown in Table 3-3.

Table 3-3. State Water Project Allocations to CVWD and DWA (AFY)

Agency	Original SWP Table A	Tulare Lake Basin Transfer #1	Tulare Lake Basin Transfer #2	MWD Transfer	Berrenda-Mesa Transfer	Current Total Table A
CVWD	23,100	9,900	5,250	88,100	12,000	138,350
DWA	38,100	0	1,750	11,900	4,000	55,750
Total	61,200	9,900	7,000	100,000	16,000	194,100

Each year, DWR determines the amount of water available for delivery to SWP contractors based on hydrology, reservoir storage, the requirements of water rights licenses and permits, water quality and environmental requirements for protected species in the Sacramento-San Joaquin Delta. The available supply is then allocated according to each SWP contractor's updated Table A Amount (including both their original allocation and subsequent transfers). CVWD and DWA jointly manage their combined SWP Table A Amounts, allocating costs in proportion to total groundwater production within the West Whitewater River Subbasin Management Area and the Mission Creek Subbasin Management Area Areas of Benefit, within their respective service areas.

3.2.2.1 SWP Exchange and Advance Delivery Agreements

SWP Exchange water has been used to recharge the Management Area of the West Whitewater River Subbasin at the WWR-GRF since 1973. Because CVWD and DWA do not have a physical connection to SWP conveyance facilities, MWD takes delivery of CVWD's and DWA's SWP water, and in exchange, delivers an equal amount of Colorado River water to the Whitewater Service Connections (for recharge at WWR-GRF and MC-GRF).

In December of 2019, the Agreement between MWD, CVWD, and DWA for the exchange and advance delivery was amended and restated. The restated agreement notes that:

- CVWD and DWA entered into separate exchange agreements with MWD in 1967 under which CVWD and DWA deliver their SWP water to MWD, and in exchange MWD delivers a like amount of Colorado River Water to CVWD and DWA.
- In 1984, the three parties entered into the Advance Delivery Agreement, which allowed MWD to deliver Colorado River water in advance to be credit against its future water exchange obligations.
- In 2003, the parties entered the 2003 Exchange Agreement, which amended the 1983 Exchange Agreements and the Advance Delivery Agreement. It also provided for the transfer of 100,000 AFY of MWD's Annual Table A amount to CVWD and DWA in exchange for a like quantity of MWD's Colorado River Water. The agreement also provided MWD an annual option to call-back the 100,000 AF transfer under certain conditions.
- The purposes of the restated agreement were to make necessary updates, end MWD's right to call back 100,000 AFY of Table A water, and allow MWD to defer certain Colorado River deliveries to CVWD and DWA.

The amount of water that has been pre-delivered is accounted for and reported annually in the Engineer's Reports on Water Supply and Replenishment prepared by CVWD and DWA. As of December 31, 2020, the advance delivery account balance was 313,400 AF.

MWD and CVWD have a separate agreement for delivery and exchange of 35,000 AF. This agreement was first created in 2003, amended in 2015, and amended for the second time in 2019. The 2019 amendments provided for an exchange of additional water and streamlined provisions of the agreement related to delivery, billing, and payments.

3.2.2.2 SWP Reliability

DWR prepares a biennial report to assist SWP contractors and local planners in assessing the availability of supplies from the SWP. DWR issued its most recent update, the 2019 DWR State Water Project Delivery Capability Report (DCR), in August 2020. In this update, DWR provides SWP supply estimates for SWP contractors to use in their planning efforts, including the 2020 UWMPs. The 2019 DCR includes DWR's estimates of SWP water supply availability under both existing (2020) and future (2040) conditions.

DWR's estimates of SWP deliveries are based on a computer model that simulates monthly operations of the SWP and Central Valley Project systems. Key inputs to the model include the facilities included in the system, hydrologic inflows to the system, regulatory and operational constraints on system operations, and contractor demands for SWP water. In conducting its model studies, DWR must make assumptions regarding each of these key inputs.

In the 2019 DCR for its model study under existing conditions, DWR assumed: existing facilities, hydrologic inflows to the model based on 82 years of historical inflows (1922 through 2003), current regulatory and operational constraints including 2018 Addendum to the Coordinated Operation Agreement (COA), 2019 biological opinions and 2020 Incidental Take Permit, and contractor demands at maximum Table A Amounts. The long-term average allocation reported in the 2019 DCR for the existing conditions study provide appropriate estimate of the SWP water supply availability under current conditions.

To evaluate SWP supply availability under future conditions, the 2019 DCR included a model study representing hydrologic and sea level rise conditions at 2040. The future condition study used all of the same model assumptions as the study under existing conditions, but reflected changes expected to occur from climate change, specifically, projected temperature and precipitation changes centered around 2035 (2020 to 2049) and a 45-centimeter sea level rise. For the long-term planning purposes of this RUWMP, the long-term average allocations reported for the future conditions study from 2019 DCR is the most appropriate estimate of future SWP water supply availability.

CVWD and DWA are using the estimated long-term average allocation to be 58 percent for existing conditions through 2039, and 52 percent for future conditions beginning in 2040.

DWR's 2019 DCR indicates that the modeled single dry year SWP water supply allocation is 7% under the existing conditions. However, historically the lowest SWP allocations were at 5% in 2014 and initial allocations in 2021. Due to extraordinarily dry conditions in 2013 and 2014, the initial 2014 SWP allocation was a historically low 5% of Table A Amounts, was later reduced to 0% in January 2014, and was later raised back to 5%, the lowest ever final total SWP water supply allocation. The circumstances that led to the low 2014 SWP water supply allocation were unusual, and although possible, likely have a low probability of frequent occurrence.

Each year by October 1, SWP contractors submit their requests for SWP supplies for the following calendar year. By December 1, DWR estimates the available water supply for the following year and sets an initial supply allocation based on the total of all contractors' requests, current reservoir storage, forecasted hydrology through the next year, and target reservoir storage for the end of the next year. The most uncertain of these factors is the forecasted hydrology. In setting water supply allocations, DWR uses a conservative 90% hydrologic forecast, where nine out of ten years will be wetter than the assumed forecast and one out of ten years drier than the assumed forecast. DWR re-evaluates its estimate of available supplies throughout the runoff season of winter and early spring, using updated reservoir storage and hydrologic forecasts, and revises SWP supply allocations as warranted. Since most of California's annual precipitation falls in the winter and early spring, by the end of spring the supply available for the year is

much more certain, and in most years DWR issues its final SWP allocation by this time. While most of the water supply is certain by this time, runoff in the late fall remains somewhat variable as the next year's runoff season begins. A drier than forecasted fall can result in not meeting end-of-year reservoir storage targets, which means less water available in storage for the following year.

Water year 2013 was a year with two hydrologic extremes. October through December 2012 was one of the wettest fall periods on record, but was followed by the driest consecutive 12 months on record. The SWP supply allocation for 2013 was a low 35%. However, the 2013 hydrology ended up being even drier than DWR's conservative hydrologic forecast, so the SWP began 2014 with reservoir storage lower than targeted levels and less stored water available for 2014 supplies. Compounding this low storage situation, 2014 also was a critically dry year, with runoff for water year 2014 the fourth driest on record.

The exceedingly dry sequence from the beginning of 2013 through the end of 2014 was one of the driest two-year periods in the historical record. As noted above, the circumstances that led to the low 2014 and 2021 SWP water supply allocation were unusual, and likely have a low probability of frequent occurrence in the future. Thus, the assumption for SWP contractors such as CVWD and DWA is that a 5% allocation represents the "worst-case" scenario.

3.2.2.3 Yuba Accord

In 2008, CVWD and DWA entered into separate agreements with DWR for the purchase and conveyance of supplemental SWP water under the Yuba River Accord Dry Year Water Purchase Program (Yuba Accord). This program provides dry year supplies through a water purchase agreement between DWR and Yuba County Water Agency, which settled long-standing operational and environmental issues over instream flow requirements for the lower Yuba River. Yuba Accord water transfers could include both surface water and groundwater substitution transfers for an estimated total of up to 140,000 AFY. The amount of water available for purchase varies annually and is allocated among participating SWP contractors based on their Table A amounts.

3.2.2.4 Rosedale – Rio Bravo Transfers

In 2008, CVWD entered into an agreement with Rosedale-Rio Bravo Water Storage District (Rosedale Rio-Bravo) for a one-time transfer of 10,000 AF of Glorious Lands Company (GLC) water intended for a property development located in Riverside County within CVWD's boundary. In 2012, CVWD entered into an Assignment Agreement with GLC to take over GLC's water rights for the term of the 2005 Water Supply Agreement between GLC and Rosedale Rio-Bravo. The Assignment Agreement provides a total of 252,500 AF to CVWD from Rosedale Rio-Bravo through 2035. CVWD also entered into a letter agreement with MWD in 2012 for the delivery and exchange of up to 16,500 AFY of non-Table A SWP water that Rosedale Rio-Bravo provides to CVWD. The water from Rosedale Rio-Bravo is delivered to CVWD as exchange water from MWD at the WWR-GRF.

In 2020, CVWD finalized a supplemental letter agreement with Rosedale Rio-Bravo and a Point of Delivery Agreement with DWR that increased the limit on the amount Rosedale Rio-Bravo can deliver to CVWD in any one year (from 16,500 to 20,000 AFY), but does not change the total volume delivered during the life of the agreement through 2035.

3.2.2.5 Delta Conveyance Facility

The Delta Conveyance Project (DCF) is a State project that would improve SWP reliability and result in increased deliveries in the future. The existing SWP water conveyance facilities in the Delta, which include Clifton Court Forebay and the Banks Pumping Plant, enable DWR to divert water to the California Aqueduct. The Delta Conveyance Facility (DCF) would construct and operate new conveyance facilities in the Delta, primarily a new tunnel to bypass existing natural channels used for conveyance. New intake facilities would be located in the north Delta along the Sacramento River between Freeport, CA and the confluence with Sutter Slough. A new tunnel would convey water from the new intakes to the existing Banks Pumping Plant and potentially the federal Jones Pumping Plant, both in Byron, CA in the south Delta. The new facilities would provide an alternate location for diversion of water from the Delta and would be operated in coordination with the existing south Delta pumping facilities.

Construction of the DCF will improve water supply reliability for State Water Contractors by addressing in-Delta conveyance, with its myriad of constraints. Because the SWP currently relies on the Delta's natural channels to convey water, it is vulnerable to earthquakes, climate change, and pumping restrictions established to protect in-stream species and habitats. Certain pumping restrictions in the south Delta can prevent the SWP from reliably capturing water when it is available, especially in wet weather. The DCF would add new diversions in the north Delta to promote a more resilient and flexible SWP in the face of unstable future conditions. Combined with the current through-Delta method, the addition of DCF is referred to as the "dual conveyance" system.

CVWD and DWA have approved an agreement to advance their share of funding for DCF planning and design costs, and will consider approval of an Agreement in Principle for the Delta Conveyance Facility in 2021.

3.2.2.6 Lake Perris Dam Seepage Recovery Project

In 2017, MWD and DWR began preliminary planning for recovery of seepage below the Lake Perris Dam and delivery of the recovered water to MWD in addition to its current allocated Table A water. The project is composed of installing a series of five pumps placed down-gradient from the face of the Lake Perris Dam that will pump water that has seeped from the lake into the groundwater. The recovered water will be pumped into a collection pipeline that discharges directly into MWD's Colorado River Aqueduct south of Lake Perris. CVWD and DWA were invited to partner in the project with MWD, and the parties have signed an agreement with DWR for funding of environmental analysis, planning, and preliminary design.

3.2.2.7 Sites Reservoir

The Sites Reservoir Project would capture and store stormwater flows from the Sacramento River for release in dry years. Sites Reservoir would be situated on the west side of the Sacramento Valley, approximately 10 miles west of Maxwell, CA. When operated in coordination with other Northern California reservoirs such as Shasta, Oroville, and Folsom, which function as the backbone to both the SWP and the Central Valley Project, Sites Reservoir would increase flexibility and reliability of statewide water supplies in drier periods. In 2019, CVWD and DWA both entered into an agreement with the Sites Project Authority for the next phase of planning for the Sites Reservoir.

3.2.2.8 Potential Risks to SWP Supplies

The quantities of SWP water delivered to state water contractors in a given year depends on the demand for supply; amounts of rainfall, snowpack, runoff, and water in storage; pumping capacity from the Delta; and legal constraints on SWP operations.

Higher sea levels as a result of climate change would threaten the existing levee system in the Delta. Most of the Delta is below sea level and is vulnerable to flooding. Salinity intrusion into the Delta may require increased releases of freshwater from upstream reservoirs to maintain compliance with water quality standards. For the SWP, climate change has the potential to affect the availability of its supply, and its ability to convey water.

The Delta's levee system is also susceptible to sudden failures as a result of seismic events. California is subject to frequent earthquakes with potentially high magnitudes that can cause serious damage to structures and levees. As mentioned earlier, in the event of levee failure, water quality would be at risk from saltwater intrusion into the Delta. Such conditions would significantly affect water supply reliability by limiting pumping.

3.3 Local Surface Water

The Coachella Valley drainage area is approximately 65 percent mountainous and 35 percent typical desert valley with alluvial fan topography buffering the valley floor from the steep mountain slopes. The mean annual precipitation ranges from 44 inches in the San Bernardino Mountains to less than 3 inches at the Salton Sea. Three types of storms produce precipitation in the drainage area: general winter storms,

general summer storms and local thunderstorms. Longer duration, lower intensity rainfall events tend to have higher recharge rates, but runoff and flash flooding can result from all three types of storms. Otherwise, there is little or no flow in most of the streams in the drainage area.

The Mission Creek runs from the San Bernardino and Little San Bernardino mountains in the northwest and flows southeast to the Whitewater River. Mission Creek flows to the valley floor on a consistent basis, but the stream usually disappears underground a short distance from its entrance into the greater Mission Creek Subbasin near Highway 62. While the principal surface water features in the Mission Creek and Desert Hot Springs Subbasin areas directly contribute to groundwater recharge, they are not sufficiently reliable to be used directly for municipal, industrial or agricultural uses.

The Whitewater River runs through the Coachella Valley from the northwest to the south east. Many portions of the main channel and its tributaries have been channelized to convey flood flows. The upper reach of the main channel is referred to as the Whitewater River Stormwater Channel (WRSC), and the lower reach is referred to as the Coachella Valley Stormwater Channel (CVSC).

DWA and CVWD both hold State of California surface water rights. CVWD's rights total up to 328,591 AFY for the Whitewater River and multiple tributaries, which exceeds the long-term average watershed runoff. These rights allow CVWD to capture available watershed runoff for replenishment of the groundwater basin.

DWA's rights total up to 13,308 AFY for Chino, Snow, Falls Creek, and Whitewater River. DWA acquired the water rights of the Whitewater River Mutual Water Company for 10 cubic feet per second (cfs) from Whitewater Canyon in 2008. Local surface water is diverted by DWA for urban and agricultural demands. Because surface water supplies are affected by variations in annual precipitation, however, the annual supply is highly variable. Since 1960, the historical surface water diversions have ranged from approximately 1,400 to 8,500 AFY. For the period 2010-2019, DWA's average annual surface water diversions from all sources totaled 1,832 AFY. The remaining undiverted surface water is recharged into the Indio Subbasin through the natural streambed near Snow Creek Road/Highway 111, Chino Canyon, and the Whitewater River Channel.

3.4 Recycled Water

Recycled water is a significant potential local resource that can be used to help reduce overdraft. Wastewater that has been highly treated and disinfected can be reused for landscape irrigation and other purposes. An overview of water recycling programs is included here, and each agency's chapter has more detailed information about their facilities.

CVWD started recycling wastewater for irrigation of golf courses and landscaping in the Coachella Valley in the late 1960s. CVWD operates five WRPs, two of which (WRP-7 and WRP-10) generate recycled water for irrigation of golf courses and large landscaped areas. WRP-7 is located in north Indio and is a 5.0 MGD secondary treatment facility with current tertiary treatment capacity of 2.5 MGD (2,800 AFY). The tertiary treated wastewater is used for irrigation of golf courses at Sun City in north Palm Desert and Shadow Hills in north Indio. WRP-10 is located in the City of Palm Desert and is an 18.0 MGD secondary treatment facility with a current tertiary treatment capacity of 15 MGD (16,800 AFY). WRP-10 delivers recycled water for irrigation of golf courses, municipal, and HOA landscaping. CVWD is also planning to add tertiary treatment at WRP-4, in the unincorporated community of Thermal. CVWD's remaining two plants, WRP-1 and WRP-2, are smaller facilities with no current plans for water recycling.

CWA serves the City of Coachella, which through its Coachella Sanitary District (CSD) owns and operates a 4.5 MGD (5,040 AFY) secondary treatment wastewater facility utilizing activated sludge and oxidation ditch processes. The plant currently discharges treated effluent to the CVSC. CSD participated in a regional feasibility study to determine the best available and most cost-effective opportunity to implement recycled water.

DWA began operating a Water Reclamation Plant (WRP) in the 1980s that treats effluent from the City of Palm Springs Wastewater Treatment Plant. The WRP has a tertiary treatment capacity of 10 MGD (11,200 AFY). DWA delivers recycled water to golf courses, parks, and other landscapes in the Palm Springs area, and also utilizes recycled water for irrigation at its operations center and WRP. Beginning in 2014, DWA

equipped two shallow groundwater wells to augment the non-potable supply for peak demands (typically summer). These shallow wells pump non-potable groundwater adjacent to the DWA Recycling Plant into the recycled water distribution system.

IWA serves the City of Indio, where wastewater treatment is provided by Valley Sanitary District (VSD). VSD owns and operates an 11 MGD (12,320 AFY) capacity wastewater treatment facility that serves most of the City of Indio. The City of Indio and the VSD have formed a Joint Powers Authority to plan, program, finance, design and operate a Reclaimed Water Facility. This facility would provide advanced treatment for effluent from VSD's plant and create a new sustainable source of supply. Initial planning for the first phase is currently underway.

MSWD operates two wastewater treatment facilities and will begin construction of the Regional Water Reclamation Facility this year. While all plants currently or will provide secondary treatment, MSWD has completed a recycled water feasibility study and plans to implement advanced treatment and recycled water recharge in the Mission Creek Subbasin in the next 5 to 10 years.

MDMWC does not provide wastewater treatment services, and coordinates with regional agencies on potential uses of recycled water within its service area.

Two small facilities in the southern portion of the study area are operated by the Salton Community Services District (SCSD). The Salton City WWTP and the Desert Shore WWTP dispose of effluent through evaporation and percolation, and there are no current plans for water recycling.

Wastewater treatment and recycled water facilities are shown in Figure 3-3.

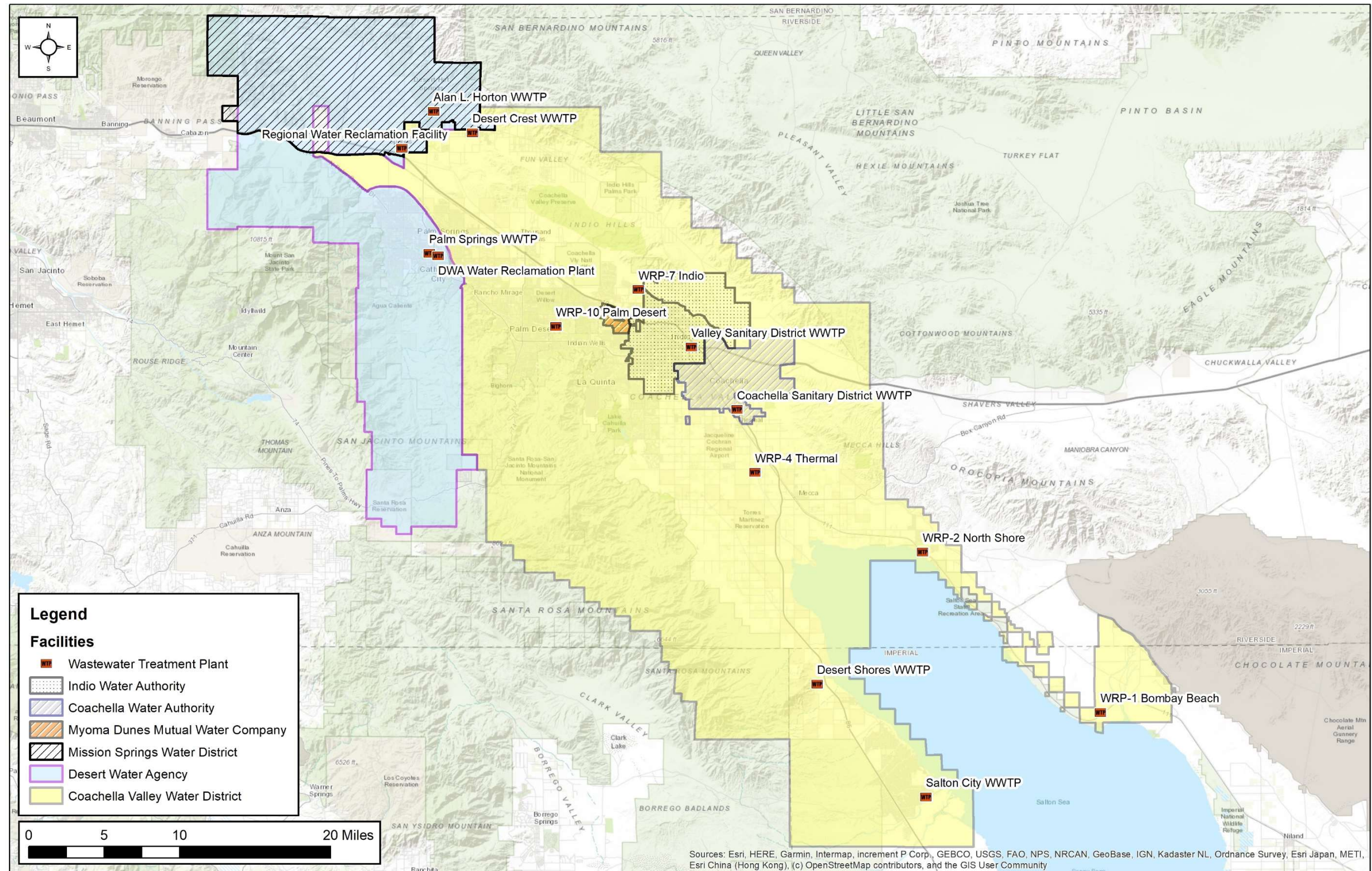


Figure 3-3. Wastewater and Recycled Water Facilities

3.5 Consistency with the Delta Plan for Participants in Covered Actions

The region’s approach to demonstrating reduced reliance on the Delta has been developed using input from DWR and the State Water Contractors. This RUWMP is focused on the delivery of potable water to meet demands in each agency’s public water systems. Agricultural users and golf courses use large amounts of water in the Coachella Valley, but this water is not always delivered through the municipal systems. Instead, these users may pump groundwater which is recharged with SWP Exchange water or receive Canal water delivered by CVWD. For the purposes of evaluating regional reliance on the Delta, the agencies have prepared an estimate of these non-municipal demands in the region. These estimates are shown in Table 3-4.

Table 3-4. Non-Municipal Water Use

	2020	2025	2030	2035	2040	2045
Agricultural Irrigation (AFY)	290,312	287,092	283,873	280,654	277,442	274,231
Golf Irrigation (AFY)	105,300	106,075	106,850	107,625	107,625	107,625
Other Non-Urban Non-Potable Use (AFY)	18,893	21,593	21,593	21,593	21,593	21,593
Total Non-Urban Non-Potable Use (AFY)	414,505	414,760	412,316	409,872	406,660	403,449
Notes:						
These estimates are from the draft Indio Subbasin Alternative Plan Update and draft Mission Creek Subbasin Alternative Plan Update.						

The analysis of reduced Delta reliance is provided in Appendix C.

3.6 Climate Change

Climate plays a central role in the operation, planning, and management of water resource systems for water supply, flood management, and environmental stewardship. Expectations of the timing and form of precipitation; the timing, magnitude, and distribution of runoff; and the availability of water for beneficial use are based on understanding of the climate system and experience with historical meteorological and hydrological events.

The potential impacts of climate change on water resources may be felt through changes in temperature, precipitation, and runoff. Particularly, the Colorado River Hydrologic Region is subject to the following climate vulnerabilities:

- Magnitude and frequency of extreme precipitation events may increase, resulting in greater flood risk and debris flows.
- More frequent and longer droughts would reduce imported water supply reliability and decrease local water quality (through increasing concentrations of constituents) and habitat.

The implications of climate change regionally and nationally may adversely impact the Coachella Valley’s water resources. Further discussions of potential climate change impacts are included in the 2018 Coachella Valley IRWM/SWR Plan.

Chapter 4 Coachella Valley Water District

4.1 Introduction

This chapter presents information specific to CVWD's reporting requirements under the Urban Water Management Planning Act (UWMP Act). As an urban water supplier, CVWD is required to prepare an Urban Water Management Plan (UWMP) every five years in response to the requirements of the UWMP Act, California Water Code Sections (CWC) 10610 through 10656. This Regional UWMP (RUWMP) serves to meet the UWMP Act requirements for the six participating agencies, and this chapter contains information specific to CVWD.

Background about the preparation of the RUWMP and the changes in the CWC requirements is presented in Chapter 1 of the RUWMP. The relation of the RUWMP to other planning efforts is described in Chapter 3 of the RUWMP.

4.1.1 Chapter Organization

This chapter is organized to follow the structured recommended in the Guidebook.

Section 4.1 - Introduction and Overview. Provides a discussion on the importance and extent of CVWD's water management planning efforts.

Section 4.2 - Plan Preparation. Provides information on CVWD's process for developing the UWMP, including efforts in coordination and outreach.

Section 4.3 - System Description. Includes maps of the service area, a description of the service area and climate, public water systems, and CVWD's organizational structure and history.

Section 4.4 - System Water Use. Describes and quantifies the current and projected urban water uses within CVWD's service area.

Section 4.5 - Baselines and Targets. Describes CVWD's methods for calculating baseline and target urban water consumption. Demonstrates achievement of the 2020 water use target.

Section 4.6 - System Supplies. Describes and quantifies current and projected sources of urban water available to CVWD. Includes discussion of potential recycled water uses and supply availability.

Section 4.7 - Water Supply Reliability. Describes the reliability of CVWD's water supply and projects the reliability for the next 25 years. Includes an analysis for normal years, single dry years, and multiple dry years.

Section 4.8 - Water Shortage Contingency Planning. Provides CVWD's staged plan for dealing with water shortages, including a catastrophic supply interruption.

Section 4.9 - Demand Management Measures. Describes CVWD's efforts to promote conservation and to reduce demand through demand management measures.

Section 4.10 - Plan Adoption, Submittal, and Implementation. Describes the steps taken by CVWD to adopt and submit the UWMP and to make it publicly available. Includes a discussion of CVWD's plan to implement the UWMP.

4.1.2 RUWMP in Relation to Other Efforts

The related planning efforts by agencies in the Coachella Valley are described in Chapter 3 of the RUWMP.

4.1.3 RUWMP and Grant or Loan Eligibility

The CWC requires urban water suppliers to have a current UWMP, deemed sufficient at addressing the CWC requirements by DWR, in order for the urban water suppliers to be eligible for any water management grant or loan administered by DWR.

In addition, the UWMP Act requires a retail water agency to meet its 2020 Compliance Urban Water Use Target and report compliance in the 2020 UWMP. Section 4.5 of this chapter describes CVWD’s calculation of 2020 water use in gallons per capita per day (GPCD) and demonstrates compliance with CVWD’s 2020 target. CVWD has met the water conservation requirements to be eligible for State water grants or loans.

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

The participating agencies’ approach to demonstrating reduced reliance on the Delta is discussed in Chapter 3 of the RUWMP. The analysis of reduced Delta reliance is provided in Appendix C.

4.2 Plan Preparation

This section provides information on CVWD’s process for developing this RUWMP, including efforts in coordination and outreach.

4.2.1 Plan Preparation

In accordance with the CWC, urban water suppliers must develop a UWMP every five years. An “urban water supplier” is a supplier providing water for municipal purposes to more than 3,000 service connections or supplying 3,000 or more acre-feet (AF) of water per year. CVWD has over 100,000 municipal service connections and, therefore, surpasses the 3,000-connection threshold and has prepared a 2020 UWMP.

4.2.2 Basis for Preparing a Plan

CVWD serves municipal customers through three public water systems, summarized in Table 4-1. This chapter and the RUWMP meet reporting requirements for all three systems. In March 2021, the ID No. 11 system was consolidated into the Cove Community system, and future reporting will treat them as a consolidated system.

Table 4-1. DWR 2-1R Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 (AF)
CA3310001 and CA1310011	CVWD - Cove Community and CVWD – ID No. 11	108,507	96,661
CA3310048	CVWD - ID No. 8	1,586	3,182
Total		110,093	99,843

4.2.3 Regional Planning

The regional planning efforts of water supply agencies in the Coachella Valley are described in Chapters 2 and 3 of the RUWMP.

The UWMP Act allows water agencies to prepare their plans either individually or by participation in an area wide, regional, watershed, or basin-wide urban water management plan. CVWD is participating in the Coachella Valley RUWMP.

4.2.4 Individual or Regional Planning and Compliance

The Water Conservation Act of 2009 allows agencies to report progress toward achieving water conservation targets on an individual or regional basis. The agencies have not created a Regional Alliance for the purposes of measuring and reporting water conservation targets.

4.2.5 Fiscal or Calendar Year and Units of Measure

This UWMP reports water use on a calendar year basis, and all volumes are expressed in units of acre-feet (AF), unless otherwise indicated. CVWD is a retail agency and does not currently sell wholesale water.

4.2.6 Coordination and Outreach

According to CWC §10631, an urban water supplier that relies on water from a wholesaler must provide the wholesaler with water use projections for that supplier for the next 20 years. However, CVWD does not receive water from a wholesale supplier and meets all its water demands through its own supplies.

CVWD does not currently provide wholesale water to other water agencies.

CWC §10620 requires urban water suppliers to coordinate their plans with other appropriate agencies in the area. Outreach and coordination during RUWMP preparation are described in Chapter 2 of the RUWMP.

CWC §10621 requires the urban water supplier to notify the cities and counties that are within their service area 60 days before the public hearing of the UWMP. The notices are described in Chapter 2 of the RUWMP.

4.3 System Description

This section describes the CVWD urban water service area and population.

4.3.1 General Description

CVWD was formed in 1918 under the County Water District Act provisions of the CWC. In 1937, CVWD absorbed the responsibilities of the Coachella Valley Stormwater District that had been formed in 1915. CVWD now encompasses approximately 640,000 acres, mostly within Riverside County, but also extending into northern Imperial and northeastern San Diego counties.

CVWD is governed by a board of five directors, elected by district voters to four-year terms. Each director lives in and represents one of five directorial divisions in the district and is elected by voters who also reside in that division.

CVWD is a Colorado River water importer and a California State Water Project contractor. The water-related services provided by CVWD include:

- Domestic water delivery
- Irrigation water delivery and agricultural drainage
- Wastewater reclamation and recycling
- Stormwater protection
- Groundwater replenishment

CVWD is the largest urban water supplier in the Coachella Valley with over 100,000 municipal connections.

4.3.1.1 Domestic Water Delivery

CVWD's domestic water system has 64 pressure zones and consists of approximately 97 groundwater production wells, 2,000 miles of pipe, and 133 million gallons of storage in 65 enclosed reservoirs.

4.3.1.2 Irrigation Water Delivery and Agricultural Drainage

CVWD's irrigation system provides Colorado River water to over 1,200 customers covering over 75,000 acres via the 123-mile, concrete-lined, Coachella Branch of the All American Canal. The irrigation distribution system consists of 485 miles of buried pipe, 16 pumping plants, and 1,300 AF of storage.

Due to a high perched groundwater table and concentration of salts in irrigated soils within CVWD's service area, an agricultural drainage system is necessary. CVWD operates and maintains an agricultural drainage system consisting of 166 miles of buried pipe ranging in size from 18 inches to 72 inches in diameter and 21 miles of open channels to serve as a drainage network for irrigated lands. The system receives water from on-farm drainage lines. In most areas, the drainage system flows to the Coachella Valley /Whitewater River Stormwater Channel. However, in areas near the Salton Sea, a number of open channels convey flows directly to the sea.

4.3.1.3 Wastewater Reclamation and Recycling

CVWD's wastewater reclamation system collects and treats approximately 17 million gallons per day (MGD) from approximately 95,000 user accounts. The system consists of approximately 1,100 miles of collection piping and five wastewater reclamation plants (WRPs). Some areas within the CVWD service area remain on septic systems.

Two of the plants, WRP 7 and 10, recycle an average of about 8 MGD for golf course and municipal irrigation. The recycled water distribution systems serve a total of 20 customer accounts through 31 miles of pressurized distribution pipelines. The main focus of the recycled water system is to provide non-potable water to golf customers, but also serve non-potable water to municipal buildings and HOAs for landscape irrigation.

4.3.1.4 Stormwater Protection

CVWD provides regional flood protection for its stormwater unit within the Coachella Valley. CVWD's stormwater unit extends from the Whitewater River Groundwater Replenishment Facility (WWR-GRF) to Salton City, encompassing approximately 380,000 acres. CVWD's regional flood control system consists of a series of debris basins, levees, and stormwater channels that divert floodwaters from the canyons and alluvial fans surrounding the Coachella Valley to the 50-mile Whitewater River/Coachella Valley Stormwater Channel (CVSC) that flows to the Salton Sea.

4.3.1.5 Groundwater Recharge

CVWD operates and maintains groundwater recharge facilities at three locations in the Coachella Valley: the WWR-GRF, the Thomas E. Levy GRF (TEL-GRF), and the Palm Desert GRF (PD-GRF). Also, CVWD and Desert Water Agency (DWA) share costs of the operation and maintenance of the Mission Creek GRF (MC-GRF) to replenish the aquifer underneath the Mission Creek Subbasin.

CVWD has operated and maintained recharge facilities at the WWR-GRF (formerly referred to as the Whitewater Spreading Area) since 1919, first with local surface runoff and, since 1973, with imported State Water Project Exchange water. The WWR-GRF has a series of 19 ponds covering 700 acres adjacent to the Whitewater River. Local runoff and State Water Project Exchange water deliveries are transported to the ponds via the Whitewater River channel, and then diverted into the recharge ponds at two locations by diversion structures. Since its introduction in 1973, over 3.8 million acre-feet of water have been recharged at this facility.

CVWD began recharging Colorado River water from the Coachella Canal at the TEL-GRF in 2009. The facility consists of 39 ponds covering 163 acres with a design capacity of 40,000 AFY. The facility is located on the western slope of the East Coachella Valley.

The PD-GRF (Phase I) began operation in Palm Desert in February 2019. It is supplied by Colorado River water delivered through the Mid-Valley Pipeline. The facility consists of five ponds covering 20 acres with a maximum design capacity of 10,000 AFY. Phase II of the project will consist of three ponds covering 25 acres in the Whitewater River Stormwater Channel with a maximum design capacity of 15,000 AFY.

4.3.2 Jurisdictional Boundary

The CVWD jurisdictional boundary and service area are shown in Figure 4-1.

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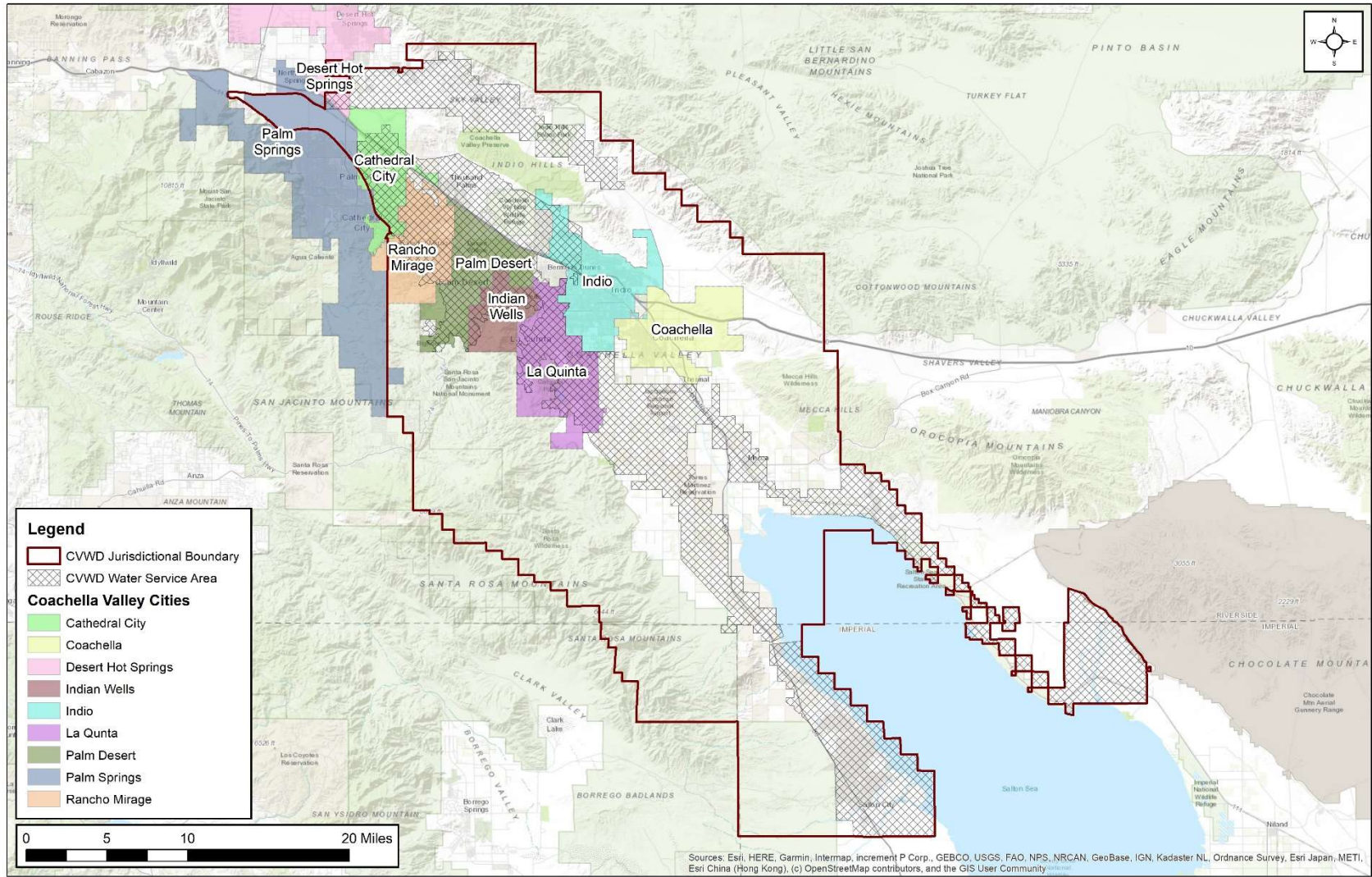


Figure 4-1. CVWD Jurisdictional Boundary

4.3.3 Service Area Climate

The CVWD service area is located in the Colorado River Hydrologic Region as defined by DWR. Most of the Colorado River region has a subtropical desert climate with hot summers and short, mild winters. The mountain ranges on the northern and western borders, in particular the San Bernardino and San Jacinto Mountains, create a rain shadow effect for most of the region. Annual average rainfall amounts on the Valley floor range from a little over 6 inches to less than 3 inches. Most of the precipitation for the region occurs in the winter and spring. However, monsoonal thunderstorms, spawned by the movement of subtropical air from the south, can occur in the summer and generate significant rainfall in some years. Higher annual rainfall amounts and milder summer temperatures occur in the mountains to the north and west.

Data from climate stations in Palm Springs and Thermal (Desert Resorts Regional Airport) can be used as an indicator of climate in the CVWD service area. Monthly average temperature reaches as high as 108 degrees Fahrenheit (F) and monthly average low temperatures are 38 degrees F. Precipitation typically occurs during the winter months with an annual mean rainfall of approximately 5.5 inches in Palm Springs and 3.0 inches in Thermal. Average minimum and maximum temperature, total precipitation, and evapotranspiration at the Palm Springs and Thermal climate stations are summarized in Table 4-2 and Table 4-3, respectively.

Table 4-2. Monthly Average Climate Data (Palm Springs)

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	71	73	80	86	94	104	108	107	102	90	78	69	89
Average Minimum Temperature (F)	47	49	54	59	65	73	80	79	74	64	53	46	62
Average Total Precipitation (in)	0.95	0.92	0.36	0.10	0.02	0.00	0.25	0.14	0.20	0.20	0.26	0.70	3.80
Evapotranspiration, ETo (in)	2.5	3.4	5.6	7.1	8.3	8.7	8.1	7.5	6.2	4.7	2.9	2.2	67.2

Notes:

Temperature and Precipitation from National Weather Service Forecast office, Station Palm Springs Airport. Data from 1998 through 2020. Accessed through <https://w2.weather.gov/climate/xmacis.php?wfo=sgx>

ETo Data from California Irrigation Management Information System (CIMIS) Station 208, La Quinta II. Data from February 2007 through December 2020.

Table 4-3. Monthly Average Climate Data (Thermal)

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	71	74	81	87	95	103	107	106	101	91	79	69	89
Average Minimum Temperature (F)	39	43	49	55	63	69	76	75	68	57	45	38	56
Average Total Precipitation (in)	0.64	0.61	0.34	0.08	0.01	0.01	0.13	0.12	0.32	0.19	0.17	0.34	2.96
Evapo-transpiration, ETo (in)	2.7	3.9	6.4	8.0	9.3	9.3	9.6	9.1	7.1	5.3	3.2	2.4	70.2

Notes:

Temperature and Precipitation from National Weather Service Forecast office, Station Desert Resorts Regional Airport. Data from 1990 through 2020. Accessed through <https://w2.weather.gov/climate/xmacis.php?wfo=sqx>

CIMIS Monthly Average ETo Report for Thermal South – Station 218 (data for 2010 through 2020)

Climate change could impact demands and supplies within CVWD’s service area. A discussion of these potential changes is included in Chapter 3 of the RUWMP.

4.3.4 Service Area Population and Demographics

This section describes the population and demographics within CVWD’s service area.

CVWD’s service area includes all or a portion of the cities of Cathedral City, Indian Wells, Indio, La Quinta, Palm Desert, and Rancho Mirage, and unincorporated areas of Riverside County.

The Regional Transportation Plan adopted by the Southern California Association of Governments (SCAG) in 2020 is referred to as Connect SoCal.² As part of that effort, SCAG performed a detailed evaluation of current and projected future demographics throughout southern California, include the study area for the RUWMP. The Connect SoCal analysis included forecasts for employment, population, and households within cities and unincorporated areas. This demographic information was used to prepare projections of future water demands.

The population growth forecasts were developed using regional growth projections published in 2020 by SCAG. The projections provided in SCAG’s Connect SoCal plan included estimates of population, households, and employment through 2045. The anticipated growth was identified for traffic analysis zones (TAZ) that could be overlaid with the CVWD service area boundary.

An important consideration affecting per capita water use in the Coachella Valley is the region’s large seasonal population, which is not counted by the federal census or other demographic data. Due to its mild winter climate and recreational opportunities, the Valley is a popular destination for “snowbirds,” people

² More information about Connect SoCal is available at <https://scag.ca.gov/read-plan-adopted-final-plan>.

whose primary residence is outside the Valley but may live in the Valley for three to six months during the winter period. In addition, there are people who maintain second homes in the Valley and use them for shorter periods of time throughout the year to participate in the Valley’s various sports, entertainment, and recreational activities. The visitor population also makes use of the Valley’s hotel/motel/time-share resorts as well as mobile home parks. These properties use water year-round for irrigation even when not occupied during the summer months. Per capita water use calculations only consider the permanent population but include all water uses (permanent and seasonal) which leads to higher gallon per capita per day (GPCD) estimates.

CVWD developed an approach for estimating service area population to account for the effect of seasonal residents on GPCD estimates. This method was approved by DWR for use in the RUWMP. Estimates of the permanent population were made using DWR’s Population Tool. The water service area shown in Figure 4-1 was loaded into the Population Tool and intersected with census data to estimate permanent population. CVWD then estimated the seasonal population and the population in RV parks using data from the Census and other sources. More information about the seasonal population methodology is provided in Section 4.5.4.

The recent and projected future service area population is shown in Table 4-4.

Table 4-4. DWR 3-1R Current and Projected Population

Population Served	2020	2025	2030	2035	2040	2045
Permanent	221,791	241,680	261,570	281,460	301,349	321,239
Seasonal	41,261	44,497	47,732	50,914	53,564	56,161
RV Parks	5,900	5,900	5,900	5,900	5,900	5,900
Total	268,952	292,077	315,202	338,274	360,813	383,300

4.3.5 Land Uses within Service Area

The cities within the CVWD service area are identified in Section 4.3.4 and are shown in Figure 4-1. These cities participated in the development of SCAG’s Connect SoCal plan, which included an intensive outreach and coordination effort with land use jurisdictions. The use of SCAG’s growth forecast for water demand estimations means that the projections reflect patterns and expectations for land use within the service area.

Existing land use in the CVWD service area is a mixture of urban uses (residential, commercial, industrial, and civic), agriculture, golf courses, and open space. As noted in the 2018 IRWM/SWR Plan, an important trend in the Valley is the conversion of farmland to urban uses although this trend has been slower than initially projected.

4.4 Water Use Characterization

Water resources planning requires reasonably accurate estimates of future water needs. This section presents CVWD’s baseline and projected urban water system demands. To provide an adequate long-range view of future water needs, this report uses a 25-year planning period from 2020 to 2045. This longer planning period allows the RUWMP to serve as a source document for future water supply assessments and written supply verifications until the next 5-year UWMP update.

4.4.1 Past, Current, and Projected Water Use by Sector

Water use is broken down by sector as discussed in the following subsections. Currently, all potable urban water use is supplied by groundwater.

The urban demand sectors listed in CWC §10631 that apply to CVWD are summarized in Table 4-5.

Table 4-5. Water Use Sectors

Sector	Discussion for CVWD
Single Family Residence	<p>A single-family dwelling unit is defined as a lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling. A relatively high percentage of these meters serve properties that are used seasonally.</p> <p>Future single family residences are expected to use less water than existing properties due to the mandated use of high efficiency plumbing fixtures under the CalGreen building standards and reduced landscape water use mandated by CVWD's Landscape Ordinance.</p>
Multi-Family	<p>Multiple dwelling units contained within one building or several buildings within one complex. Within the CVWD service area, multi-family demand includes customers with more than one dwelling unit such as duplexes, triplexes, apartments, other multiple dwelling properties, and mobile home and recreational vehicle parks served by a master meter. Many of these connections serve properties that are used seasonally.</p> <p>Future multi-family residences are expected to use less water than existing properties due to the mandated use of high efficiency plumbing fixtures under the CalGreen building standards and reduced landscape water use mandated by CVWD's Landscape Ordinance.</p>
Commercial	<p>A water user that provides or distributes a product or service. For the CVWD service area, commercial use includes businesses, commercial properties, restaurants, hotels and motels. Most existing and all new commercial customers are required to have separate landscape irrigation services.</p> <p>Future commercial water use is expected to be lower in response to CalGreen requirements.</p>
Industrial	<p>An industrial water user is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System (NAICS) code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development. CVWD does not currently classify any of its users as industrial.</p>
Institutional and Governmental	<p>Institutional and governmental water users are dedicated to public service. This user class typically includes schools, higher education institutions, courts, churches, hospitals, government facilities, and non-profit research institutions. CVWD classifies these users as "Public Agency" uses, among others. Future public agency water use is expected to be lower in response to CalGreen requirements.</p>

Sector	Discussion for CVWD
Landscape	Landscape water connections supply water solely for landscape irrigation. Such connections may be associated with large single family properties, and multi-family, commercial, or institutional/governmental sites, but are considered a separate water use sector because the connection is solely for landscape irrigation. Many of these connections serve the common area landscaping of homeowner’s associations and parks. CVWD’s landscape ordinance requires the installation of dedicated landscape irrigation meters for all projects except single family homes with a landscape area less than 5,000 square feet. Future landscape usage is expected to decrease due to implementation of CVWD’s Landscape Ordinance that requires improved irrigation efficiency and reduced allowable water use.
Sales to Other Agencies	Not applicable. CVWD does not currently sell water to another water agency.
Conjunctive Use	Not applicable
Groundwater Recharge	As described in Chapter 3 of the RUWMP, CVWD and DWA use imported water to replenish groundwater supplies in the basin. This water is non-potable, and this use is not included CVWD’s municipal demands on the urban water system.
Saline Water Intrusion Barriers	Not applicable
Agricultural	CVWD does not deliver potable water through its urban water system for agricultural use. Agricultural users rely on Canal water delivered through the irrigation system and pumped groundwater, and this usage is considered in the Alternative Plans approved for Sustainable Groundwater Management Act compliance.
Distribution System Losses	Non-revenue water is considered the difference between production and measured consumption. Non-revenue water includes distribution system losses as well as authorized non-billed water uses, such as firefighting and flushing. Distribution system losses are reported in Table 4-6.

In addition to the uses specified in the water code, CVWD provides water for temporary construction activities. Construction use represents less than 1 percent of total water use and varies based on construction activity.

4.4.1.1 Demands Not Served by the Urban Water System

CVWD operates several separate non-potable water systems that do not serve urban water customers. The agricultural irrigation, golf course irrigation, and groundwater recharge uses are not served from CVWD’s urban water system, but they are described below to provide a complete picture of CVWD’s water supply operations. Consequently, with the exception of recycled water, these non-potable uses are not included in DWR’s standardized tables.

The Coachella Canal water distribution system was constructed to deliver Colorado River water for agricultural uses in the East Valley. Currently, Canal water supplies agricultural, golf course irrigation, fish farming operations, duck clubs, and recreational lake uses. Agricultural use represents the largest use of Canal water in the Coachella Valley. Agricultural uses in areas that do not have access to Canal water are served by private groundwater wells; no agricultural irrigation is served by CVWD’s urban water system. As urban development occurs in the East Valley, a portion of the agricultural land may convert to urban land uses and reduce agricultural demand for Colorado River water.

There are approximately 105 golf courses within the CVWD service area. These golf courses are served by private wells or non-potable water sources. CVWD serves Canal water from the Coachella Canal or the

Mid-Valley Pipeline system or a blend of tertiary-treated recycled water and Canal water to approximately 54 golf courses for irrigation in-lieu of pumping from private groundwater wells. CVWD is actively expanding the non-potable delivery system, with the goal of fully utilizing its available recycled water augmented with Canal water. These in-lieu delivery programs help reduce groundwater overdraft and the need for direct groundwater replenishment. No significant golf course irrigation is served by CVWD’s urban water system.

CVWD recycles water at WRP-7 in north Indio and WRP-10 in Palm Desert, as described in Section 4.6.

CVWD also operates TEL-GRF in the East Valley and jointly operates two other recharge facilities with DWA, the WWR-GRF and the MC-GRF. CVWD recently began operations at another recharge facility, the PD-GRF, in early 2019. These recharge facilities are supplied with imported water as described in Chapter 3 of the RUWMP.

4.4.1.2 Distribution System Losses

CVWD prepares annual water audits using the American Water Works Association (AWWA) Free Water Audit Software. The results for the past five years are summarized in Table 4-6. The numbers in Table 4-6 are the reported total losses, including apparent losses and real losses. The audit reports are included in Appendix G.

Table 4-6. DWR 4-4R 12 Month Water Loss Audit Reporting

Report Period Start Date		Volume of Water Loss (AF)
MM	YYYY	Total of CVWD Public Water Systems
07	2015	9,063
07	2016	10,339
07	2017	9,961
07	2018	10,947
07	2019	10,584

4.4.1.3 Summary of Current and Projected Uses

The uses in CVWD’s urban system for the past five years are summarized in Table 4-7.

Table 4-7. DWR 4-1R Actual Demands for Water (AFY)

Use Type	Additional Description	Level of Treatment When Delivered	2016	2017	2018	2019	2020
Single Family		Drinking Water	48,368	51,903	52,668	51,217	54,816
Multi-Family		Drinking Water	3,743	3,863	3,893	3,853	3,996
Commercial		Drinking Water	4,978	5,072	5,039	4,883	4,242
Institutional/ Governmental		Drinking Water	896	1,489	1,212	1,443	1,941
Landscape		Drinking Water	21,506	22,701	23,559	22,039	22,829
Other	Construction	Drinking Water	967	1,168	1,073	1,337	902
Other	Non-Revenue	Drinking Water	11,630	10,518	11,518	10,998	11,116
Total			92,088	96,715	98,962	95,772	99,843
Note: Non-revenue water is the difference between production and customer billing. It includes losses and authorized, non-billed consumption. Totals may be affected by rounding error.							

CVWD is participating in the Indio Subbasin Alternative Plan Update and the Mission Creek Alternative Plan Update being prepared to meet requirements of the Sustainable Groundwater Management Act (SGMA). The RUWMP agencies coordinated efforts with demand projections prepared for the Alternative Plan Updates. The demand projection approach included the following steps:

- The projections were based on SCAG's regional growth forecast prepared as part of their regional transportation plan, Connect SoCal. SCAG gathered input from cities and counties throughout Southern California about expected growth and development for the next 25 years and incorporated the land use designations in each jurisdiction's General Plan. The SCAG analysis includes estimates of population, households, and employment in each TAZ in their study area.³
- Additional analysis of vacancy rates was performed to estimate baseline and projected housing units for the study area, including housing units used by seasonal residents and other part-time uses.
- Future estimates of employment were used to drive future growth in Commercial, Industrial, and Institutional (CII) demands.
- Five years of customer billing data were used to develop unit demand factors. These factors have units of gallons per housing unit for residential and landscape uses and gallons per employee for CII uses.
- Water losses were estimated using water loss audits.
- Demands were adjusted for two types of conservation savings:
 - Indoor passive conservation savings from the natural replacement of indoor devices

³ An overview of the demographic and growth forecast is available at https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf?1606001579.

- Outdoor conservation savings from the implementation of CVWD's Landscape Ordinance.

The projected demands are shown in Table 4-8. The demand projections in Table 4-8 are for future municipal demands within CVWD's jurisdictional boundary. Some of these areas are currently served by private domestic wells and are not yet connected to the CVWD system. CVWD plans to consolidate and provide service to these areas, but the timing will depend on the availability of grant funding. For planning purposes, all municipal demands within the jurisdictional boundary are included beginning in 2025. CVWD's actual deliveries will likely be less than these estimates until CVWD begins providing service to these areas.

Table 4-8. DWR 4-2R Projected Retail Demands for Water (AFY)

Use Type	Additional Description	Projected Water Use				
		2025	2030	2035	2040	2045
Single Family		60,142	63,824	67,331	69,816	71,695
Multi-Family		6,873	7,245	7,742	8,267	9,045
CII		7,060	7,244	7,438	7,709	7,985
Landscape		34,193	36,205	38,226	39,865	41,516
Other		1,457	1,563	1,670	1,755	1,840
Losses		13,736	14,501	15,222	15,670	16,085
Total		123,461	130,582	137,629	143,081	148,166
Note: Projections based on demand projections in draft Alternative Plan Updates for Indio Subbasin and Mission Creek Subbasin						

Demand projections prepared for this plan considered the incorporation of codes and standards. The draft Indio Subbasin Alternative Plan Update included modeling of anticipated future water savings due to fixture replacements. The analysis included indoor savings related to toilets, showerheads, dishwashers, clothes washers, and urinals (categorized as indoor water use) as well as outdoor water use. Indoor conservation is mainly a result of government mandated water efficiency requirements for fixtures, defined as "passive savings." The model considers these mandates and the average useful life and replacement rates for each type of fixture based on standard industry estimates and plumbing fixture saturation studies. It assumes that all new construction complies with the plumbing codes in effect at that time and that when a device is replaced, the new device is also in compliance with the current plumbing codes. Estimated frequency of use for each type of fixture as determined by the Water Research Foundation and American Water Works Association Research Foundation were multiplied by the number of housing units to produce the total indoor passive conservation savings.

Anticipated outdoor water use savings were based on the implementation of the California Model Water Efficiency Landscape Ordinance (MWELO) which is the standard for outdoor water conservation for the state. The resulting water savings from the MWELO are estimated using an Evapotranspiration Adjustment Factor (ETAF) which adjusts the reference ET for plant requirements and irrigation efficiency. No savings were assumed from special landscape areas, such as recreational areas, as these are allotted extra water use as well as existing landscapes as these savings are not considered passive since there are incentives under conservation programs.

The anticipated savings due to these measures are summarized in Table 4-9. These savings have been incorporated into the water demand projections presented in Table 4-8.

Table 4-9. Anticipated Water Savings Due to Conservation (AFY)

	2020	2025	2030	2035	2040	2045
Indoor Passive Savings	547	1,414	1,965	2,393	2,718	2,986
Outdoor Passive Savings	1,981	3,439	4,873	6,275	7,399	8,439
Total Passive Savings	2,528	4,853	6,838	8,668	10,117	11,425
Note: Estimated savings are from draft Indio Subbasin Alternative Plan Update. Preliminary demand projections for draft Mission Creek Subbasin Alternative Plan Update identified an additional 160 AFY of passive conservation savings by 2045.						

Gross water use is summarized in Table 4-10. In addition, projected recycled water demands are included in Table 4-10 as required by the Guidebook and standardized tables. Note that recycled water is reported in the tables with urban water demands to be consistent with the DWR standard tables, but recycled water is not a part of the urban water system.

Table 4-10. DWR 4-3R Total Gross Water Use (AFY)

	2020	2025	2030	2035	2040	2045
Potable and Raw Water From DWR Table 4-1R and 4-2R	99,843	123,461	130,582	137,629	143,081	148,166
Recycled Water Urban Demand From DWR Table 6-4R	9,457	13,600	14,400	15,100	15,900	16,800
Total Water Use	109,300	137,061	144,982	152,729	158,981	164,966
Note: Recycled water projections are based on current tertiary capacity at treatment plans and do not include planned recycling at plants that will require additional or expanded tertiary capacity.						

4.4.2 Worksheets and Reporting Tables

CVWD has completed the required UWMP submittal tables and included them in Appendix D of the RUWMP.

4.4.3 Water Use for Lower Income Households

California Water Code 10631.1 requires retail urban water suppliers to provide water use projections for future single-family and multi-family residential housing needed for lower income households. These water use projections assist a supplier in complying with state code which grants priority of the provision of service to housing units that are affordable to lower income households.

The SCAG Regional Housing Needs Assessment (RHNA) Housing Need by Income Category is used to develop projections of lower income housing units in future years. Persons per household values are from the SCAG Local Profiles Report for each city; this is assumed to stay constant through future planning years. Since unincorporated Riverside County needs are for the entire unincorporated county area, they are scaled proportionally to the unincorporated area served by CVWD.

Table 4-11 summarizes the projected water use for additional lower income households assuming the following: (1) the average persons per household remains constant, (2) lower income housing needs are proportional to the projected population growth, and (3) daily water use per capita is equal to the projected per capita water use. Note that lower income household water use projections are included in the total water use projections above.

Table 4-11. Lower Income Housing Units

Jurisdiction		2020	2025	2030	2035	2040
Cathedral City	Lower income housing units (3.1 persons per household)	254	265	276	288	301
	Water use (AF)	319	321	325	333	344
Indian Wells	Lower income housing units (1.9 persons per household)	71	72	73	74	77
	Water use (AF)	55	53	53	53	54
La Quinta	Lower income housing units (2.6 persons per household)	159	165	171	177	185
	Water use (AF)	167	167	169	171	177
Palm Desert	Lower income housing units (2.1 persons per household)	168	173	178	183	188
	Water use (AF)	143	142	142	143	146
Rancho Mirage	Lower income housing units (2.0 persons per household)	40	43	46	49	51
	Water use (AF)	32	34	35	37	38
Unincorporated (within CVWD service area)	Lower income housing units (3.2 persons per household)	3,988	5,816	7,644	9,472	10,684
	Water use (AF)	5,168	7,259	9,291	11,291	12,594
Total	Lower income housing units	4,680	6,534	8,388	10,243	11,468
	Water use (AF)	5,884	7,975	10,015	12,027	13,352

Documentation of the codes and ordinances used in development of the demand projections is included in Table 4-12.

Table 4-12. DWR 4-5R Inclusion in Water Use Projections

Are Future Water Savings Included in Projections?	Yes
Citations	California Building Code, Title 24, Chapter 4, Division 4.3 California Building Code, Title 24, Chapter 5, Division 5.3 California Water Code §10608.16-10608.44 CVWD Ordinance No. 1302.2 (November 24, 2015) CVWD Ordinance No. 1422.3 (May 24, 2016)
Are Lower Income Residential Demands Included in Projections?	Yes

4.4.4 Climate Change Considerations

A regional discussion of potential climate change impacts is included in Chapter 3. Based on larger scale studies, it can be inferred that increased temperatures in the Coachella Valley would increase water demands for crop and landscape irrigation, municipal water use, and evaporative losses from canals and open reservoirs. It has been suggested that increased summer temperatures could draw increased monsoonal flow resulting in more frequent summer thunderstorms. However, no formal studies have been conducted for the Coachella Valley. A combination of state- and local-led demand management measures may reduce demand for irrigation via landscape ordinances while public outreach and education can lead to reductions in water demands through conservation measures.

4.5 SB X7-7 Baseline and Targets

With the adoption of the Water Conservation Act of 2009 (SB X7-7), the State set a goal of reducing urban water use by 20 percent by the year 2020. Each retail urban water supplier was required to determine its water use during a baseline period and establish water use targets for the years 2015 and 2020 in order to help the State achieve the 20 percent reduction.

In the 2020 UWMP, water agencies must demonstrate compliance with their established water use target for the year 2020. Compliance is verified by DWR's review of the SB X7-7 Verification Form submitted with an agency's 2020 UWMP. The SB X7-7 standardized tables are found in Appendix E and summarized below.

4.5.1 Wholesale Suppliers

CVWD is not a wholesale supplier, and therefore this section is not applicable.

4.5.2 SB X7-7 Forms and Tables

CVWD calculated baseline water use and targets in its 2015 UWMP. Since that time, CVWD has obtained more accurate information to estimate its service area population. Therefore, CVWD is recalculating its baseline water use and compliance target in this plan.

4.5.3 Baseline and Target Calculations for 2020 UWMPs

CVWD calculated service area population for its baseline period and calculated an updated compliance target for 2020. The calculations are documented on the standard DWR SB X7-7 tables included in Appendix E and are summarized here.

4.5.4 Service Area Population and Gross Water Use

CVWD calculated its permanent 2020 service area population by uploading a GIS shapefile of its water service area (WSA) to the DWR Population Tool. The tool used 2010 census data and the number of connections in 2010 and 2020 to estimate the population in 2020. CVWD then added the estimated seasonal population of "snow birds" and visitors.

The methodology for estimating population in seasonal housing units consists of the following steps:

1. The number of housing units in each Census block was obtained from Census data. The Census blocks were intersected with the supplier boundaries to calculate the number of housing units.
2. The portion of housing units that are for seasonal use was determined from Census data. The 2010 Census data indicated that 23.4% of the total housing units in Palm Springs were for seasonal use.

3. The number of seasonal housing units was calculated by multiplying the number of housing units by the portion of housing units that are for seasonal use.
4. The annual average occupancy rate for seasonal housing units was estimated from data provided by the Greater Palm Springs Convention and Visitors Bureau (GPSCVB). These data showed a 62% occupancy rate in Palm Springs from July of 2017 to July of 2018.
5. The number of occupied seasonal housing units was calculated by multiplying the number of seasonal housing units by the annual average occupancy rate of 62%.
6. Census data was used to calculate a number of persons per household.
7. The number of people in occupied seasonal housing units was calculated by multiplying the number of occupied seasonal housing units by the number of persons per household.

A separate methodology was used for estimating population in RV and mobile home parks, consisting of the following steps:

1. Data was collected from managers of RV and mobile home parks for the number of spaces that are occupied seasonally. Spaces that are occupied permanently were not included, since those residents should be included in the Census data for permanent population.
2. The annual average occupancy rate for seasonally occupied RV spaces was assumed to be the same as the GPSCVB occupancy rate.
3. The number of occupied seasonal RV spaces was calculated by multiplying the number of seasonal RV spaces by the annual average occupancy rate of 62%.
4. Census data was used to calculate a number of persons per household.
5. The number of people in occupied seasonal RV spaces was calculated by multiplying the number of occupied seasonal RV spaces by the number of persons per household.

This methodology was reviewed and approved in advance by DWR.

CVWD's gross water use was determined from annual production records. Meter adjustments, exported water, distribution system storage, recycled water, and process water were not applicable to CVWD's distribution system.

Allowable adjustments to the 2020 gross water include extraordinary events, weather normalization, and economic adjustments. No adjustments were made to CVWD's 2020 water use.

4.5.5 2020 Compliance Daily Per-Capita Water Use (GPCD)

CVWD's average use during the baseline period and confirmed 2020 target are shown in Table 4-13.

Table 4-13. DWR 5-1R Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline Use (GPCD)	Confirmed 2020 Target (GPCD)
10-15 Year	1999	2008	515	412
5 Year	2003	2007	505	
All values are in Gallons per Capita per Day (GPCD)				

CVWD's compliance with the 2020 target is shown in Table 4-14.

Table 4-14. DWR 5-2R 2020 Compliance

Actual 2020 GPCD			2020 Confirmed Target GPCD	Supplier Achieved Targeted Reduction in 2020
	2020 Total Adjustments	Adjusted 2020 GPCD		
331	0	331	412	YES
All values are in Gallons per Capita per Day (GPCD)				

4.5.6 Regional Alliance

An urban water supplier may satisfy the requirements of CWC §10620 by participation in areawide, regional, watershed, or basin wide urban water management planning (Regional Alliance) where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use. CVWD did not choose to comply with the SB X7-7 requirements through a Regional Alliance.

4.6 Water Supply Characterization

This section describes the existing and future water supplies available to CVWD to meet its domestic and non-potable water demands.

4.6.1 Water Supply Analysis Overview

CVWD’s urban water service area is defined as the area served by its potable water distribution system. Currently, all urban water uses are supplied from local groundwater. In addition to groundwater, CVWD has imported water supplies from the State Water Project and the Colorado River, and recycled water from two water reclamation plants. These imported and recycled water supplies are used to meet CVWD’s non-urban water demands and to replenish the groundwater basin, CVWD also has plans to increase its use of recycled water.

4.6.2 Supply Characterization

The types of supply recognized by DWR are presented in the following sections.

4.6.2.1 Purchased or Imported Water

CVWD has access to two sources of imported water.

CVWD receives Colorado River water through the Coachella Canal (Canal). Colorado River water has been a major source of supply for the Coachella Valley since 1949 with the completion of the Coachella Canal. The Coachella Canal is a branch of the All-American Canal that brings Colorado River water into the Imperial and Coachella Valleys. The Canal originates at Drop 1 on the All-American Canal and extends approximately 122 miles, terminating in CVWD’s Lake Cahuilla. This water is used for agricultural, golf course, and landscape irrigation purposes, as well as groundwater recharge. It is not used to meet municipal demands.

More information about CVWD’s Colorado River supplies is included in Chapter 3 of the RUWMP.

CVWD also has rights to receive water through the State Water Project (SWP). Since there is no physical connection to bring SWP water to the Valley, CVWD has entered into exchange agreements with the Metropolitan Water District of Southern California (MWD). CVWD receives water from MWD’s Colorado River Aqueduct (CRA), and in exchange MWD receives SWP water that would have gone to CVWD. This SWP Exchange water is used for groundwater recharge and not to meet municipal demands.

More information about CVWD’s SWP supplies is included in Chapter 3 of the RUWMP.

4.6.2.2 Groundwater

Groundwater is the principal source of municipal water supply in the Coachella Valley. CVWD obtains groundwater from both the Indio and the Mission Creek Subbasins. The Indio Subbasin is a common groundwater source, which is shared by CVWD, DWA, MDMWC, the cities of Indio and Coachella, and numerous private groundwater producers. The Mission Creek Subbasin is also a common water supply that is utilized by CVWD, MSWD, and private groundwater producers. More information about local groundwater resources is included in Chapter 3 of the RUWMP.

CVWD’s total groundwater production from the Indio and Mission Creek Subbasins is presented in Table 4-15. In response to growth, CVWD will gradually increase groundwater production to meet demands. CVWD intends to continue meeting its urban water demands with groundwater. In addition, CVWD has enacted water-saving policies such as tiered water rates, landscape irrigation conservation, and a new landscape ordinance applicable to the water use of new developments.

In addition to other urban water retail producers, there are private producers who pump directly from the groundwater basin. To manage groundwater overdraft, CVWD will continue to convert the larger producers to non-potable Canal water and recycled water, where feasible. CVWD also works with agencies in the region to replenish the groundwater basin and implement conservation programs.

Table 4-15. DWR 6-1R Groundwater Volume Pumped (AFY)

Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Indio Subbasin	89,421	93,798	96,176	93,130	96,661
Alluvial Basin	Mission Creek Subbasin	2,667	2,917	2,786	2,642	3,182
Total		92,088	96,715	98,962	95,772	99,843

4.6.2.3 Surface Water

CVWD does not currently use or intend to use any local surface water as part of its urban water supply. Local runoff is captured and used for groundwater recharge.

4.6.2.4 Stormwater

CVWD does not use stormwater directly as a source of supply. Through the IRWM process, CVWD and other local agencies are evaluating opportunities to capture stormwater for groundwater recharge.

4.6.2.5 Wastewater and Recycled Water

CVWD provides both water and wastewater services in its service area. CVWD provides wastewater collection and treatment services for all or part of the cities of Cathedral City, Indian Wells, La Quinta, Palm Desert, and Rancho Mirage, as well as unincorporated areas of Riverside County. By agreement, a small portion of flow from DWA’s service area is sent to CVWD’s WRP-10.

Recycled water is a significant potential local resource that can be used to help reduce overdraft. Wastewater that has been highly treated and disinfected can be reused for landscape irrigation and other purposes; however, the current level of wastewater treatment does not yield water suitable for direct potable use. Valley golf courses are not connected to CVWD's urban water but instead rely on private groundwater wells to meet their irrigation needs. To manage groundwater overdraft, CVWD started recycling wastewater for irrigation of golf courses and landscaping in the Coachella Valley in the late 1960s. As growth occurs in the Valley, the supply of recycled water is expected to increase creating an additional opportunity to maximize local water supply.

CVWD's wastewater collection system consists of approximately 1,160 miles of 6-inch through 36-inch diameter sewers, and includes 28 sewage lift stations and associated force mains. The system contains trunk sewers, generally 10 inches in diameter and larger, that convey the collected wastewater flows to the District's treatment facilities. CVWD operates five WRPs, two of which (WRP-7 and WRP-10) generate recycled water for irrigation of golf courses and large landscaped areas. Brief descriptions of CVWD's WRPs are presented here.

WRP-1 serves the Bombay Beach community near the Salton Sea. WRP-1 has a design capacity of 150,000 gallons per day (gpd), and currently all of the effluent from this facility is disposed by evaporation-infiltration. CVWD has no plans to recycle effluent from this facility because of the low flow and lack of potential uses near the plant.

WRP-2 serves the nearby North Shore community. WRP-2 has a treatment capacity of 33,000 gpd and can provide additional capacity when flows exceed this value. WRP-2 discharges treated secondary effluent into four evaporation-infiltration basins for final disposal. CVWD has no plans to recycle effluent from this facility because of the low flow and lack of potential uses near the plant.

WRP-4 is a 9.9 million gallons per day (MGD) capacity treatment facility located in Thermal. WRP-4 became operational in 1986 and serves communities from La Quinta to Mecca. WRP-4 provides secondary treatment consisting of pre-aeration ponds, aeration lagoons, polishing ponds, and disinfection. The treated effluent is discharged to the CVSC pursuant to a National Pollution Discharge Elimination System (NPDES) permit. Effluent from WRP-4 is not currently suitable for water recycling due to the lack of tertiary treatment. However, CVWD plans to add tertiary treatment and reuse effluent from this plant in the future for primarily for agricultural irrigation. CVWD has filed a Change Petition (WW0093) with the SWRCB to move forward with recycling at WRP-4.

WRP-7 is located in North Indio and has a capacity of 5.0 MGD. The design capacity of the tertiary treatment system at WRP-7 is 2.5 MGD. The off-site pumping capacity of the WRP-7 recycled water pump is approximately 4,500 gpm. In the summer, peak demands exceed the pumping capacity of 4,000 gpm, which typically serves Sun City and 500 gpm which serves Shadow Hills.

WRP-10 is located in Palm Desert. WRP-10 began delivering recycled water in 1987. The design capacity of the tertiary treatment system at WRP-10 is 15 MGD. Since 2009, WRP-10 is also capable of serving canal water from the MVP blended with tertiary water to non-potable water customers.

WRP-10 has two distribution systems. One is a low-pressure system, with recycled water and/or canal water delivered by the MVP leaving the plant in this system at 85 psi. The other system is a high pressure system which pumps recycled water and/or canal water delivered by the MVP out at 135 psi. Because the winter demand for recycled water is less than the available supply, a portion of the plant flow is disposed through on-site percolation-evaporation ponds. As more golf courses are connected to the WRP-10 recycled water distribution system, CVWD plans to eliminate percolation of recycled water.

The wastewater collected and treated in the service area is shown in Table 4-16. The recycled water produced is shown in Table 4-17.

Table 4-16. DWR 6-2R Wastewater Collected within Service Area in 2020

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated	Wastewater Volume Collected from UWMP Service Area in 2020 (AFY)	Name of Wastewater Agency Receiving Collected Wastewater	Wastewater Treatment Plant Name	Wastewater Treatment Plant Located within UWMP Area	WWTP Operation Contracted to a Third Party
CVWD	Metered	18	CVWD	WRP-1	Yes	No
CVWD	Metered	13	CVWD	WRP-2	Yes	No
CVWD	Metered	6,353	CVWD	WRP-4	Yes	No
CVWD	Metered	3,236	CVWD	WRP-7	Yes	No
CVWD	Metered	9,238	CVWD	WRP-10	Yes	No
Total		18,858				

Table 4-17. DWR 6-3R Wastewater Treatment and Discharge within Service Area in 2020

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number	Method of Disposal	Plant Treats Wastewater Generated Outside the Service Area	Treatment Level	2020 Volumes (AFY)				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
WRP-1	Bombay Beach	Percolation ponds	7A330105021	Percolation ponds	No	Secondary, undisinfected	18	18	0	0	0
WRP-2	North Shore	Percolation ponds	7A330105032	Percolation ponds	No	Secondary, undisinfected	13	13	0	0	0
WRP-4	Thermal	CVSC	7A330105091	Stormwater channel outfall	No	Secondary, disinfected - 23	6,353	5,908	0	0	0
WRP-7	North Indio	Non-potable customers and percolation ponds	7A330105071	Percolation ponds	No	Tertiary	3,236	1,300	1,936	0	0
WRP-10	Palm Desert	Non-potable customers and percolation ponds	7A330105012	Percolation ponds	Yes	Tertiary	9,238	1,716	7,521	0	0
Total							18,858	8,955	9,457	0	0

The existing recycled water customers are not part of CVWD's urban potable water system, but are private groundwater producers that purchase recycled water. It is expected that golf course irrigation will remain the largest use of recycled water in the future. Although CVWD's urban water demand is not offset by recycled water use, the Coachella Valley's water supply is indirectly increased by transitioning private groundwater producers to recycled water. Table 4-18 summarizes the current and projected uses of recycled water within CVWD's service area.

The 2015 UWMP projected recycled water uses for 2020 are presented in Table 4-19 compared with actual recycled water use.

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Table 4-18. DWR 6-4R Recycled Water Within Service Area in 2020 (AFY)

Name of Supplier Producing (Treating) the Recycled Water			Coachella Valley Water District							
Name of Supplier Operating the Recycled Water Distribution System			Coachella Valley Water District							
Supplemental Volume of Water Added in 2020										
Source of 2020 Supplemental Water			Coachella Canal							
Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
Landscape Irrigation (excludes golf courses)			HOAs and municipal buildings	Tertiary	383	383	383	383	383	383
Golf Course Irrigation				Tertiary	8,313	13,217	14,017	14,717	15,517	16,417
Commercial Use										
Industrial Use										
Geothermal and Other Energy Production										
Seawater Intrusion Barrier										
Recreational Impoundment										
Wetlands or Wildlife Habitat										
Groundwater Recharge (IPR)										
Surface Water Augmentation (IPR)										
Direct Potable Reuse										
Total					8,696	13,600	14,400	15,100	15,900	16,800
Internal Reuse (Not included in Statewide Recycled Water Volume)					761					
*IPR - Indirect Potable Reuse										

Table 4-19. DWR 6-5R Recycled Water Use Projection Compared to Actual

Use Type	2015 Projection for 2020 (AFY)	2020 Actual Use (AFY)
Agricultural Irrigation		
Landscape Irrigation (excludes golf courses)	400	383
Golf Course Irrigation	13,900	8,313
Commercial Use		
Industrial Use		
Geothermal and Other Energy Production		
Seawater Intrusion Barrier		
Recreational Impoundment		
Wetlands or Wildlife Habitat		
Groundwater Recharge (IPR)*		
Surface Water Augmentation (IPR)*		
Direct Potable Reuse		
Total	14,300	8,696

CVWD has long encouraged the use of recycled water for irrigation purposes. In 2006, CVWD sponsored SB 1557 that was adopted by the California Legislature as Part 8.2 (CWC §32600-32603) of the County Water District Law. This law applies only to CVWD and specifies that the use of potable domestic water for non-potable uses for cemeteries, parks, highway landscaped areas, new industrial facilities, and golf course irrigation is a waste and an unreasonable use. In 2014, Assembly Bill 1896 amended this law (CWC §32601) to include the use of potable domestic water for landscaped common areas of residential developments maintained by a homeowner's association as a waste and an unreasonable use. The law mandates the use of non-potable water (including recycled water) for cemeteries, parks, highway landscaped areas, new industrial facilities, landscaped common areas of residential developments maintained by a homeowner's association, and golf course irrigation provided:

1. The CVWD Board determines that the source of non-potable water is of adequate quality for the proposed use and is available for that use.
2. The CVWD Board determines that the non-potable water may be furnished for the proposed use at a reasonable cost to the user.
3. The State Department of Public Health determines that the use of non-potable water from the proposed source will not be detrimental to public health.
4. The California Regional Water Quality Control Board determines that the use of non-potable water from the proposed source will comply with any applicable water quality control plan.
5. The CVWD Board determines that the use of non-potable water for the proposed use will not adversely affect groundwater rights, will not degrade water quality, and is determined not to be injurious to plant life, fish, and wildlife.

CVWD uses this law to encourage the use of both recycled water and Coachella Canal water for non-potable uses. In 2009, CVWD developed a standardized non-potable water use contract that mandates at least 80 percent of the demand be met with non-potable water. As part of the non-potable water use contract, CVWD establishes the price of non-potable water at 85 percent of the cost of groundwater pumping and the applicable replenishment assessment charge. The agreement also specifies a 50 percent "conservation charge" for any non-potable water use below 80 percent of demand, providing a financial incentive to use non-potable water.

Where practical, CVWD requires new developments to use recycled or non-potable water as a condition of receiving domestic and sanitation services from CVWD. The developments will then use the recycled or non-potable water as it becomes available. CVWD also has a policy of requiring that new golf courses either use recycled water or canal water where it is available. CVWD is committed to maximizing the use of non-potable water for non-potable uses by investing in infrastructure improvements as discussed previously.

4.6.2.6 Desalinated Water Opportunities

CVWD has evaluated the use of desalinated water as part of its water supply portfolio, through the desalination of local agricultural drain water. At this time this opportunity has been deferred due to slower than anticipated growth.

4.6.2.7 Water Exchanges and Transfers

This section describes opportunities for water exchanges and transfers, including existing emergency interconnections between CVWD and adjacent water agencies.

SWP Exchange water is a significant supply for groundwater recharge in the Coachella Valley. This supply is described in Chapter 3 of the RUWMP.

Water transfers involve the temporary or permanent sale or lease of a water right or contractual water supply between willing parties. Water can be made available for transfer from other parties through a variety of mechanisms:

- Transferring imported water from storage that would have otherwise carried over to the following years
- Pumping groundwater instead of imported water delivery and transferring the imported water
- Transferring previously stored groundwater either by direct pumping or exchange for imported water
- Reducing consumptive use through crop idling/shifting or implementing water use efficiency measures
- Reducing return flows or conveyance losses

The ability to successfully execute a water transfer depends upon a number of factors including:

- Water rights (pre- vs. post-1914 rights) and place of use requirements
- Regulatory approval (SWRCB, DWR, Reclamation)
- Ability to convey the transferred water
- Delta carriage water and conveyance losses
- Environmental impacts (CEQA/NEPA compliance)
- Third-party impacts
- Supply reliability
- Cost

CVWD continues to evaluate potential transfers as a way to increase supply reliability. At this point, no specific new transfer projects have been identified.

CVWD currently has emergency interties with IWA, Mission Springs Water District, and Desert Water Agency. The combined capacities of these connections is in excess of 20 million gallons per day.

4.6.2.8 Future Water Projects

CVWD recognizes the need to obtain additional water supplies to meet projected water demands and prevent groundwater overdraft. CVWD is investigating several programs to obtain additional supply or improve the reliability of SWP supplies. These programs are described below.

Delta Conveyance Facility

The Delta Conveyance Facility (DCF) would construct and operate new conveyance facilities in the Delta, primarily a new tunnel to bypass existing natural channels used for conveyance. New intake facilities would be located in the north Delta along the Sacramento River between Freeport, CA and the confluence with Sutter Slough. A new tunnel would convey water from the new intakes to the existing Banks Pumping Plant and potentially the federal Jones Pumping Plant, both in the south Delta. The new facilities would provide an alternate location for diversion of water from the Delta and would be operated in coordination with the existing south Delta pumping facilities. CVWD and DWA have approved an agreement to advance their share of funding for DCF planning and design costs.

Lake Perris Dam Seepage Recovery Project

In 2017, MWD and DWR began preliminary planning for recovery of seepage below the Lake Perris Dam and delivery of the recovered water to MWD in addition to its current allocated Table A water. The project is composed of installing a series of five pumps down-gradient from the face of the Lake Perris Dam that will pump water that has seeped from the lake into the groundwater. The recovered water will be pumped into a collection pipeline that discharges directly into MWD's Colorado River Aqueduct south of Lake Perris.

CVWD and DWA were invited to partner in the project with MWD, and the parties are currently working on an agreement with DWR for funding of environmental analysis, planning, and preliminary design.

Sites Reservoir Project

The Sites Reservoir Project would capture and store stormwater flows from the Sacramento River for release in dry years. Sites Reservoir would be situated on the west side of the Sacramento Valley, approximately 10 miles west of Maxwell, CA. When operated in coordination with other Northern California reservoirs such as Shasta, Oroville, and Folsom, which function as the backbone to both the SWP and the Central Valley Project, Sites Reservoir would increase flexibility and reliability of statewide water supplies in drier periods. In 2019, CVWD and DWA both entered into an agreement with the Sites Project Authority for the next phase of planning for the Sites Reservoir.

Table 4-20 provides a summary of expected future water supply projects.

Table 4-20. DWR 6-7R Expected Future Water Supply Projects or Programs

Name of Future Projects or Programs	Joint Project with Other Suppliers	Agency Name	Description	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier (AFY)
Lake Perris Dam Seepage Recovery Project	Yes	MWD		2023	Normal	2,425
Sites Reservoir Project	Yes	Sites Project Authority		2035	Normal	10,000

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4.6.2.9 Summary of Existing and Planned Sources of Water

Summaries of the existing and planned urban water supply volumes by source are presented in Table 4-21 and Table 4-22.

Table 4-21. DWR 6-8R Actual Water Supplies

Water Supply	Additional Detail on Water Supply	2020	
		Actual Volume (AFY)	Water Quality
Groundwater (not desalinated)	Indio Subbasin	96,661	Drinking Water
Groundwater (not desalinated)	Mission Creek Subbasin	3,182	Drinking Water
Recycled water	WRP-7 and WRP-10	9,457	Recycled water
Total		109,300	

Table 4-22. DWR 6-9R Projected Water Supplies

Water Supply	Additional Detail on Water Supply	Projected Water Supply (AFY)				
		2025	2030	2035	2040	2045
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Groundwater (not desalinated)	Indio and Mission Creek Subbasins	123,461	130,582	137,629	143,081	148,166
Recycled Water		13,600	14,400	15,100	15,900	16,800
Total		137,061	144,982	152,729	158,981	164,966

4.6.2.10 Special Conditions

Climate change has the potential to affect Coachella Valley's two major sources of imported water: the Colorado River and the SWP. Potential effects of global warming could also increase water demand within the Coachella Valley. These potential impacts are discussed in Chapter 3.

4.6.3 Submittal Tables Completion Using the Optional Planning Tool

CVWD has elected not to use the Optional Planning Tool.

4.6.4 Energy Use

CVWD has compiled data to document the energy used for water management operations. CVWD used the Total Utility Approach to estimate the energy intensity of its water management operations.

The results are summarized in Table 4-23.

Table 4-23. DWR O-1B Energy Intensity Reporting

Table O-1B: Recommended Energy Reporting - Total Utility Approach				
Enter Start Date for Reporting Period	1/1/2019	Urban Water Supplier Operational Control		
End Date	12/31/2019			
Is upstream embedded in the values reported?	No	Sum of All Water Management Processes	Non-Consequential Hydropower	
<i>Water Volume Units Used</i>	<i>AFY</i>	Total Utility	Hydropower	Net Utility
<i>Volume of Water Entering Process (volume unit)</i>		95,772 AFY	0	95,772 AFY
<i>Energy Consumed (kWh)</i>		129,094,314	0	129,094,314
<i>Energy Intensity (kWh/volume)</i>		1,347	0	1,347
Quantity of Self-Generated Renewable Energy				
	kWh			
Data Quality (<i>Estimate, Metered Data, Combination of Estimates and Metered Data</i>)				
<i>Combination of Estimates and Metered Data</i>				
Data Quality Narrative				
Energy use data was obtained from electricity consumption records maintained by the agency.				
Narrative				
The agency uses energy for groundwater production from wells, pumping at booster stations from lower pressure zones to higher pressure zones, and treatment processes.				

4.7 Water Service Reliability and Drought Risk Assessment

The California Urban Water Management Planning Act (Act) requires urban water suppliers to assess water supply reliability by comparing total projected water use with the expected water supply over the next 20 to 25 years in five-year increments. The Act also requires an assessment for a single dry year and multiple dry years. This chapter presents the reliability assessment for CVWD’s service area.

4.7.1 Reliability Overview

Regional water agencies are facing increasing challenges and opportunities in their role as stewards of water resources in the region. The region faces a growing gap between its water requirements and its firm water supplies. Increased environmental regulations, the collaborative competition for water from outside

the region, and the current drought conditions have curtailed supplies of imported water. Continued population and economic growth increase water demand within the region, putting an even larger burden on local supplies.

CVWD’s only direct source of urban potable water supply is local groundwater. However, the groundwater supply is replenished with CVWD’s supplies of Colorado River and SWP Exchange water. Potential constraints on these supplies that could affect reliability are discussed in Chapter 3.

The average year is a year, or an averaged range of years, that most closely represents the median water supply available to CVWD. The Act uses the term “normal” conditions. This RUWMP uses the long-term average supply metrics to represent average year conditions.

The single dry year is the year that represents the lowest water supply available to CVWD. This RUWMP uses 2014 for the single dry year as a worst case.

The multiple dry year period is the period that represents the lowest average water supply available to CVWD for a consecutive multi year period (five years or more). This is generally considered to be the lowest average runoff for a consecutive multiple year period for a watershed since 1903. DWR has interpreted “multiple dry years” to mean five dry years; however, water agencies may project their water supplies for a longer time period. This RUWMP uses 2012 through 2016 as the multiple dry year period.

Table 4-24 summarizes the water years used as the basis for urban water supply reliability assessment and the percent of average supply available for each base year.

Table 4-24. DWR 7-1R Basis of Water Year Data

Year Type	Base Year	Available Supply if Year Type Repeats
		Percent of Average Supply
Average Year	2020	100%
Single-Dry Year	2014	100%
Consecutive Dry Years 1st Year	2012	100%
Consecutive Dry Years 2nd Year	2013	100%
Consecutive Dry Years 3rd Year	2014	100%
Consecutive Dry Years 4th Year	2015	100%
Consecutive Dry Years 5th Year	2016	100%

4.7.2 Water Service Reliability Assessment

The following tables provide CVWD’s projected water supplies and demands in a normal year, single dry year, and multiple dry years. It should be noted that the retail supplies and demands presented in the tables below include recycled water delivered to CVWD’s non-urban customers based on DWR’s standardized tables and the UWMP Guidebook. However, recycled water is not an urban water supply and is not delivered to CVWD’s urban water customers. Instead, recycled water is used to offset the groundwater pumping of private well owners (mainly golf courses) to eliminate overdraft.

Supplies and demands for the average year are summarized in Table 4-25.

Table 4-25. DWR 7-2R Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY) From DWR Table 6-9R	137,061	144,982	152,729	158,981	164,966
Demand Totals (AFY) From DWR Table 4-3R	137,061	144,982	152,729	158,981	164,966
Difference	0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

Urban water supplies during the single dry year are fully reliable. Thus, the supply and demand comparison for the single dry year, shown in Table 4-26, is the same as the average year.

Table 4-26. DWR 7-3R Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY)	137,061	144,982	152,729	158,981	164,966
Demand Totals (AFY)	137,061	144,982	152,729	158,981	164,966
Difference (AFY)	0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

Similar to the single dry year, the multiple dry year urban water supply reliability is 100 percent. Table 4-27 summarizes the multiple dry year supply and demand comparison.

Table 4-27. DWR 7-4R Multiple Dry Years Supply and Demand Comparison

		2025	2030	2035	2040	2045
First Year	Supply Totals (AFY)	137,061	144,982	152,729	158,981	164,966
	Demand Totals (AFY)	137,061	144,982	152,729	158,981	164,966
Difference		0	0	0	0	0
Second Year	Supply Totals (AFY)	137,061	144,982	152,729	158,981	164,966
	Demand Totals (AFY)	137,061	144,982	152,729	158,981	164,966
Difference		0	0	0	0	0
Third Year	Supply Totals (AFY)	137,061	144,982	152,729	158,981	164,966
	Demand Totals (AFY)	137,061	144,982	152,729	158,981	164,966
Difference		0	0	0	0	0
Fourth Year	Supply Totals (AFY)	137,061	144,982	152,729	158,981	164,966
	Demand Totals (AFY)	137,061	144,982	152,729	158,981	164,966
Difference		0	0	0	0	0
Fifth Year	Supply Totals (AFY)	137,061	144,982	152,729	158,981	164,966
	Demand Totals (AFY)	137,061	144,982	152,729	158,981	164,966
Difference		0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.						

4.7.3 Management Tools and Options

CVWD was formed in 1918 with the purpose of protecting the water supplies of the Coachella Valley. CVWD has acquired imported water supplies to replenish local groundwater supplies and continues to evaluate additional opportunities to increase supply reliability. Significant investments have been made to implement water conservation programs, acquire additional SWP Table A allocations, construct groundwater replenishment facilities to recharge the groundwater basin, and convert groundwater users to Canal water and recycled water. These programs have had a significant effect on stabilizing groundwater levels and eliminating overdraft.

CVWD is acting as a GSA in both the Indio and Mission Creek Subbasins to help manage the groundwater basin and implement the Alternative Plans. CVWD has implemented a number of programs to maximize the use of local water supplies and reduce demands including significant recycled water and water conservation programs; see Section 4.9 for demand management measures currently in place by CVWD. CVWD has also participated in the Coachella Valley Regional Water Management Group (CVRWVG) with other public water agencies in the Coachella Valley; more information about this group's activities to increase supply reliability is included in Chapters 2 and 3 of the RUWMP.

4.7.4 Drought Risk Assessment

A new reporting requirement for the 2020 UWMP is a five-year Drought Risk Assessment (DRA). The DRA is based on projections of demand and available supply for the next five years.

The results of the DRA are summarized in Table 4-28.

DRAFT

Table 4-28. DWR 7-5 Five-Year Drought Risk Assessment

2021	Gross Water Use (AFY)	114,862
	Total Supplies (AFY)	114,862
	Surplus/Shortfall without WSCP Action	0
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
2022	Gross Water Use (AFY)	120,412
	Total Supplies (AFY)	120,412
	Surplus/Shortfall without WSCP Action	0
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
2023	Gross Water Use (AFY)	125,961
	Total Supplies (AFY)	125,961
	Surplus/Shortfall without WSCP Action	0
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
2024	Gross Water Use (AFY)	131,511
	Total Supplies (AFY)	131,511
	Surplus/Shortfall without WSCP Action	0
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
2025	Gross Water Use (AFY)	137,061
	Total Supplies (AFY)	137,061
	Surplus/Shortfall without WSCP Action	0
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	0
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
<p>Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.</p>		

4.8 Water Shortage Contingency Plan

CVWD has developed a Water Shortage Contingency Plan (WSCP) to meet the requirements of this section of the Guidebook. The WSCP is included as an attachment to this RUWMP.

4.9 Demand Management Measures

This section describes CVWD water conservation goals, its existing and proposed conservation programs, and addresses the requirements of the UWMP relative to demand management.

4.9.1 Demand Management Measures for Wholesale Suppliers

CVWD does not receive or currently provide wholesale water. This section is not applicable to CVWD's service area.

4.9.2 Existing Demand Management Measures for Retail

CVWD implements the demand management measures (DMMs) identified in CWC §10631 in addition to other DMMs. The following subsections summarize the current DMMs in place and implementation over the past five years.

4.9.2.1 Water Waste Prevention Ordinances

CVWD has implemented water waste restrictions through its ordinance imposing mandatory restrictions on water use. CVWD's current ordinance is 1422.5 and includes prohibitions on inefficient water use. Some measures are in effect at all times, and some are implemented at different shortage levels of the WSCP. CVWD's ordinance also describes recommended activities for customers and Homeowners Associations (HOAs).

In addition, provisions of CVWD's landscape ordinance 1302.5 (revised July 2020) include specific prohibitions and penalties for water waste. These provisions from Section 3.15.040, Part C are provided below:

1. Water waste resulting from inefficient landscape irrigation including runoff, low-head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures is prohibited. All broken heads and pipes must be repaired within 72 hours of notification. Penalties for violation of these prohibitions are established in Section 3.15.070.
2. Customers who cause water waste may have their service discontinued.
3. Customers who appear to be exceeding the Maximum Applied Water Allowance (MAWA) may be interviewed by the District Water Management Department to verify customer water usage to ensure compliance.

4.9.2.2 Metering

One hundred percent of CVWD's urban water customers are metered. The meters are billed based on volume of use. CVWD has mixed use meters serving both domestic use and landscape irrigation. The landscape ordinance Section 3.15.030, Part D specifies:

Separate landscape water meters shall be installed for all projects except single family homes with a landscape area less than 5,000 square feet. Landscape meters for single family homes with a landscape area over 5,000 square feet may be served by a permanent service connection provided by the District or by a privately owned submeter installed at the irrigation point of connection on the customer service line.

4.9.2.3 Conservation Pricing

Conservation pricing provides incentives to customers to reduce average or peak use, or both. CVWD uses water commodity rates for its domestic water, non-potable (including Canal and recycled) water, and groundwater replenishment services. For its urban water system, CVWD has used a water budget-based tiered rate structure that discourages wasteful water use since 2009.

Every residential customer is given a personalized water budget based on the number of people living in the home, the size of the home's landscaped area (budgeting more water to those with larger landscapes), and daily weather (budgeting more water during hotter months). Customers pay the tier rate for all water used within that tier.

CVWD is currently in the process of updating water rate studies for its domestic water, Canal water, and replenishment assessment charges. The domestic water rates are proposed to be adjusted to continue to encourage additional water conservation and generate the revenue required to meet District expenses, consistent with cost of service principles and legal requirements.

4.9.2.4 Public Education and Outreach

There are several public information programs being operated presently by CVWD. The purpose of these programs is to educate the public on conservation programs being planned and/or implemented by CVWD, as well as educational tips that customers can use to lower their water usage.

4.9.2.5 Publications – Lush and Efficient

CVWD publishes a comprehensive book on water-efficient landscaping in the Coachella Valley titled *Lush and Efficient: Landscape Gardening in the Coachella Valley*. The guide draws on the expertise of local irrigation and landscaping specialists to provide users with step-by-step instructions and techniques for creating and maintaining water-efficient landscapes, plus hundreds of low-water using plants that thrive in the desert. First published in 1988, the popular book is available for free from CVWD's website. Hard copies are also readily available for free at special events and for purchase for a nominal fee. In 2016, an updated version showcasing new plant materials and the latest irrigation tools and techniques, was debuted. The measurement of interest and success of this program will be to show an increase in the number of hard copies distributed and the number of page views the online version receives.

4.9.2.6 Demonstration Gardens

The majority of urban potable water distributed by CVWD is used outside, with about 70-80 percent being used to maintain landscapes. Since CVWD's boundaries fall within the California Department of Water Resources' highest ET zone (18), it takes more water to grow landscapes here than in any other portion of California. The Coachella Valley shares this highest water use designation with the Palo Verde Valley, Imperial Valley, and Death Valley.

One way to reduce landscape water requirements is to use native desert plants in landscaping. Desert native plants have evolved both anatomical and physiological mechanisms that allow them to survive on annual rainfall alone.

Within the Coachella Valley, which is one of the lowest annual rainfall areas in the state, desert plants from other, wetter deserts can be utilized with a minimum amount of irrigation. CVWD has identified and illustrated these plant choices in its publication *Lush and Efficient: Landscape Gardening in the Coachella Valley*. CVWD's two demonstration gardens, one at its headquarters in Coachella and the other at its office in Palm Desert, provide the landscape industry and the general public an opportunity to observe the plants in a landscape setting.

The objective measurements of interest and success of this program will be attendance at the gardens and subjective measurements achieved through the feedback from visitor surveys.

Additionally, a new demonstration garden is planned for the Palm Desert Campus using grant funding.

4.9.2.7 Landscape and Leak Detection Workshops

CVWD started offering an annual horticultural workshop more than 20 years ago with about 30 people attending a half-day session at College of the Desert. This program steadily grew over the years to a culmination of 220 people participating in 2010. In order to make the workshop more manageable, the structure was changed, and workshops are now held throughout the year with different topics continually being introduced.

Speakers include CVWD staff and community members who are experts in various fields related to landscaping. Participants are given a free copy of *Lush and Efficient: Landscape Gardening in the Coachella Valley* and other xeriscape information. Attendance at each event ranges from 50-75 people.

The measurement of interest and success of this program will be through stable or increased attendance for the course offered under this program.

4.9.2.8 Community Outreach

Outreach events in 2020 were impacted by the COVID-19 pandemic, however CVWD developed virtual resources that could be accessed online. These resources include virtual workshops, CVWD staff presenting at virtual meetings, and current development of virtual tours.

CVWD's marketing/advertising program includes print, radio, billboards, social media, and TV ads primarily focused on water conservation, CVWD services, and promotion of workshops.

4.9.2.9 Water Conservation Website, E-notifications, and Facebook

CVWD has a large section on its website (www.cvwd.org/conservation) devoted to water conservation and education. Started in 2005, the webpage provides information on all of the agency's conservation programs, including conservation rebate programs, current water-use restrictions, upcoming workshops, conservation tips (in the form of videos, fact sheets and guides), a guide for proper irrigation, and a link to download CVWD's landscaping book, *Lush and Efficient: Landscape Gardening in the Coachella Valley*. In addition, regional daily and monthly weather and reference evapotranspiration rate information is provided to guide water users. The conservation section received 39,953 page views in 2020. The measurement of interest and success of this program will be to show stable or increasing page views to the section.

In addition, CVWD partners with four other public water agencies in the region to maintain a cooperative educational website at www.cvwatcounts.com. This site also provides water conservation tips and links to the five agencies.

CVWD's e-notification program began in 2014 to provide a voluntary email subscription service to customers. As of January 2021, email notification subscriptions include the following topics and number of subscribers:

- Board meetings - 517
- Events & workshops - 917
- News releases - 1,997
- Tours – 1,113
- Water quality reports – 1,956

The District launched its Facebook page in 2014, its Twitter page in 2017, and its Instagram account in 2018. As of January 2021, these social media pages had 2,044 followers on Facebook, 563 on Twitter and 965 on Instagram.

Social media posts include information about services, construction projects, milestones, employee highlights, conservation tips, traffic advisories for construction work and announcements of new policies and programs.

4.9.2.10 School Education Program

CVWD has an established school education program which began in 1992. The agency has two full-time teachers on staff implementing the program. Presently, there are four components to the program. The first is classroom presentations on a variety of water-related topics with an emphasis on water conservation. The second component is facility tours, the third is science fair promotion and sponsorship and the fourth is a newsletter targeted to teachers. CVWD's teachers make audience-specific water education presentations to students at every level from pre-school to college. All school lesson plans are developed using California State Board of Education Standards and Frameworks. In addition to classroom presentations, CVWD's teachers host several tours of water-related facilities and judge science fairs for the public and private schools within the agency's service area. A quarterly newsletter, The Water Wheel was targeted specifically to teachers to promote the other three components of the program and provide valuable information to assist teachers in incorporating water-related topics into their lesson plans. That newsletter is currently being revised into an e-newsletter and will likely be renamed.

4.9.2.11 Programs to Assess and Manage Distribution System Real Loss

CVWD's water loss program evaluates both apparent and real water loss. The programs and practices listed below constitute water loss reduction efforts:

- Production Well Meter Testing: This consists of CVWD testing all our production well meters twice per year. This is to ensure meter accuracy and data validity to accurately calculate our water loss when performing water loss audits. If the meter is not within the acceptable tolerance, it is replaced.
- Customer Meter Testing: CVWD tests a random representative sample of our customer meter population. The testing process includes minimum, intermediate, and maximum flow rates. All tested meters are required to be within a range based on the AWWA M6 standard for "accuracy limits" for size and type of meter; if a meter fails one of these flow rates, the meter is replaced. Test data is used in the AWWA Water Loss Audit Software to calculate customer meter inaccuracy.
- Proactive Meter Replacement: Based on meter failures and industry data, CVWD currently replaces meters after 20 years of service as an ongoing preventative maintenance program. This program is to ensure accurate data in regards to customer billing and water loss due to meter inaccuracy.
- Leak Detection: CVWD's leak detection program surveys 80-110 miles of main a month, the goal is to proactively find and fix unreported non-surfacing leaks in the distribution system. The leak detection crew surveys the entire distribution system for leaks over an approximately two-year period.
- Leak Repair: CVWD fixes surfacing and non-surfacing leaks within five days for non-emergency leaks. Five days is generally the time between the notification of the leak and the fixing of the leak. Emergency leaks are prioritized and fixed within one day of notification. Non-surfacing/unreported leaks are scheduled and fixed accordingly.
- District Site Use Water Meters: CVWD has installed meters at all of its domestic sites to accurately track site usage. This data helps provide consumption data that is entered into the AWWA Water Loss Audit Software.
- Meter Reading: CVWD's meter reading system identifies meters with no/low consumption. Staff is also trained to identify potential faulty meters. A work order is entered for replacement if the meter is not operating correctly. Comparison reading is also conducted to compare Automatic Meter Reads to their actual read. This practice can help identify faulty electronics or set up errors in the metering system.
- Meter Repair Work Order Prioritization: Work orders that negatively impact billing and/or contribute to water loss are considered "priority" and are completed as soon as possible. It is typical to have less than a two week backlog on these type of priority work orders. Making these a priority minimizes water loss.
- Billing Reports: Billing runs exceptions reports to identify low or zero consumption anomalies. These reports can help locate a potential problem in the billing system or the meter, which can be investigated and repaired.

4.9.2.12 Water Conservation Program Coordination and Staffing Support

CVWD currently has a full-time water conservation manager as well as support staff for CVWD's conservation programs. Supporting positions include a water management supervisor, lead water management specialists, water management specialists, water management technicians, and water management aides. Beginning in 2001 with a staff of only two people, the section has now grown to a staff of 15 people tasked with carrying out the agency's various conservation programs.

4.9.2.13 Other Demand Management Measures

CVWD has several other DMMs including landscape conservation and incentive programs, residential efficiency programs, and golf and agricultural conservation programs. These are described briefly in the following subsections.

4.9.2.14 Large Landscape Conservation Programs and Incentives Program

There are two principal groups of large landscape customers within the CVWD service area – those with separate irrigation meters on the urban water system, and those with private wells for golf course or other large landscape irrigation. Irrigation accounts for approximately 75-80 percent of total urban water usage. Consumption by users with separate irrigation meters represents over 20 percent of total CVWD domestic water consumption. There are also many golf course irrigation users, who are not CVWD urban water users, but produce groundwater from private wells. One of CVWD's goals is to reduce water use by these large landscape pumpers.

4.9.2.15 Water Management Seminar for Landscape Professionals (English and Spanish)

Commercial and recreational landscape irrigation systems are often improperly installed, poorly maintained, and inefficiently scheduled by transitory landscape maintenance personnel who are often unskilled and uneducated in the science and practice of landscape irrigation efficiency. Career landscape maintenance professionals have little or no in-valley irrigation science educational opportunities.

Starting in September 2009, CVWD began offering a water landscape workshop specifically aimed at landscape professionals. The 6-hour workshop was designed to help local landscape professionals efficiently irrigate their clients' lawns and gardens without wasting water. Certified water conservation managers and turf and irrigation experts gave presentations on Coachella Valley soils, drip irrigation, smart controllers, water pressure regulation, and irrigation scheduling. At the conclusions of each workshop, all participants received a certificate of completion. Participants with professional landscape companies were listed on CVWD's website (www.cvwd.org).

The program has since been replaced by a combination of the public Landscape Workshop Series (hosted in the spring and fall) and the Landscaper Certification Program (see below).

4.9.2.16 Landscaper Certification Program

CVWD hosts a Landscaper Certification Program (LCP) for professional landscapers that focuses on water use efficiency. The class was modeled after an existing course focused on air quality in relation to lawn scalping and re-seeding practices. The certification is a requirement in order to obtain or renew a professional landscaping business license in any city or county area within the Coachella Valley.

CVWD partnered with College of the Desert (COD), a local community college with an established Landscape Management Program, Coachella Valley Association of Governments (CVAG), and the cities, county and neighboring water districts to implement the course and establish certification criteria for incorporation into each city's business license qualification requirements.

CVWD developed the curriculum of the LCP using existing staff that hold licenses and certifications in irrigation efficiency, plant water use, horticultural practices, arboriculture, and landscape/golf course irrigation auditing. CVWD ensures the curriculum is high quality by asking for review from industry educators such as COD instructors and industry professionals. CVWD and COD worked together to create the course

and certification based on the developed curriculum. CVWD and CVAG worked with the cities on an amendment to existing ordinances to establish the business license requirement.

4.9.2.17 Water Audits for Large Water Users

The purpose of the Large Landscape Irrigation Audit Program is to assist users in maximizing the efficient operation of their irrigation system by measuring performance, generating irrigation schedules and recommending improvement actions.

The goals of this audit program are to determine the irrigation uniformity, efficiency and application rate of each audited site, suggest modifications in design, operation, maintenance and scheduling and estimate the water and energy savings associated with the suggested modifications. A report summarizing the audit's findings and recommendations is sent to the irrigation manager.

Audit sites are chosen based on excessive water consumption, or in response to a request for audit services. CVWD's Water Management Specialist evaluates and approves each site. All auditors must take the Irrigation Association's Landscape Irrigation Auditor course and pass the Certified Landscape Irrigation Auditor examination, or equivalent.

Once a site is approved for audit, the owner or operator of the facility is contacted and an appointment is made to conduct the audit. After measurements and calculations are completed, a summary report and recommendations is delivered and explained to the site operator by the auditor. The large landscape audit program operates continuously, and completes approximately 20 landscape audits per year. The success of this program will be measured by the annual water reduction achieved by large water users participating in the program. A study in 2005 found that the average HOA saved 3.1 AFY as a result of implementing some of the audit recommendations.

CVWD contracted Proteus Consulting to conduct large scale comprehensive water audits for 13 commercial customers with water use in Tier 5. The program was designed to educate, train, and promote water conservation. The consultant firm conducted a water conservation review at each property to identify excessive water use. The chosen customer received a final report that included implementation advice and a return-on-investment calculation. This program ran from 2016 to 2018.

4.9.2.18 Adoption of Model Landscape Ordinance by Coachella Valley Cities to Establish Water Budget and Landscaping Criteria for New Development

The Water Conservation in Landscaping Act of 2006 (Assembly Bill 1881, Laird) required cities and counties to adopt water conservation ordinances by January 1, 2010. In accordance with the law, the DWR prepared an updated Model Efficient Landscape Ordinance (MWELo). For all cities and counties that do not adopt their own conservation ordinances, DWR's updated MWELo would apply within their jurisdiction by January 1, 2010.

In response to this law, CVWD worked with the Coachella Valley Association of Governments, Coachella Valley cities, Riverside County, other water agencies, and the Building Industry Association for the acceptance of CVWD's Landscape and Irrigation System Design Ordinance No. 1302.5. The most recent revisions to this ordinance were adopted in July of 2020.

4.9.2.19 Plan Checking for Compliance with Landscape Ordinance

New and rehabilitated landscape sites are required to submit water efficient landscape plans to CVWD's Water Management Department for a plan check prior to construction. The plan check is conducted to insure that the water efficiency features of the new landscape meet the provisions of CVWD's Landscape and Irrigation System Design Ordinance No. 1302.5. Each proposed site is given an annual maximum water allowance based on landscaped area, plant water use zone, low-moderate landscape plant water use rates and high irrigation system application efficiency. The landscape designer must utilize a combination of plant choice and irrigation system choice such that the estimated annual water use of the finished landscape does not exceed the annual maximum water allowance assigned. In addition, certain irrigation system design practices are mandated, such as setting sprinkler irrigated areas at least 24 inches back from street

curbs, or prohibited, such as overhead sprinkling of street median strips. Since 2010, CVWD has performed 926 landscape plan checks for new and rehabilitated landscape sites.

4.9.2.20 Random Inspections of Landscape Projects for Compliance with Landscape Ordinance

As mentioned in the previous section, all new and rehabilitated landscape sites are required to submit water conserving landscape plans to CVWD's Water Management Department for a plan check prior to construction. The plan check is conducted to ensure that the water efficiency features of the new landscape meet the provisions of CVWD's Landscape and Irrigation System Design Ordinance.

In order to ensure that contractors are installing plan-checked, water efficient landscapes as approved, CVWD has implemented a random inspection program. The inspections signal to the landscape construction industry that CVWD is spot checking completed landscape irrigation systems for plan-check compliance and will require errors and omissions to be corrected or face the possibility of discontinued water service.

4.9.2.21 Smart Controller Rebate Program

Beginning in 2005, CVWD instituted a smart irrigation controller rebate program to financially assist large water users in reducing landscape irrigation water consumption by purchasing an advanced irrigation controller capable of synchronizing their landscape irrigation schedules with seasonal variations in Coachella Valley reference evapotranspiration (ET_o) rates.

ET_o is a scientific description of the rate at which plant water use varies with the weather. Since the weather changes from season-to-season, week-to-week and even day-to-day, programming irrigation controllers frequently and efficiently remains one of the landscape industry worker's most neglected tasks. CVWD's program is specifically aimed at encouraging the use of "smart" irrigation clocks that reprogram themselves according to periodic variations in ET_o after the initial calibrating program has been professionally installed.

CVWD initially offered this program to residential customers in November 2005 and expanded the program to large landscape customers in March 2008. For residential customers, CVWD staff will install and program the "smart" controller at no cost to the customer. For large landscape customers, CVWD will rebate 75% of the cost of the controller. Since 2010, CVWD has installed 3,262 smart controllers for residential customers and has issued 1,659 rebates to large landscape customers that installed smart controllers.

The measurement of success of this program will be documenting water reduction by each participating user, as well as showing an annual increase in applications for the rebate as the region grows.

4.9.2.22 Landscape Conversion Rebate Program

Since 2007, CVWD has offered a rebate to its customers for converting their outdoor grass landscaping to desert-friendly landscaping, which requires less irrigation. CVWD's landscaping guide, *Lush & Efficient: Landscape Gardening in the Coachella Valley*, provides guidelines on which plants work best in the hot, arid climate. The rebate consists of \$2 per square foot of landscaping or turf, up to \$20,000 per project. Since 2010, 4,245 residential and 1,291 commercial/HOA rebates have been issued, amounting to a total of 16,648,202 square feet of turf conversion.

The measurement of the success of this program will be the number of rebates issued per year and a marked reduction in a participating customer's water consumption. CVWD performed a study of smart controllers using actual customers after having converted their landscaping and found that, on average, water savings amounted to 36% as a result of landscape conversion.

4.9.2.23 Residential Ultra-Low-Flush Toilet Replacement Rebate Program

Ultra-low-flush toilets (ULFT) conserve water by utilizing far less water than older, less efficient toilets. An ULFT uses less than 1.6 gallons per flush. In addition to direct conservation benefits, the promotion and use of these toilets has social value as it brings conservation products, literally, in direct contact with area users, thereby raising awareness of water conservation efforts. Furthermore, the use of these products has

the potential to reduce customer water and electric bills. The use of these products provides no direct health benefit or detriment.

CVWD has had a toilet rebate program since 2011. The agency provides a rebate of \$100 for each toilet replacement plus \$10 for reimbursement of any recycling fees, which will cover approximately half the cost of purchasing and installing a ULFT. Since 2010, a total of 9,445 rebates have been issued for ULFT replacements.

In addition to the rebate program, ULFTs are required for all new construction per plumbing code requirements. ULFTs were first introduced to the U.S. market in 1980, and the manufacturing of older, less efficient toilets designs was halted shortly thereafter. Industry estimates are that natural replacement of residential toilets occurs every 20-30 years or at a rate of about 3-5 percent per year. Using this methodology, approximately 25 percent of the toilets from pre-1980 houses would still be installed in 2025.

4.9.2.24 Residential High-Efficiency Washing Machine Replacement Program

As of 2018, clothes washers that have earned the ENERGY STAR certification use 14 gallons of water per load, compared to the 20 gallons used by a standard machine. CVWD now provides a high-efficiency washing machine rebate, offering a maximum of \$150 rebate per installed washing machine. Washing machine must be ENERGY STAR certified with an Integrated Water Factor of 4.5 or less.

The promotion and use of high-efficiency washing machines has social value as it brings conservation products, literally, in direct contact with area users, thereby raising awareness of water conservation efforts. Furthermore, the use of these products has the potential to reduce customer water, wastewater, gas and electric bills. The use of these products provides no direct health benefit or detriment. The indirect benefits of this are that less energy and detergents are used to operate the machines. This would reduce the need for groundwater pumping and replenishment, collection, treatment and the subsequent reuse or disposal of wastewater, as well as the numerous environmental benefits of reducing energy consumption.

4.9.2.25 Hot Water Recirculating Pump Rebate Program

CVWD offers a rebate program for residential customers who install a Hot Water Recirculating Pump in their home. Hot water recirculating pumps save water and energy by reducing the wait time for hot water to arrive at the faucet or shower. Research shows that hot water recirculating pumps can save anywhere from 3,000 to 12,000 gallons of water per year. CVWD will offer a maximum \$125 rebate, or the cost of the recirculating pump, whichever is less.

4.9.3 Implementation

DMM implementation over the past five years is summarized in Table 4-29.

Table 4-29. Demand Management Measure Implementation Summary

Program	Completed Since Program Inception	Completed Since 2010	Completed in 2015	Completed in 2020
Landscape Plan Check	1,126	926	893	116
Residential Smart Controller Installations	4,801	3,262	803	133
Lange Landscape Smart Controller Rebates	1,769	1,659	319	83
Residential Turf Conversions	4,305	4,245	628	244

Program	Completed Since Program Inception	Completed Since 2010	Completed in 2015	Completed in 2020
	(5,974,040 square feet)	(5,965,009 square feet)	(760,094 square feet)	(308,215 square feet)
Commercial / HOA Turf Conversions	1,291 (12,819,155 square feet)	1,291 (10,683,193 square feet)	212 (2,135,963 square feet)	101 (1,334,404 square feet)
Water Waste Investigations	4,941	4,888	1,205	298
Toilet Rebates	9,445	9,445	603	1,736

CVWD has achieved its 2020 water use target, but continues to implement DMMs to reduce per capita water use. CVWD anticipates the average per capita use by its existing customers will at least maintain the 383 GPCD average usage observed in 2015. In addition, CVWD anticipates that CVWD future users will achieve a 291 GPCD average usage across all customer classes due to implementation of plumbing code and updated landscape ordinance requirements. CVWD's service area has a significant seasonal and tourist population component that impacts the per capita water use calculations. CVWD anticipates continued growth in the seasonal population but at lower rates than have been observed historically.

4.9.4 Water Use Objectives (Future Requirements)

The final water use objectives for CVWD have not yet been determined.

4.10 Plan Adoption, Submittal, and Implementation

This section includes a discussion of CVWD's process for adopting, submitting, and implementing the RUWMP and CVWD's WSCP.

4.10.1 Inclusion of All 2020 Data

This RUWMP presents data on a calendar year basis and includes data for the entire calendar year 2020.

4.10.2 Notice of Public Hearing

CVWD provided notice that it would hold a public hearing to consider adoption of the RUWMP and CVWD's WSCP. CVWD provided written notice to the cities and counties within its service area on February 23, 2021. These entities are identified in Table 4-30, and the notification letters are included in Appendix B of the RUWMP. CVWD provided an additional notice to the cities and counties with the time and date of the public hearing.

Table 4-30. DWR 10-1R Notification to Cities and Counties

City	60 Day Notice	Notice of Public Hearing
La Quinta	Yes	Yes
Indio (Indio Water Authority)	Yes	Yes
Coachella (Coachella Water Authority)	Yes	Yes
Palm Desert	Yes	Yes
Cathedral City	Yes	Yes
Indian Wells	Yes	Yes
Rancho Mirage	Yes	Yes
County	60 Day Notice	Notice of Public Hearing
County of Riverside Transportation and Land Management Agency - Planning Department	Yes	Yes
Riverside County Flood Control and Water Conservation District	Yes	Yes
Riverside County Department of Public Health	Yes	Yes
Imperial County Planning and Development Services	Yes	Yes

CVWD published a notice of the public hearing in a local newspaper two weeks and one week before the hearing itself to inform the public on the meeting time and place, with the location of where the draft 2020 RUWMP and WSCP were available for review.

4.10.3 Public Hearing and Adoption

CVWD held a public hearing on June 22, 2021 to hear public comment and consider adopting this RUWMP and CVWD's WSCP.

As part of the public hearing, CVWD provided information on baseline values, water use targets, and the implementation plan as required in the Water Conservation Act of 2009. The public hearing on the RUWMP and CVWD's WSCP took place before the adoption of the plans, which allowed CVWD the opportunity to modify the plans in response to public input before adoption. After the hearing, the plans were adopted as prepared or as modified after the hearing.

The adoption resolutions for the RUWMP and CVWD's WSCP are included in Appendix H.

4.10.4 Plan Submittal

CVWD submitted standard tables electronically via DWR's UWMP submittal website along with a copy of the final report. The plan will also be submitted to the California State Library. The plan is made available to all cities and counties to which CVWD supplies water.

4.10.5 Public Availability

The RUWMP and CVWD's WSCP will be available on the CVWD website for public viewing within 30 days of filing the plans with DWR.

4.10.6 Notification to Public Utilities Commission

This section is not applicable because CVWD is not regulated by the California Public Utilities Commission.

4.10.7 Amending an Adopted UWMP or Water Shortage Contingency Plan

If CVWD identifies the need to amend the adopted RUWMP or CVWD's WSCP, each of the steps for notification, public hearing, adoption, and submittal will also be followed for the amended plan.

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Chapter 5 Coachella Water Authority

5.1 Introduction

The Coachella Water Authority (CWA) has participated in the Coachella Valley Regional Urban Water Management Plan (RUWMP) to meet its reporting requirements for 2020. This chapter describes information specific to CWA and its water use efficiency programs.

Updates to the California Water Code (CWC) for the 2020 reporting cycle are discussed in Chapter 1 of the RUWMP.

5.1.1 Chapter Organization

This chapter is organized into the sections recommended by the Guidebook prepared by the California Department of Water Resources (DWR).

- Sub-Chapter 1 provides an introduction to the chapter.
- Sub-Chapter 2 shows details about the preparation of this RUWMP.
- Sub-Chapter 3 presents information about the service area.
- Sub-Chapter 4 presents information about current and projected future water demands.
- Sub-Chapter 5 documents compliance with SB X7-7 through a reduction in per-capita water use.
- Sub-Chapter 6 presents the current and planned future water supplies.
- Sub-Chapter 7 assesses the reliability of supplies and presents a comparison of projected future supplies and demands.
- Sub-Chapter 8 discusses the Water Shortage Contingency Plan (WSCP) that will help guide actions in case of a future water shortage.
- Sub-Chapter 9 presents information about Demand Management Measures (DMMs) being implemented to encourage efficient water use.
- Sub-Chapter 10 presents information about the adoption and submittal process for this RUWMP and the WSCP.

5.1.2 UWMPs in Relation to Other Efforts

The related planning efforts by agencies in the Coachella Valley are described in Chapter 2 of the RUWMP.

5.1.3 UWMPs and Grant or Loan Eligibility

The CWC requires urban water suppliers to have a current UWMP, deemed sufficient at addressing the CWC requirements by DWR, on file with DWR in order for the urban water suppliers to be eligible for any water management grant or loan administered by DWR. In addition, the UWMP Act requires a retail water agency to meet its 2020 Compliance Urban Water Use Target and report compliance in the 2020 UWMP.

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

The participating agencies' approach to demonstrating reduced reliance on the Delta is discussed in Chapter 3 of the RUWMP.

5.2 Plan Preparation

This section provides information on CWA’s process for developing the RUWMP, including efforts in coordination and outreach.

5.2.1 Plan Preparation

CWA is participating in the Coachella Valley Regional UWMP to meet its reporting requirements under the UWMP Act.

5.2.2 Basis for Preparing a Plan

CWA is a retail public water supplier that meets the definition of an urban water supplier with over 8,300 municipal water service connections. CWA operates a single Public Water System, with information summarized in Table 5-1.

Table 5-1. DWR 2-1R Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 (AFY)
3310007	Coachella Water Authority	8,935	7,216
Total		8,935	7,216

5.2.3 Regional Planning

CWA is participating in the Coachella Valley Regional UWMP with five other water agencies, as described in Chapter 2 of the RUWMP.

5.2.4 Individual or Regional Planning and Compliance

CWA is reporting compliance with SB X7-7 as an individual agency; CWA did not participate in a Regional Alliance.

5.2.5 Fiscal or Calendar Year and Units of Measure

CWA does not sell wholesale water and is a retail agency. This report was prepared using calendar years and acre-feet as a measure of water.

5.2.6 Coordination and Outreach

CWA has coordinated with other agencies in the development of this plan. This coordination is described in Chapter 2 of the RUWMP. CWA does not rely on a wholesale supplier to meet demand. CWA meets demand through its own groundwater supplies.

5.3 System Description

This section provides information on CWA's service area, population and demographics.

5.3.1 General Description

The City of Coachella is a desert community of approximately 44,000 people located at the eastern end of the Coachella Valley, in Riverside County, California. The City is located southeast of the San Gorgonio Pass, east of the San Jacinto and Santa Rosa Mountains, and north of the Salton Sea. The current City limits encompass over 20,000 acres, and the sphere of influence encompasses approximately 13,000 additional acres around the City.

Existing land uses within the City consists primarily of single and multi-family homes. There is a commercial/light industrial zone along the freeway corridor, agricultural zone east of Highway 86/111, and a heavier industrial zone in the southern part of the City. Full buildout of the City's sphere of influence (SOI), for a total service area of approximately 53 square miles, is not anticipated until sometime after 2050.

The City of Coachella provides the following water-related services: domestic water delivery, wastewater collection and reclamation, and local drainage control. In addition, the City manages the Coachella Sanitary District, which operates a wastewater treatment facility. The City also may develop a recycled water system in the future.

CWA's current water supply source is groundwater from the Indio Sub-basin produced from CWA owned and operated wells. Currently, the City limits extend beyond CWA's current water distribution service area. However, this study takes into account the entire City limits and its sphere of influence when considering potential growth and demand.

CWA's existing water system consists of different pressure zones, groundwater wells, storage reservoirs, booster pumping stations, and distribution facilities. The current water system is divided into two pressure zones, the Low Zone and the 150 Zone. The Low Zone Area is generally south of 48th Avenue, bounded by Van Buren on the west, the Coachella Valley Storm Channel on the east, and 54th Avenue on the south. The Low Zone provides water service to the majority of the City and as the City continues to grow, the Low Zone will extend further east. The 150 Zone service area is generally north of 48th Avenue and supplies primarily commercial and light industrial users along the Interstate 10 freeway corridor.

CWA has one principal source of water supply, local groundwater pumped from the CWA-owned wells. There are currently six wells within the City's distribution system. The total pumping capacity of active wells is approximately 11,400 gallons per minute (gpm) or 16.5 million gallons per day (MGD).

There are three storage reservoirs within the City, the 1.5 million gallon (MG) Dillion Road Reservoir, the 3.6 MG Mecca Reservoir, and the 5.4 MG Well 18 Reservoir. CWA has a total reservoir storage capacity of approximately 10.5 MG; of which, approximately 1.5 MG lies within the 150 Zone.

CWA operates two booster pumping stations, the Mecca Reservoir booster pump station (Well 12 Booster) and the Well 18 Reservoir booster pump station (Well 18 Booster). The Well 12 Booster supplies the Low Zone and takes suction from the Mecca Reservoir, and the Well 18 Booster supplies both the 150 Zone and Low Zone, and takes suction from the Well 18 Reservoir.

CWA's distribution system network consists of approximately 120 miles of pipeline, which range from 4-inches to 36-inches in diameter. It is estimated that a majority of pipes in the City's water distribution system network were installed between the year 1940 and year 1990. The older pipes reside in the southerly section of the lower zone, and the newer pipes are in the northerly section. Asbestos cement (AC) is the most common pipeline material in the City, according to operations staff; with the remaining pipelines being either polyvinyl chloride (PVC) or ductile iron (DI) and lined steel.

5.3.2 Service Area Boundary Map

The City is not near built out, with large undeveloped parcels and agricultural areas, mostly east of Highway 86. Agricultural areas are not served by CWA's water system and rely on Coachella Canal water and privately owned and operated wells. As undeveloped and agricultural lands are developed into residential or other land uses, they will be served by CWA and become part of CWA's service area. For the purpose of developing baselines and targets, CWA delineated the existing water service area based on the existing distribution system. Figure 5-1 shows the existing water service area, City boundaries, and Sphere of Influence.

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2020 Coachella Valley Regional Urban Water Management Plan

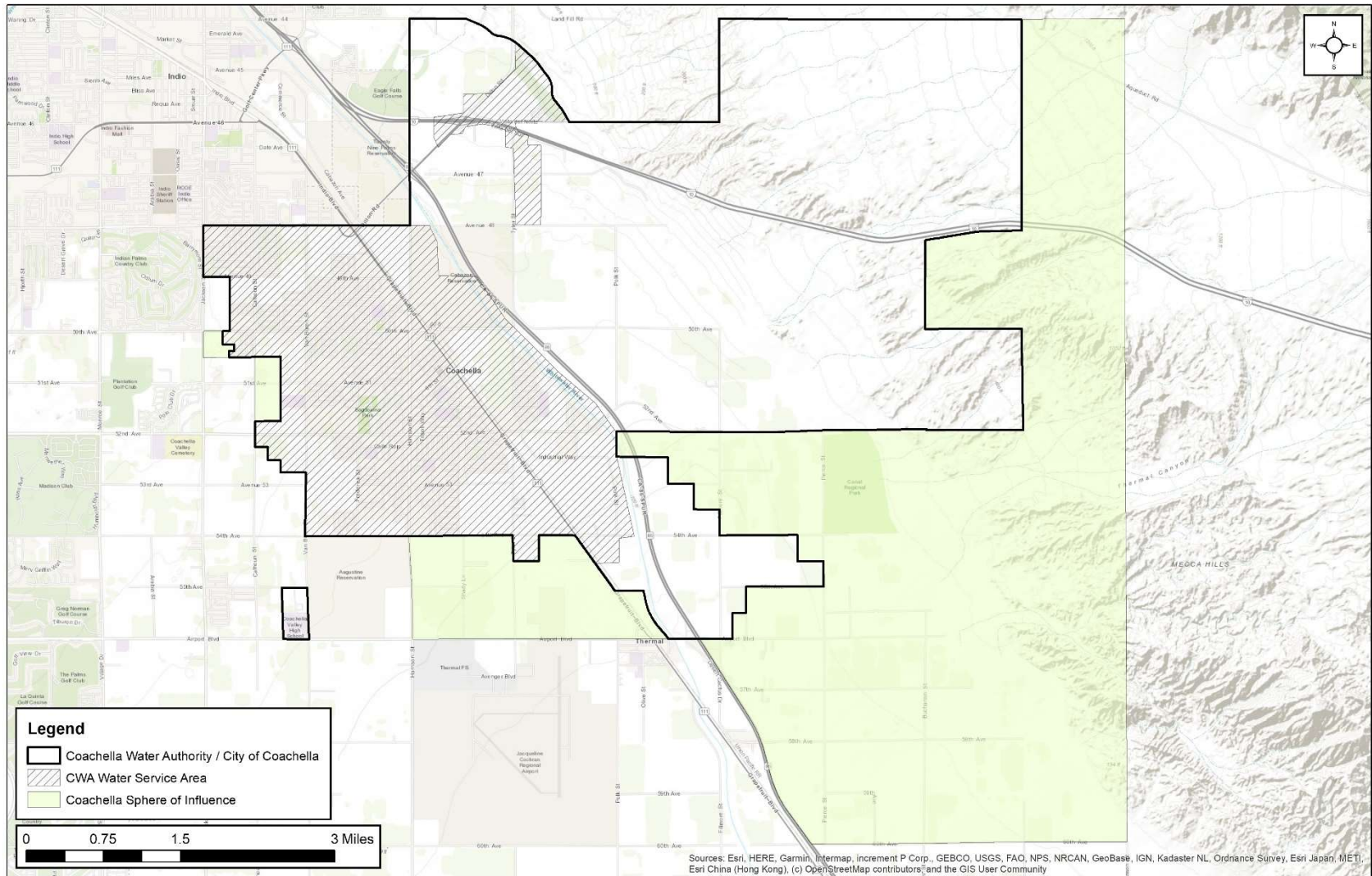


Figure 5-1. CWA Service Area Boundary

5.3.3 Service Area Climate

The City’s climate is arid with the majority of precipitation occurring as rainfall in the winter months between November and March. The average rainfall for the Coachella area is approximately 4-inches per year. Winter temperatures are generally between the low 40’s and the mid 70’s. Summer temperatures are generally between mid- 70’s and the low 100’s. Table 5-2 shows the average monthly temperature, precipitation and reference Evapotranspiration (ETo) for the area. The data are shown graphically in Figure 5-2.

Table 5-2. Monthly Average Climate Data

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	71	74	80	85	91	101	102	103	98	88	78	67	87
Average Minimum Temperature (F)	43	45	52	58	64	71	78	78	71	60	50	42	59
Average Total Precipitation (in)	0.6	0.1	1.0	0.4	0.1	0.2	0.1	0.1	0.1	0.3	0.3	0.7	3.9
Evapotranspiration, ETo (in)	2.5	3.4	5.6	7.1	8.3	8.7	8.1	7.5	6.2	4.7	2.9	2.2	67.2

Notes:
Data from California Irrigation Management Information System (CIMIS) Station 208, La Quinta II. Data from February 2007 through December 2020

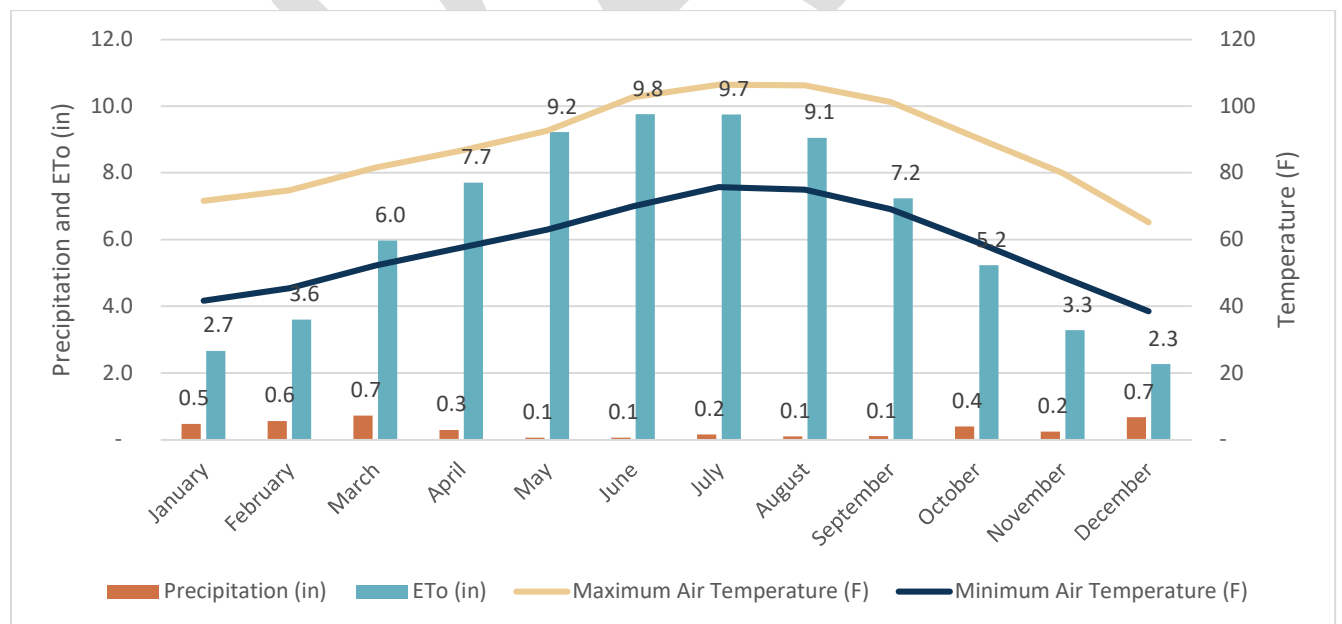


Figure 5-2. Monthly Average Climate Data

A discussion of the potential impacts of climate change on the region is included in Chapter 3 of the RUWMP.

5.3.4 Service Area Population and Demographics

CWA's water service area (WSA) population is expected to increase substantially in the future. Currently, the WSA lies within the City's boundaries, serving the more densely populated areas to the west and commercial/resort areas to the north.

In order to calculate the current water service area population, the DWR population tool was used to find the population within WSA boundary. DWR's population tool uses census data to determine the population in 2010, and then the 2020 population is estimated by using the number of connections in 2010 and 2020.

Future population projections were developed using the regional growth forecast prepared by the Southern California Association of Governments (SCAG).

The City Development Services Department has plans for several proposed development projects, ranging in size from 10 residential units to mixed-use developments with over 7,500 residential units. These units are included in the City's SOI, which is not anticipated for full build out until after 2050.

The current and projected population are shown in Table 5-3.

Table 5-3. DWR 3-1R Current and Projected Population

Population Served	2020	2025	2030	2035	2040	2045
CWA	45,522	66,478	78,735	90,991	10,248	115,504

A summary of demographic data for the City of Coachella is presented in Table 5-4.

Table 5-4. Coachella City Demographic Data

Age Distribution		Race / Ethnicity Distribution		Income and Household Size		Household Income Distribution	
Age	Percent	Race / Ethnicity	Percent	Parameter	Amount	Income	Percent
19 years and under	26.6%	White	1.7%	Median household income	\$34,224	\$24,999 and under	35.5%
20-34 years	24.1%	Black	0.6%	Average household income	\$46,759	\$25,000-\$49,999	30.1%
35-54 years	31.1%	Native American	0.1%	Per capita income	\$17,442	\$50,000-\$74,999	16.3%
55-64 years	9.9%	Asian / Pacific Islander	0.2%	Percent of Population Below Poverty Level	21.8%	\$75,000-\$99,999	8.8%
Over 65 years	8.3%	Hispanic	97.3%	Average Household Size	2.92	\$100,000-\$149,999	6.2%
		Other	0.0%			\$150,000 and above	3.1%

Notes: Reference: American Community Survey 2014-2019 (United States Census Bureau, 2021)

5.3.5 Land Uses within Service Area

CWA coordinated with land use planners within the City in developing the projections of future development. The following is a brief summary of the nature and status of the City’s larger development projects.

5.3.5.1 La Entrada

The La Entrada Specific Plan, approximately 2,200 acres on the eastern edge of the City, south of Interstate 10 and northeast of the All American Canal, provides for approximately 7,800 residential units, 135 acres of mixed-use, elementary schools, 343.8 acres of parks, multi- purpose trails and 556.9 acres of open space. The La Entrada development has completed environmental review and is undergoing City development review. Construction is expected to follow the City’s approval process.

5.3.5.2 Coachella Vineyard

The Coachella Vineyard Specific Plan provides for 807 units in the southeastern area of the City. The Coachella Vineyard development is currently undeveloped and located east of State Route 86.

5.3.5.3 Brandenburg Butters Specific Plan

The Brandenburg Butters project provides for 71.5 acres of commercial uses and 1,381 dwelling units. The project has been approved by City Council and Planning Commission; however, no units have been constructed to date. This development is centrally located, east of State Route 86.

5.3.5.4 Eagle Falls

The Eagle Falls Specific Plan resides in both Coachella (60 acres) and Indio (30 acres) on a 90-acre site. The project includes 295 units, of which 202 units will be within the City of Coachella. The Specific Plan provides for a gated golf course community and is included as a part of the Cabazon Band of Mission Indians Fantasy Springs Master Plan. Rough grading has been completed for the Eagle Falls development; however, no units have been constructed to date.

5.3.5.5 Shadow View

The Shadow View Specific Plan provides for a single-family residential community consisting of 1,600 dwelling units on 380 acres, a mixed-use commercial center on 100 acres, and a 37-acre park. The commercial site has a residential overlay that provides an option to construct up to 1,000 high-density residential units. The Shadow View development has been approved by City Council.

5.4 Water Use Characterization

This section describes the current and projected water uses within CWA's service area.

5.4.1 Non-Potable Versus Potable Water Use

CWA produces all of its water supplies from the Coachella Valley Groundwater Basin, specifically, the East Indio Subbasin, which is continuously replenished at the local and regional level pursuant to a variety of water supply projects and programs. The East Indio Subbasin is regionally managed by CVWD, CWA, and IWA within the jurisdictional boundaries.

Currently, CWA does not produce or use recycled water or raw water in its service area; however, the City is considering a recycled water system in the future. It should be noted that raw water, via the Coachella Canal, is used within the City limits, but by the agricultural community and not as a part of the CWA system.

Per CVWD Ordinance No. 1428, CWA has opportunity to receive canal water for additional potable water supply when available. As the water becomes available, CWA may work with CVWD to pursue those opportunities to supplement its water portfolio.

5.4.2 Past, Current, and Projected Water Use by Sector

CWA maintains records of total water production and water consumed by its customers. Water use is tracked by customer type, using CWA's billing system.

The difference between water production and metered water deliveries (billed to customers) is defined as non-revenue water. Non-revenue water includes authorized non-billed use (such as fire fighting or flushing), and it includes losses from the system. CWA has completed annual water audits using the American Water Works Association (AWWA) Water Audit Software. The results are summarized in Table 5-5. The completed audits are included in Appendix G of the RUWMP.

Table 5-5. DWR 4-4R 12 Month Water Loss Audit Reporting

Report Period Start Date		Volume of Water Loss (AFY)
MM	YYYY	
01	2015	538
01	2016	103
01	2017	704
01	2018	239
01	2019	254

CWA's water use for the past five years is summarized in Table 5-6.

Table 5-6. DWR 4-1R Actual Demands for Water (AFY)

Use Type	Additional Description	Level of Treatment When Delivered	2016	2017	2018	2019	2020
Single Family		Drinking Water	4,236	3,855	4,022	3,860	4,283
Multi-Family		Drinking Water	174	125	704	609	693
Commercial / Institutional		Drinking Water	967	807	723	755	779
Industrial		Drinking Water	6	16	-	-	-
Landscape		Drinking Water	698	1,106	583	1,065	1,087
Other		Drinking Water	37	118	12	97	62
Other	Non-Revenue	Drinking Water	119	790	1,092	417	312
Total			6,236	6,818	7,136	6,802	7,216

CWA is participating in the update of the Indio Subbasin Alternate Plan Update being prepared to meet requirement of the Sustainable Groundwater Management Act (SGMA). The participating agencies coordinated efforts with demand projections being prepared for the Indio Subbasin Alternative Plan and the Mission Creek Subbasin Alternative Plan. The demand projection approach included several steps:

- The projections were based on the regional growth forecast prepared by the Southern California Association of Governments (SCAG) as part of their regional transportation plan. SCAG's most recent transportation plan is referred to as Connect SoCal.⁴ SCAG gathered input from cities and counties throughout Southern California about expected growth and development for the next 25 years and incorporated the land use designations in each jurisdiction's General Plan. The

⁴ Information about SoCal Connect is available at <https://scag.ca.gov/connect-social>

SCAG analysis includes estimates of population, households, and employment in each Traffic Analysis Zone (TAZ) in their study area.⁵

- Additional analysis of vacancy rates was performed to estimated baseline and projected housing units for the study area, including housing units used by seasonal residents and other part-time uses.
- Future estimates of employment were used to drive future growth in Commercial, Industrial, and Institutional (CII) demands
- Five years of customer billing data were used to develop unit demand factors. These factors have units of gallons per housing unit for residential and landscape uses and gallons per employee for CII uses.
- Water losses were estimated using water loss audits
- Demands were adjusted for two types of conservation savings:
 - Indoor passive conservation savings from the natural replacement of indoor devices
 - Outdoor conservation savings from the implementation of the 2015 Model Water Efficiency Landscape Ordinance (MWELO) and agency-specific requirements for future developments.

The projected demands are summarized in Table 5-7.

Table 5-7. DWR 4-2R Projected Demands for Water

Use Type	Additional Description	Projected Water Use (AFY)				
		2025	2030	2035	2040	2045
Single Family		7,072	8,364	9,575	10,840	11,785
Multi-Family		1,005	1,189	1,422	1,799	2,342
Commercial / Industrial / Institutional		1,181	1,370	1,558	1,674	1,790
Landscape		935	1,096	1,257	1,449	1,641
Other		22	26	31	36	41
Losses		654	774	888	1,021	1,147
Total		10,869	12,819	14,731	16,819	18,746

Demand projections prepared for this plan considered the incorporation of codes and standards. The draft Indio Subbasin Alternative Plan Update included modeling of anticipated future water savings due to fixture replacements. The analysis included indoor savings related to toilets, showerheads, dishwashers, clothes washers, and urinals (categorized as indoor water use) as well as outdoor water use. Indoor conservation is mainly a result of government mandated water efficiency requirements for fixtures, defined as “passive savings”. The model considers these mandates and the average useful life and replacement rates for each type of fixture based on standard industry estimates and plumbing fixture saturation studies. It assumes that all new construction complies with the plumbing codes in effect at that time and that when a device is replaced, the new device is also in compliance with the current plumbing codes. Estimated frequency of use for each type of fixture as determined by the Water Research Foundation and American Water Works

⁵ An overview of the demographic and growth forecast is available at https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf?1606001579.

Association Research Foundation were multiplied by the number of housing units to produce the total indoor passive conservation savings.

Anticipated outdoor water use savings were based on the implementation of the California Model Water Efficiency Landscape Ordinance (MWELo) which is the standard for outdoor water conservation for the state. The resulting water savings from the MWELo are estimated using an Evapotranspiration Adjustment Factor (ETAF) which adjusts the reference ET for plant requirements and irrigation efficiency. No savings were assumed from special landscape areas, such as recreational areas, as these are allotted extra water use as well as existing landscapes as these savings are not considered passive since there are incentives under conservation programs.

The anticipated savings due to these measures are summarized in Table 5-8. These savings have been incorporated into the water demand projections presented in Table 5-7.

Table 5-8. Anticipated Water Savings Due to Conservation (AFY)

	2020	2025	2030	2035	2040	2045
Indoor Passive Savings	118	345	528	695	873	1,040
Outdoor Passive Savings	326	600	867	1,125	1,395	1,630
Total Passive Savings	444	945	1,395	1,820	2,268	2,670

The current and projected future gross water use are summarized in Table 5-9.

Table 5-9. DWR 4-3R Total Gross Water Use (AFY)

	2020	2020	2030	2035	2040	2045
Potable and Raw Water From DWR Table 4-1R and 4-2R	7,216	10,869	12,819	14,731	16,819	18,746
Recycled Water Demand From DWR Table 6-4R	0	0	0	0	0	0
Total Water Use	7,216	10,869	12,819	14,731	16,819	18,746

5.4.3 Worksheets and Reporting Tables

CWA has completed the required UWMP submittal tables and included them in Appendix D of this RUWMP.

5.4.4 Water Use for Lower Income Households

Lower income households are those with less than 80 percent of the area’s median household income, adjusted for family size. The City will strive to meet their new construction goals of the Regional Housing Needs Allocation. The demand for lower income households is included in the water use projections in Table 5-7.

5.4.5 Climate Change Considerations

Potential impacts of climate change on water use in the region are discussed in Chapter 3 of the RUWMP.

5.5 SB X7-7 Baseline and Targets

CWA's methods for calculating baseline and target water consumption values are described in this section. This section also documents CWA's compliance with its 2020 Urban Water Use Target.

5.5.1 Wholesale Suppliers

CWA is not a wholesale supplier, and therefore this section is not applicable.

5.5.2 SB X7-7 Forms and Tables

CWA has completed the SB X7-7 2020 Compliance Form and included it in Appendix E.

5.5.3 Baseline and Target Calculations for 2020 UWMPs

CWA calculated its baselines and targets for its 2010 and 2015 UWMPs, and CWA has not re-calculated its baselines or targets.

5.5.4 Service Area Population and Gross Water Use

CWA has calculated its 2020 service area population using the DWR Population Tool. CWA uploaded a GIS boundary of its water service area (WSA) to the DWR Population Tool. The tool used the census data in 2010 and the number of connections in 2010 and 2020 to estimate the population in 2020.

CWA's gross water use was determined from the City's annual production and storage records. Meter adjustments, exported water, distribution system storage, recycled water, and process water were not applicable to CWA's distribution system.

5.5.5 2020 Compliance Daily Per-Capita Water Use (GPCD)

CWA's average use during the baseline period and confirmed 2020 target are shown in Table 5-10.

Table 5-10. DWR 5-1R Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline Use (GPCD)	Confirmed 2020 Target (GPCD)
10-15 Year	2001	2010	208	200
5 Year	2006	2010	210	
*All values are in Gallons per Capita per Day (GPCD)				

CWA's compliance with the 2020 target is shown in Table 5-11.

Table 5-11. DWR 5-2R 2020 Compliance

Actual 2020 Use (GPCD)	Optional Adjustments		2020 Confirmed Target (GPCD)	Supplier Achieved Targeted Reduction in 2020
	2020 Total Adjustments	Adjusted 2020 GPCD		
141	0	141	200	Yes
*All values are in Gallons per Capita per Day (GPCD)				

5.5.6 Regional Alliance

CWA is not participating in a regional alliance and is documenting compliance with SB X7-7 as an individual agency.

5.6 Water Supply Characterization

CWA produces all of its water supplies from the Coachella Valley Groundwater Basin, specifically, the East Indio Subbasin, which is continuously replenished at the local and regional level pursuant to a variety of water supply projects and programs.

5.6.1 Water Supply Analysis Overview

The Coachella Valley groundwater basin area serves as an expansive conjunctive use resource that is capable of ensuring a sufficient and sustainable water supply to serve existing uses and projected growth during normal, single-dry and multiple-dry years over an extended planning horizon, currently established as the year 2045. Not only does the basin contain vast reserves of local groundwater (approximately 30 million AF at 1,000-foot depth), it has substantial available storage space that has been utilized and will continue to be utilized to store millions of acre-feet of supplemental supplies that become available during normal and above-normal years. Those surplus supplies are recharged to the basin for later use during dry periods.

Further discussion of regional water supply sources is presented in Chapter 3 of the RUWMP.

5.6.2 Supply Characterization

This discussion includes the types of water supply considered by DWR.

5.6.2.1 Purchased or Imported Water

CWA does not use purchased or imported water. As described in Chapter 3 of the RUWMP, imported water is used in the region for groundwater replenishment.

5.6.2.2 Groundwater

Groundwater is the principal source of municipal water supply in the Coachella Valley. CWA produces water from the Eastern Indio Subbasin. Discussion of on-going efforts to manage the Indio Subbasin are presented in Chapter 3 of the RUWMP.

CWA’s water quality meets Maximum Contaminant Level (MCL) for monitored primary, secondary, or microbial contaminants. The City’s water quality also meets most secondary MCL’s known as Public Health Goals (PHG’s). PHG’s are set by the California EPA and are the level of contaminants in drinking water below which there is no known or expected health risk.

There are two major developments within the City’s SOI that are scheduled to be built on the east side of the San Andreas Fault, which lies outside of the Indio Subbasin. These developments would lie within the Fargo Canyon Subarea of the Desert Hot Springs Subbasin. Within this area groundwater is generally of poor quality (TDS >1,000 mg/L) and the native yield is limited.

Groundwater supply for developments within the Fargo Canyon Subarea of the Desert Hot Springs Subbasin will most likely have come from new wells added on the westerly side of the San Andreas Fault due to the groundwater quality issues on the east side. While wellhead or centralized treatment for these contaminants is possible it may or may not prove to be economical for CWA. Further analysis of this would be required to make a determination on where or how to proceed.

CWA’s total groundwater production for the past five years is presented in Table 5-12.

Table 5-12. DWR 6-1R Groundwater Volume Pumped (AFY)

Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Indio Subbasin	6,236	6,818	7,136	6,802	7,216
Total		6,236	6,818	7,136	6,802	7,216

5.6.2.3 Surface Water

CWA does not use self-supplied surface water as part of its water supply. However, that could change in the future and will be further evaluated at that time.

5.6.2.4 Stormwater

CWA does not use, or plan to use, local stormwater runoff as part of its water supply. However, that could change in the future and will be further evaluated at that time.

5.6.2.5 Wastewater and Recycled Water

The City manages the Coachella Sanitary District that operates a 4.5-MGD secondary treatment wastewater facility. In addition, the City is considering plans to develop a recycled water system in the future; however, the City does not have infrastructure in place to recycle water.

In 2010, the City upgraded the capacity of the Coachella Water Reclamation Facility to 4.5 MGD, and current average daily discharge is approximately 2.7 MGD. The plant remains a full secondary treatment facility with oxidation ditches for denitrification. Waste activated sludge is sent to drying beds for dewatering and then hauled away to landfill for alternate daily cover material.

Information about wastewater collected and treated is presented in Table 5-13 and Table 5-14.

Table 5-13. DWR 6-2R Wastewater Collected within Service Area in 2020

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated	Wastewater Volume Collected from UWMP Service Area in 2020 (AFY)	Name of Wastewater Agency Receiving Collected Wastewater	Wastewater Treatment Plant Name	Wastewater Treatment Plant Located within UWMP Area	WWTP Operation Contracted to a Third Party
Coachella Sanitary District	Metered	3,105	Coachella Sanitary District	Avenue 54 Wastewater Treatment Plant	Yes	No
Total		3,105				

Table 5-14. DWR 6-3R Wastewater Treatment and Discharge within Service Area in 2020

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number	Method of Disposal	Plant Treats Wastewater Generated Outside the Service Area	Treatment Level	2020 Volumes (AFY)				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Avenue 54 Wastewater Treatment Plant	Coachella Valley Stormwater Channel	Stormwater channel	CA0104493 – 001 7A330104012	River or creek outfall	No	Secondary	3,105	3,105	0	0	0
Total											

The City currently does not have recycled water use within its service area. While the City plans to use recycled water in some capacity in the future, additional information related to a potential recycled water system is being developed as part of regional planning efforts.

Potential uses of recycled water could be implemented, including non-potable water systems for larger developments. In addition, requiring new developments to include a “non-potable” water distribution system could help offset much of the costs associated with delivering recycled water system-wide.

5.6.2.6 Desalinated Water Opportunities

CWA does not anticipate the future use of desalinated water within its service area, as the backbone facilities and infrastructure needed for desalination are not economically feasible.

5.6.2.7 Water Exchanges and Transfers

Water transfers involve the temporary or permanent sale or lease of a water right or contractual water supply between willing parties. Water can be made available for transfer from other parties through a variety of mechanisms.

CWA is exploring opportunities to exchange non-potable groundwater for water from the Coachella Canal. Certain groundwater in the East Coachella Valley has higher levels of dissolved solids and fluoride, and thus is not suitable for potable purposes. However, that supply may be suitable for irrigation and other non-potable uses. In turn, Canal water that is currently used only for irrigation purposes could be treated for potable use or left untreated and used for non-potable urban uses.

In September 2009 CVWD and the City signed a Memorandum of Understanding (2009 MOU) to assist in ensuring a sufficient and reliable water supply for development projects within the City and a major portion of its sphere of influence (SOI). Under the terms of the 2009 MOU, various means are identified by which the City can mitigate impacts associated with development projects, such as:

- Source Substitution not identified in the current Coachella Valley Water Management Plan (CVWMP). For example, using recycled wastewater effluent of the City’s Wastewater Treatment Plant for landscape irrigation instead of using groundwater.
- Acquire supplemental water supplies sufficient to offset the impacts of new water demands within the City or supplied by the City’s water system.
- Participate in funding CVWD’s acquisition of supplemental water supplies sufficient to offset the impacts of new water demands approved by the City or supplied by the City’s water system.

In February 2013, CVWD and the City executed an additional Memorandum of Understanding (2013 MOU) regarding implementation of the 2009 MOU.

5.6.2.8 Future Water Projects

CWA understands the need to develop additional sources of supply to meet demands associated with projected growth. CWA continues to work with CVWD and other regional partners on potential projects to increase water supply. CWA will continue to evaluate the use of Canal Water as a source substitution for drinking water supplies obtained from groundwater.

Per CVWD Ordinance No. 1428, CWA has the opportunity to receive canal water for additional potable water supply when available. As the water becomes available, CWA may pursue those opportunities to supplement its water portfolio. As part of its planning process, the City will continue to design water system improvements to enhance conservation, identify additional water supplies and potential source substitutions, and enhance local groundwater recharge.

5.6.2.9 Summary of Existing and Planned Sources of Water

CWA currently receives 100 percent of its water supply from groundwater, and does not currently participate in water recycling, water desalination, water exchanges or transfers, or purchase imported water supplies.

In addition, the groundwater quality is high and currently only receives chlorine disinfection. No future large scale projects are proposed that would increase CWA's current supply, including recycled water.

CWA's water supplies for 2020 and projected water supplies through 2045 are shown in Table 5-15 and Table 5-16.

Table 5-15. DWR 6-8R Actual Water Supplies

Water Supply	Additional Detail on Water Supply	2020	
		Actual Volume (AFY)	Water Quality
Groundwater (not desalinated)	Indio Subbasin	7,216	Drinking Water
Total		7,216	

Table 5-16. DWR 6-9 R Projected Water Supplies

Water Supply	Additional Detail on Water Supply	Projected Water Supply (AFY)				
		2025	2030	2035	2040	2045
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Groundwater (not desalinated)	Indio Subbasin	10,869	12,819	14,731	16,819	18,746
Total		10,869	12,819	14,731	16,819	18,746

5.6.2.10 Special Conditions

The potential impacts of climate change on regional water supplies are discussed in Chapter 3 of the RUWMP.

5.6.3 Submittal Tables Using Optional Planning Tool

Because CWA's supply availability does not vary seasonally during a typical year, CWA has not completed the optional DWR planning tool.

5.6.4 Energy Use

CWA has compiled data to document the energy used for water management operations. CWA used the Total Utility Approach to estimate the energy intensity of its water management operations.

The data are summarized in Table 5-17.

Table 5-17. DWR O-1B Energy Intensity Reporting

Table O-1B: Recommended Energy Reporting - Total Utility Approach				
Enter Start Date for Reporting Period	1/1/20	Urban Water Supplier Operational Control		
End Date	12/31/20			
Is upstream embedded in the values reported?	No	Sum of All Water Management Processes	Non-Consequential Hydropower	
<i>Water Volume Units Used</i>	<i>AFY</i>	Total Utility	Hydropower	Net Utility
<i>Volume of Water Entering Process (volume unit)</i>		7,216	0	7,216
<i>Energy Consumed (kWh)</i>		3,772,520	0	3,772,520
<i>Energy Intensity (kWh/volume)</i>		522.8	0.0	522.8
Quantity of Self-Generated Renewable Energy				
	0	kWh		
Data Quality (<i>Estimate, Metered Data, Combination of Estimates and Metered Data</i>)				
<i>Combination of Estimates and Metered Data</i>				
Data Quality Narrative				
Energy use data was obtained from electricity consumption records maintained by the agency.				
Narrative				
The agency uses energy for groundwater production from wells, pumping at booster stations from lower pressure zones to higher pressure zones, and treatment processes.				

5.7 Water Service Reliability and Drought Risk Assessment

Reliability is a measure of a water system’s expected success in managing water shortages. In addition to climate, other factors that can cause water supply shortages are natural disaster, such as earthquakes, chemical spills, energy outages and water quality issues.

5.7.1 Reliability Overview

CWA’s groundwater supply has historically been able to meet demands during dry periods.

5.7.2 Water Service Reliability Assessment

The reliability of the groundwater supply is dependent on reliable sources to replenish water extracted from the groundwater basin. To ensure a safe and reliable supply, CWA participates in the East Indio Subbasin recharge plan with CVWD. In addition to recharging the groundwater basin, CWA is also exploring exchange and transfer opportunities to minimize non-potable uses for water withdrawn from the groundwater basin. CVWD replenishes East Indio Subbasin groundwater supplies with Colorado River

water. Participating agencies’ efforts in regional management of the groundwater basin have helped address long-term overdraft of the basin; therefore, water supply reliability is expected to be good and fully reliable.

Further discussion of constraints on local water resources is included in Chapter 3 of the RUWMP.

Per UWMP requirements, CWA has evaluated reliability for an average year, single dry year, and multiple dry year periods. The average year represents a year or an averaged range of years that most closely represents the typical water supply available to CWA. The UWMP Act uses the term “normal” conditions. CWA uses the long-term average supply amounts, as presented herein, to represent average year conditions.

The single dry year is the year that represents the lowest water supply available to CWA. For this UWMP, 2014 represents that the single dry year as a worst case with strict water conservation measures in place. With regards to State Water Project (SWP) water, only 5 percent of Table A water allocation were delivered in 2014.

The multiple dry year period is the period that represents the lowest average water supply availability to CWA for a consecutive multi year period (five years or more). This is generally considered to be the lowest average runoff for a consecutive multiple year period (five years or more) for a watershed since 1903. This UWMP uses 2013 through 2017 as the multiple dry year period.

CWA relies on one source, groundwater, to meet demand. CWA’s ability to meet demands during the type of year scenarios described above is determined by an analysis of the available water supplies within CWA’s water service area in each scenario. Considering the groundwater basin management efforts presented throughout this RUWMP, the historical groundwater supply availability during these scenarios is assumed to be fully reliable and an accurate assumption for future reliability.

A summary of the basis of water year data is presented in Table 5-18.

Table 5-18. DWR 7-1R Basis of Water Year Data

Year Type	Base Year	Available Supply if Year Type Repeats
		Percent of Average Supply
Average Year	2020	100%
Single-Dry Year	2014	100%
Consecutive Dry Years 1st Year	2012	100%
Consecutive Dry Years 2nd Year	2013	100%
Consecutive Dry Years 3rd Year	2014	100%
Consecutive Dry Years 4th Year	2015	100%
Consecutive Dry Years 5th Year	2016	100%

The Indio Subbasin storage will be used in dry years to support potential differences between demands and supply. The groundwater basin has a capacity of approximately 28.8 million acre-feet. It is capable of meeting the water demands of CWA for extended periods during normal, single-dry and multiple-dry year conditions.

The projected supply and demand during a normal year are shown in Table 5-19.

Table 5-19. DWR 7-2R Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY) From DWR Table 6-9R	10,869	12,819	14,731	16,819	18,746
Demand Totals (AFY) From DWR Table 4-3R	10,869	12,819	14,731	16,819	18,746
Difference	0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

The projected supply and demand during a single dry year are shown in Table 5-20. CWA's demands in single dry years are projected to be similar to average year demands since CWA's local water supplies (groundwater) is 100 percent reliable and groundwater production is driven by demand.

Table 5-20. DWR 7-3R Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY)	10,869	12,819	14,731	16,819	18,746
Demand Totals (AFY)	10,869	12,819	14,731	16,819	18,746
Difference	0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

A comparison of supply and demand during multiple dry years is shown in Table 5-21. CWA's demands in multiple dry years are projected to be similar to average year demands since CWA's local water supplies (groundwater) is 100 percent reliable and supply is driven by demand.

Table 5-21. DWR 7-4R Multiple Dry Years Supply and Demand Comparison

		2025	2030	2035	2040	2045
First Year	Supply Totals (AFY)	10,869	12,819	14,731	16,819	18,746
	Demand Totals (AFY)	10,869	12,819	14,731	16,819	18,746
Difference		0	0	0	0	0
Second Year	Supply Totals (AFY)	10,869	12,819	14,731	16,819	18,746
	Demand Totals (AFY)	10,869	12,819	14,731	16,819	18,746
Difference		0	0	0	0	0
Third Year	Supply Totals (AFY)	10,869	12,819	14,731	16,819	18,746
	Demand Totals (AFY)	10,869	12,819	14,731	16,819	18,746
Difference		0	0	0	0	0
Fourth Year	Supply Totals (AFY)	10,869	12,819	14,731	16,819	18,746
	Demand Totals (AFY)	10,869	12,819	14,731	16,819	18,746
Difference		0	0	0	0	0
Fifth Year	Supply Totals (AFY)	10,869	12,819	14,731	16,819	18,746
	Demand Totals (AFY)	10,869	12,819	14,731	16,819	18,746
Difference		0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.						

Agencies in the region have many programs to maximize the water resources available to CWA, including but not limited to recharge of the basin using Colorado River and SWP supplies, direct use and recharge of recycled water, conversion of groundwater uses to Canal water and comprehensive water conservation practices such as tiered water rates, landscaping ordinances, outreach and education. The groundwater replenishment programs establish a comprehensive and managed effort to reduce and eliminate overuse of local groundwater resources. These programs allow the agencies to maintain the groundwater basin as the primary water supply and to recharge the groundwater basin as other supplies are available and needed to meet existing and projected demands within its overall service area, including the City and the City's sphere of influence.

Additionally, CWA has committed sufficient resources to further implement the primary elements of the regional planning efforts, including source substitution, water conservation, and purchases of additional water supplies.

5.7.3 Drought Risk Assessment

A new reporting requirement for the 2020 UWMP is a five-year Drought Risk Assessment (DRA). The DRA is based on projections of demand and available supply for the next five years.

Demands are expected to increase to the projected demands for 2025. It is expected that conservation messaging and programs will prevent any significant increase in demands due to dry conditions. The groundwater supply is reliable for a five-year dry period as the volume in storage can be drawn down during a dry period.

The results of the DRA are summarized in Table 5-22.

DRAFT

Table 5-22. DWR 7-5 Five-Year Drought Risk Assessment

2021	Gross Water Use (AFY)	7,947
	Total Supplies (AFY)	7,947
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2022	Gross Water Use (AFY)	8,677
	Total Supplies (AFY)	8,677
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2023	Gross Water Use (AFY)	9,408
	Total Supplies (AFY)	9,408
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2024	Gross Water Use (AFY)	10,138
	Total Supplies (AFY)	10,138
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2025	Gross Water Use (AFY)	10,869
	Total Supplies (AFY)	10,869
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
<p>Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.</p>		

5.8 Water Shortage Contingency Plan

CWA has developed a Water Shortage Contingency Plan (WSCP) to help manage potential future water shortages. The WSCP is being adopted separately from the RUWMP and may be modified as needed based on changing conditions. The WSCP is an attachment to this RUWMP.

5.9 Demand Management Measures

The goal of the Demand Management Measures (DMM) section is to provide a comprehensive description of the water conservation programs that the City of Coachella has implemented, is currently implementing, and plans to implement in order to encourage efficient water use. The City of Coachella is committed to conservation as a means to provide a sustainable supply of water to its service area, and plans to continue its conservation program during the next five years. The City's DMM implementation efforts are described in the following sections.

5.9.1 Demand Management Measures for Wholesale Suppliers

CWA is not a wholesale supplier, and therefore this section is not applicable.

5.9.2 Existing Demand Management Measures for Retail

The City recognizes water use efficiency as an integral component of its current and future water strategy for the service area. Demand Management Measures (DMM) refer to policies, programs, rules, regulation and ordinances, and the use of devices, equipment and facilities that, over the long term, have been generally justified and accepted by the industry as providing a "reliable" reduction in water demand. This means providing education, tools, and incentives to help the homeowner, apartment owner and business owner reduce the amount of water used on their property. Demand management is as important to insuring water supply reliability as is providing a new water supply. The City of Coachella has aggressively pursued conservation in an effort to reduce demand.

The following DMMs include technologies and methodologies that have been sufficiently documented in multiple demonstration projects that result in more efficient water use and conservation.

5.9.2.1 Water Waste Prevention Ordinances

The City has a prohibition for wasting water in Municipal Code Section 13.03.044 which states it is unlawful for any person to willfully or neglectfully water waste in any manner whatsoever. In addition, the City has adopted CVAG's Landscape Ordinance which has specific penalties for water waste.

The measurement of success for this program is a reduction in water waste violations in the future. Additionally, the City has mandatory prohibitions on water wasting that they enforce during a water shortage. These prohibitions include voluntary and mandatory provisions, audits, and fines than can be imposed.

5.9.2.2 Metering

The City bills its customers according to meter consumption. In addition, the City encourages the installation of dedicated landscape meters, which allows the City to recommend the appropriate irrigation schedules through future landscape programs.

Meter calibration and periodic replacement help verify that customers are paying for all of the water they consume, and therefore encourages conservation. The City replaced all existing meters prior to 2000 to upgrade the older meters to obtain an accurate measure of water usage. In 2015, the City completed the process of metering its past unmetered accounts including parks and other accounts, which has further enhanced the effectiveness of measuring consumption.

5.9.2.3 Conservation Pricing

The City has a tiered rate structure for water service within its service area. The City's water rates include a variable commodity charge (monthly charge based on the amount of water used or consumed by the customer in hundreds of cubic feet (HCF)) and a fixed metered account charge (basic monthly rate by meter size). The rates have been designed to recover the full cost of water service in the commodity charge, while discouraging wasteful water use, and will continue to be implemented into the future. Tiered rates are designed to incentivize customers to be proactive in reducing water use.

5.9.2.4 Public Education and Outreach

The City recognizes the continued need for a public information program to maintain and increase the public's awareness of water and the need to use it wisely. The City promotes water conservation and other resources.

The City distributes public information through bill inserts, brochures, and community events. The City also has the opportunity to provide public information on conservation measures through television advertising on public access channel in conjunction with the City Council meeting broadcasts. The City also maintains a web page, www.conservcoachella.com, which provides water conservation information, ideas, and frequently asked questions. The City will continue to work on providing public information and materials to remind the public about water and other resource issues, and will track commentary regarding the information provided. There is no reliable method to quantify the savings of this management measure; however, the City will monitor the number of public announcements, television advertisements, brochures and bill inserts distributed throughout the service area. An increase in distribution of materials will indicate heightened public water conservation awareness and may correlate with decrease water demand.

The City supports school education programs provided to the schools within the City. The education programs include water conservation, water quality and pollution prevention. The program has provided educational programs predominately for elementary age children throughout the service area. School education helps future water users realize that water in the State is a precious commodity that cannot be taken for granted. The program educates school children about where water comes from, how it is used, that it is a precious resource, and ways to conserve water. The children are also taught about the importance of recycled water, where it comes from, and how it is used.

5.9.2.5 Programs to Assess and Manage Distribution System Real Losses

The City generally performs system water audits on an as-needed basis. Although leak and/or line break repairs are performed expediently (within 24 hours) by the City, no records of these activities, including system audits or leak detection program data are available.

The City does monitor the difference between the water pumped into the distribution system compared to the amount billed annually, which is considered "non-revenue" water. Non-revenue water may be attributed to "apparent losses" or "real losses." Apparent losses are paper losses that occur in utility operations due to customer meter inaccuracies, billing system data errors and unauthorized consumption. In other words, this is water that is consumed but is not properly measured, accounted or paid for. Real losses are the physical losses of water from the distribution system, including leakage. These losses inflate production costs and stress water resources since they represent water that is extracted and treated, yet never reaches beneficial use. Real losses also include other events causing water to be withdrawn from the system and not measured, such as hydrant testing and flushing, street cleaning, new construction line draining and/or filling and draining and flushing, and firefighting.

5.9.2.6 Water Conservation Program Coordination and Staffing Support

The City's Utilities General Manager serves the City as its water conservation coordinator along with the staff Environmental/Regulatory Program Manager. They work closely with agencies in the region, particularly through the Coachella Valley Regional Water Management Group (CVRWMG) and CV Watercounts, to implement and provide successful execution of water conservation programs in the City.

The City continues to investigate Federal, State, and local funding to develop new programs throughout its service area.

5.9.2.7 Other Demand Management Measures

The City of Coachella has developed several other demand management measures to support consumption reduction and promote efficient water use. They are described in the following subsections.

5.9.2.8 Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers

The City conducts water audits at the request of water customers. The City has identified its largest water users and work with these users in hopes of developing a site-specific water conservation program. The City believes that identifying and reducing water uses of their largest water consumers provides the largest benefit to the City.

5.9.2.9 Residential Plumbing Retrofit

The City has adopted the latest version of the Uniform Building Code (UBC), which requires the installation of water efficient fixtures. The City, through the Redevelopment Agency, provides assistance for low-income families to retrofit older houses with newer water efficient fixtures. Measuring reductions in water usage from implementation of the UBC is not achievable.

5.9.2.10 Large Landscape Conservation Programs and Incentives

Typically, the large landscape areas such as golf courses and large common areas are required to provide landscape irrigation with non-potable water such as Canal water, non-potable groundwater, or recycled water and will not be allowed to connect to the City's domestic water system, unless no other water source is available. In addition to negotiating agreements for additional Canal water to serve large landscapes, the City negotiated additional rights to Canal water supplies that may be treated to drinking water standards with the implementation of a new treatment facility. The City does not currently operate a tertiary-treatment plant and does not have infrastructure in place to deliver recycled water.

In 2000, the City adopted a landscape ordinance for single family and multi-family residences and large landscape areas. The new ordinance encourages limited use of turf areas and reduces landscape irrigation consumption by mandating high efficiency irrigation systems and low water use landscaping. The City conducts plan checking for compliance with the landscape ordinance prior to the construction of new and/or rehabilitated landscape sites.

Further, in response to the Water Conservation in Landscaping Act of 2006 (Assembly Bill 1881, Laird), requiring cities and counties to adopt water conservation ordinances by January 1, 2010, CVWD worked with the Coachella Valley Association of Governments (CVAG), Coachella Valley cities, Riverside County, other water agencies, and the Building Industry Association to develop a Regional Landscape Water Conservation Ordinance. The Regional Landscape Ordinance not only meets the state requirements, but also is tailored specifically to the unique climate and water conservation needs of the Coachella Valley, including the City of Coachella. The City has adopted the model landscape ordinance by CVAG.

In addition, the City of Coachella Utilities Department offers a turf removal rebate program for residents who want to reduce outdoor water use by converting their front lawn to desert-friendly landscaping. The program aims to provide examples of water wise planting alternatives to turf in parkways and front yards. Residents who chose to replace their grass with beautiful, desert-friendly landscaping can get up to a \$1,000 rebate.

Furthermore, the City instituted a Smart Controller Rebate Program. The program is designed to financially assist water users in reducing landscape irrigation water consumption by purchasing an advanced irrigation controller capable of synchronizing their landscape irrigation schedules with seasonal variations in local reference evapotranspiration (ET_o) rates. These "smart" irrigation clocks reprogram themselves according

to periodic variations in ETo after the initial calibrating program has been professionally installed. The City will perform installation and follow-up work for all customers at a reduced rate of \$50.00.

5.9.2.11 Conservation Programs for Commercial, Industrial, and Institutional Accounts

The amount of water used in commercial, industrial and institutional (CII) within the City is a small percentage of the overall water usage. CII user demand makes up approximately 15 percent of the City's total water deliveries. The City does, however, incorporate into its planning review process, a review of water uses for a specific development and how it has incorporated water conservation measures. This is an ongoing procedure as part of the development approval process. A majority of existing passive conservation by CII customers is due to current plumbing codes.

5.9.2.12 Residential ULFT Replacement Programs

The City has adopted the Uniform Building Code that requires ultra-low flush toilets (ULFT) (1.2 gallons per flush) be used in all new construction. Most of the population is projected into the future with new developments. These developments will be required to install ULFT toilets under current Building Code provisions. For existing houses, the City of Coachella is offering its single-family residence and multi-family residence the opportunity to receive a rebate of up to \$100 for exchanging a non-efficient toilet that uses 3.5 gallons per flush (GPF) for an ULFT that uses less than 1.2 GPF and is a qualifying WaterSense model. Currently toilets using 3.5 GPF or more account for roughly 26% of a home's indoor water use. The use of these WaterSense ULFT will not only conserve water but they also have the potential to reduce customer water and electric bill. To date, the City has successfully replaced several non-efficient toilets with the program. The City plans to continue the program into the foreseeable future.

5.9.3 Implementation

The City of Coachella is committed to conservation as a means to provide a sustainable supply of water to its service area, and plans to continue its conservation program during the next five years. The conservation program was initiated in 2012. The following represents the City's best understanding of the nature and extent of these programs over the past five years.

5.9.3.1 Water Waste Prevention Ordinance

As mentioned before, the measurement of success for this program is a reduction in water waste violations in the future. Since 2014, 444 water waste reports have been investigated by the City. Additionally, the City has mandatory prohibitions on water wasting that they enforce during a water shortage. These prohibitions include voluntary and mandatory provisions, audits, and fines that can be imposed.

5.9.3.2 Metering

One hundred percent of the City of Coachella's urban water customers are metered. The City completed the process of metering its past unmetered accounts including parks and other accounts, which has further enhanced the effectiveness of measuring consumption. Meter calibration and replacement insures that customers are paying for all of the water they consume, and therefore encourages conservation.

5.9.3.3 Conservation Pricing

The City implemented a tiered water rate system that went into effect for residential customers in mid-2010. While no study has been completed to verify its effectiveness, the City has seen a decline in water demand that can be partly attributed to conservation pricing.

5.9.3.4 Public Education and Outreach

There is no reliable method to quantify the savings of this management measure. The City has continued to promote public awareness of water consumption reduction in the past five years through several public

announcements, television advertisements, brochures and bill inserts distributed throughout the service area. The City’s increase in distribution of materials will indicate heightened public water conservation awareness and may correlate with decrease water demand.

CWA has seen reduced water consumption and notification of water waste. Furthermore, CWA recently implemented turf reduction program, smart irrigation controllers, ultra-low flow toilets and retrofit kits. A total of \$750,000 has been spent in four years and reduced water consumption by 223 million gallons.

5.9.3.5 Program to Assess and Manage Distribution System Real Loss

The City has completed the process of metering its past unmetered accounts including parks and other accounts, which has further enhanced the effectiveness of measuring consumption. The City’s efforts to meter its entire service area will help decrease the distribution system’s real loss.

5.9.3.6 Water Conservation Program Coordination and Staffing Report

The effectiveness of this demand management measure cannot be quantified and measured. Water Conservation Program coordinators and staff will continue to seek and implement water consumption reducing programs and investigate Federal, State, and local funding to develop new programs throughout the service area.

5.9.3.7 Other Demand Management Measures

The following table quantifies and summarizes each of the water conservation programs in the past five years.

Table 5-23. DMM Implementation Summary

Program	Completed Since Program Inception	Completed Since 2010
Residential Plumbing Retrofit	300	300
Turn Removal Rebate Program	135	135
Smart Controller Rebate Program	15	15
Residential ULFT Replacement Program	42	42

The City plans to continue implementing the programs described above and will continue to implement water conservation practices and enforce requirements of City ordinances to maintain lower than historic per capita water use. The City will continue to seek new water consumption reducing programs that benefit the Basin.

As funding becomes available, CWA will pursue additional conservation activities such as energy efficient appliances, customer portal, mobile application, and advance metering infrastructure.

5.9.4 Water Use Objectives (Future Requirements)

Updated water use objectives are being developed for water suppliers to meet the requirements of the CWC. The final water use objectives for CWA have not yet been determined. The DMMs described in this section are expected to align with CWA’s efforts to comply with these objectives when they are finalized.

5.10 Plan Adoption, Submittal, and Implementation

This section includes a discussion of CWA’s process for adopting, submitting, and implementing the RUWMP and CWA’s WSCP.

5.10.1 Inclusion of All 2020 Data

This UWMP presents data on a calendar year basis and includes data for the entire calendar year 2020.

5.10.2 Notice of Public Hearing

CWA serves water to the City of Coachella and sent notice to the City of Coachella and County of Riverside that it would be reviewing the UWMP and considering amendments to the Plan. This notice was sent at least 60 days prior to the public hearing. The recipients are identified in Table 5-24. A second notice was provided to these cities and counties with the date and time of the public hearing and the location where the draft report was available for review.

Table 5-24. DWR 10-1R Notification to Cities and Counties

City	60 Day Notice	Notice of Public Hearing
Coachella	Yes	Yes
County	60 Day Notice	Notice of Public Hearing
Riverside	Yes	Yes

The City provided notice to the public through its website and published announcements of the public hearing in the newspaper on two occasions before the hearing. Copies of the proof of publication are included in Appendix B.

5.10.3 Public Hearing and Adoption

The City held a public hearing on June 23, 2021 to hear public comment and consider adopting this RUWMP and CWA’s WSCP. As part of the public hearing, the City provided information on its baseline values, water use targets, and implementation plan required in the Water Conservation Act of 2009. The public hearing on the RUWMP and CWA’s WSCP took place before the adoption of the Plans, which allowed the City the opportunity to modify the RUWMP and CWA’s WSCP in response to public input before adoption. After the hearing, the Plans were adopted as prepared or as modified after the hearing.

The City’s adoption resolution for the RUWMP and CWA’s WSCP is included in Appendix H.

5.10.4 Plan Submittal

CWA will submit the RUWMP and CWA’s WSCP to DWR, the State Library, and cities and counties within 30 days after adoption. RUWMP submittal to DWR will be done electronically through WUEdata, an online submittal tool.

5.10.5 Public Availability

No later than 30 days after filing a copy of its Plan with DWR, the City will make the plan available for public review during normal business hours by placing a copy of the RUWMP and CWA’s WSCP at the front desk of the City’s office, and by posting the RUWMP and CWA’s WSCP on the City’s website for public viewing.

5.10.6 Notification to Public Utilities Commission

Because CWA is not regulated by the California Public Utilities Commission, this section is not applicable.

5.10.7 Amending an Adopted UWMP or Water Shortage Contingency Plan

If the City amends the adopted RUWMP or CWA's WSCP, each of the steps for notification, public hearing, adoption, and submittal will also be followed for the amended plan.

DRAFT

Chapter 6 Desert Water Agency

6.1 Introduction

The Desert Water Agency (DWA) collaborated with five other water supply agencies in the Coachella Valley to prepare the Coachella Valley Regional Urban Water Management Plan (RUWMP) to meet reporting requirements for 2020. This chapter presents information specific to DWA and its water use efficiency programs.

Updates to the California Water Code (CWC) for the 2020 reporting cycle are discussed in Chapter 1 of the RUWMP.

6.1.1 Chapter Organization

This chapter is organized into the sections recommended by the Guidebook prepared by the California Department of Water Resources (DWR).

- Sub-Chapter 1 provides an introduction to the chapter.
- Sub-Chapter 2 shows details about the preparation of this RUWMP.
- Sub-Chapter 3 presents information about the service area.
- Sub-Chapter 4 presents information about current and projected future water demands.
- Sub-Chapter 5 documents compliance with SB X7-7 through a reduction in per-capita water use.
- Sub-Chapter 6 presents the current and planned future water supplies.
- Sub-Chapter 7 assesses the reliability of supplies and presents a comparison of projected future supplies and demands.
- Sub-Chapter 8 discusses the Water Shortage Contingency Plan (WSCP) that will help guide actions in case of a future water shortage.
- Sub-Chapter 9 presents information about Demand Management Measures (DMMs) being implemented to encourage efficient water use.
- Sub-Chapter 10 presents information about the adoption and submittal process for this RUWMP and the WSCP.

6.1.2 UWMPs in Relation to Other Efforts

The related planning efforts by agencies in the Coachella Valley are described in Chapter 2 of the RUWMP.

6.1.3 UWMPs and Grant or Loan Eligibility

The CWC requires urban water suppliers to have a current UWMP, deemed sufficient at addressing the CWC requirements by DWR, on file with DWR in order for the urban water suppliers to be eligible for any water management grant or loan administered by DWR. In addition, the UWMP Act requires a retail water agency to meet its 2020 Compliance Urban Water Use Target and report compliance in the 2020 UWMP.

6.1.4 Demonstration of Consistency with the Delta Plan

The participating agencies' approach to demonstrating reduced reliance on the Delta is discussed in Chapter 3 of the RUWMP.

6.2 Plan Preparation

This section provides information on DWA’s process for developing the RUWMP, including efforts in coordination and outreach.

6.2.1 Plan Preparation

DWA is participating in the Coachella Valley RUWMP to meet its reporting requirements under the UWMP Act.

6.2.2 Basis for Preparing a Plan

DWA is a retail public water supplier that meets the definition of an urban water supplier with over 23,000 municipal water service connections in 2020. DWA maintains a single Public Water System (PWS) with information shown in Table 6-1.

Table 6-1. DWR 2-1R Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 (AFY)
3310005	Desert Water Agency	23,550	32,504

6.2.3 Regional Planning

DWA is participating in the Coachella Valley Regional UWMP with five other water agencies, as described in Chapter 2 of the RUWMP.

6.2.4 Individual or Regional Planning and Compliance

DWA is reporting compliance with SB X7-7 as an individual agency; DWA did not participate in a Regional Alliance.

6.2.5 Fiscal or Calendar Year and Units of Measure

This report is being prepared on a calendar year basis with water use reported in acre-feet (AF).

6.2.6 Coordination and Outreach

DWA has developed this Plan through coordination with the public and other entities. This coordination is described in Chapter 2 of the RUWMP.

DWA is a retail agency and does not provide wholesale water to any other agencies. DWA does not purchase water from a wholesaler. Therefore, no coordination with wholesale agencies was performed.

6.3 System Description

This section provides information on DWA’s service area, population, and demographics.

6.3.1 General Description

DWA was formed in 1961 to ensure an adequate water supply for the northwestern portion of the Upper Coachella Valley. In 1962, DWA entered into a water supply contract with the State of California through DWR. In 1968, DWA purchased the Palm Springs Water Company and Cathedral City Water Company systems to provide domestic and municipal water service (hereafter municipal water service) to Palm Springs and vicinity.

DWA is responsible for water supply management within its Institutional Boundary, which encompasses 325 square miles including the City of Palm Springs (CPS), the southwestern portion of the City of Cathedral City (CCC), the City of Desert Hot Springs (CDHS), essentially all of Mission Springs Water District (MSWD), and some unincorporated areas within Riverside County.

DWA's management of the water supply within its Institutional Boundary includes artificial groundwater replenishment to augment natural replenishment as part of a joint groundwater basin management agreement with the Coachella Valley Water District (CVWD) in the Indio Subbasin and with a management committee in the Mission Creek Subbasin. CVWD and DWA augment local groundwater supplies via groundwater replenishment, using imported water from the State Water Project (SWP) exchanged for Colorado River Water supplies by the Metropolitan Water District of Southern California (MWD).

DWA provides water service through two separate systems (potable and recycled) within its service area, which includes the CPS, the southwestern portion of the CCC, and some unincorporated areas within Riverside County. DWA's service area does not include the MSWD service area, which is generally north of Interstate 10 and includes DHS and its surroundings. MSWD provides municipal water service throughout its service area.

DWA's water service area is generally bounded on the north (from west to east) by Interstate 10 to Highway 111, to Chino Canyon and the Whitewater River, on the east by the Whitewater River and CVWD, on the south by the rugged Santa Rosa Mountains, and on the west by the rugged San Jacinto Mountains.

6.3.2 Institutional Boundary Map

The DWA institutional boundary is shown in Figure 6-1.

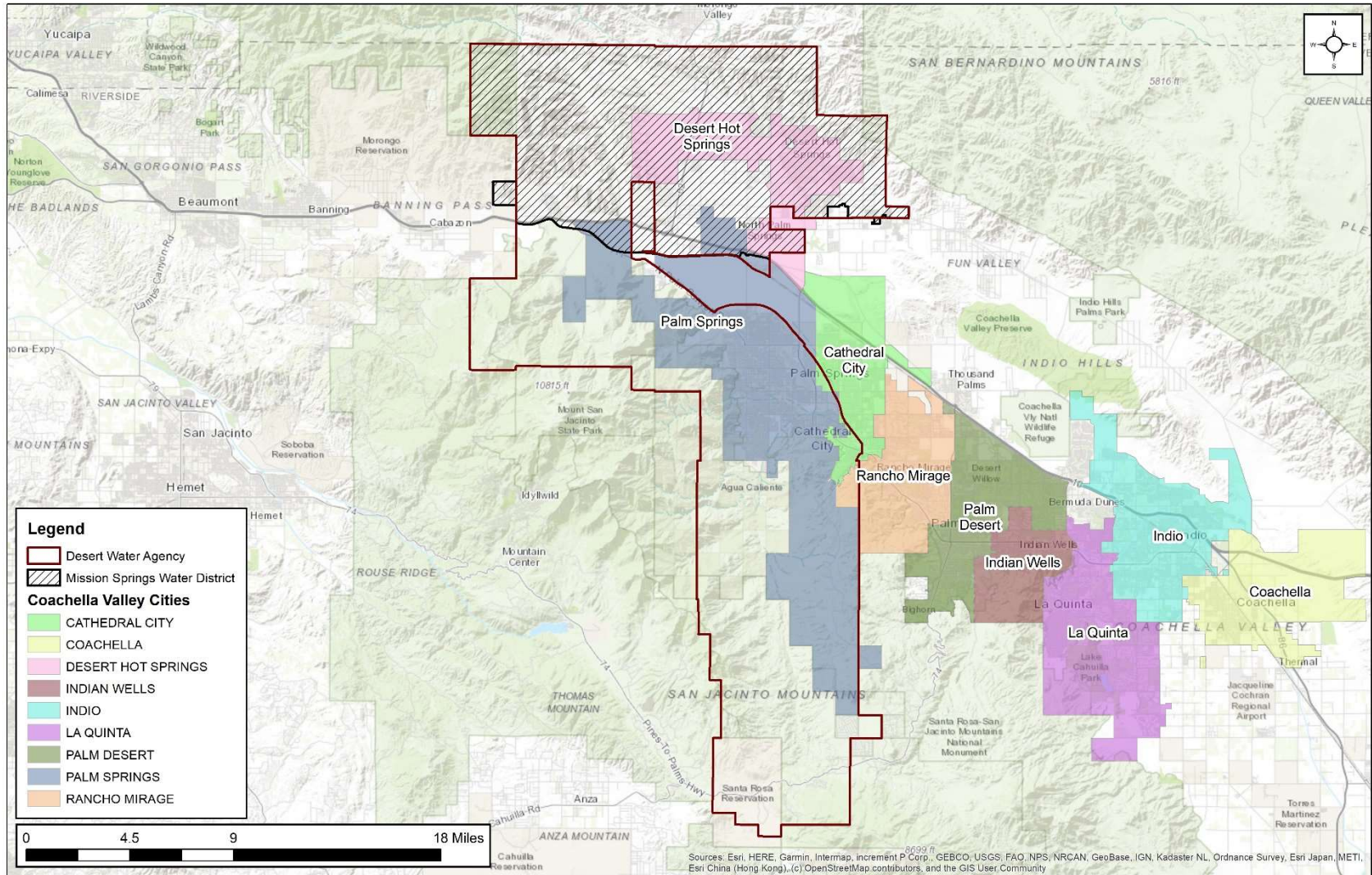


Figure 6-1. DWA Institutional Boundary

6.3.3 Service Area Climate

DWA's service area lies within the western Coachella Valley, which experiences an arid climate characterized by low humidity, high summer temperatures, and mild dry winters. The area normally receives an average annual precipitation of roughly four to five inches (most of which occurs in January, February, or March, except for summer thundershowers), and prevailing winds which are usually gentle but occasionally increase to velocities as high as 50 to 60 miles per hour or more with intense winds occurring most frequently in late spring. Midsummer temperatures commonly exceed 100 degrees F, frequently reach 110 degrees F, and periodically reach 120 degrees F. During the winter, the average temperature is about 60 degrees F.

The average rainfall and maximum and minimum monthly temperatures, as well as monthly average evapotranspiration (ETo) rates, are shown in Table 6-2. Due to the low annual rainfall and high summer temperatures, large quantities of water are required for supplemental landscape irrigation, even during the cooler winter months. The data are plotted in Figure 6-2.

Table 6-2. Monthly Average Climate Data

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Daily High Temperature (F)	71	74	81	87	95	104	109	108	102	91	79	69	89
Average Daily Low Temperature (F)	48	50	54	59	66	73	79	80	74	65	53	46	62
Average Total Precipitation (in)	1.14	1.11	0.51	0.09	0.02	0.00	0.25	0.14	0.24	0.20	0.23	0.68	4.61
Evapotranspiration, ETo (in)	2.5	3.4	5.6	7.1	8.3	8.7	8.1	7.5	6.2	4.7	2.9	2.2	67.2

Notes:

Temperature and Precipitation from National Weather Service Forecast office, Station Palm Springs Airport. Data from 1998 through 2020. Accessed through <https://w2.weather.gov/climate/xmacis.php?wfo=sgx>

ETo Data from California Irrigation Management Information System (CIMIS) Station 208, La Quinta II. Data from February 2007 through December 2020.

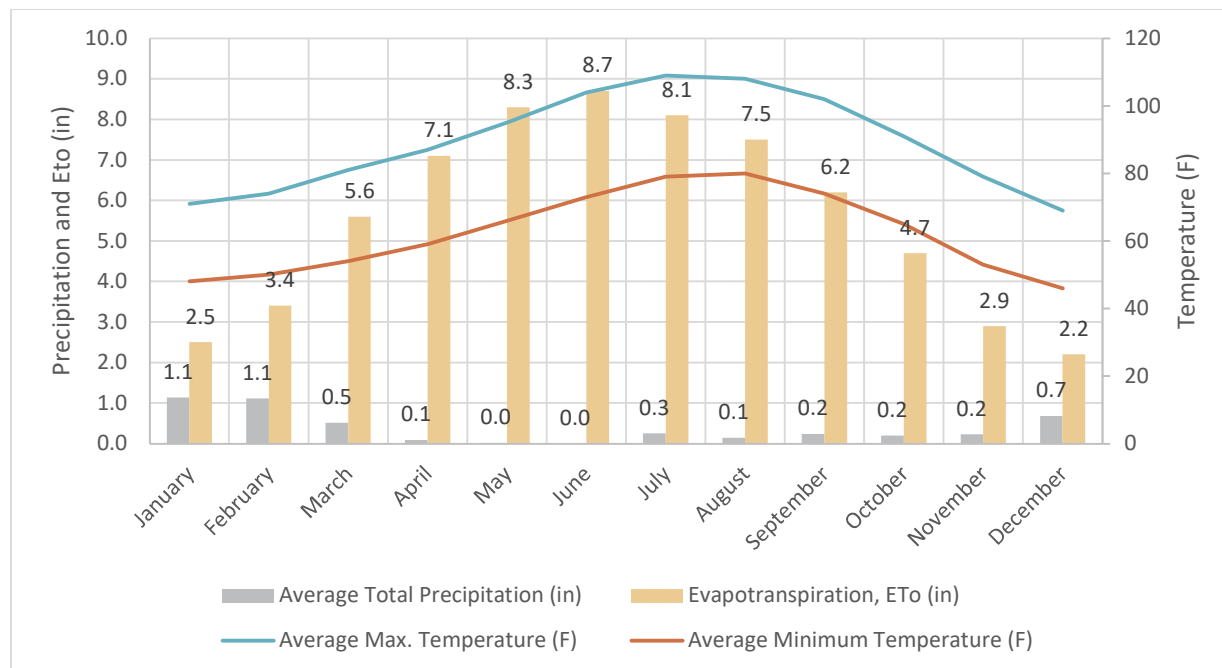


Figure 6-2. Monthly Average Climate Data

A discussion of the potential impacts of climate change on the region is included in Chapter 3 of the RUWMP.

6.3.4 Service Area Population and Demographics

Table 6-3 shows the current and projected population within DWA's service area. DWA's total population is estimated based on its permanent year-round population and an adjustment for seasonal population with year-round water usage.

The CPS contains the largest population within DWA's service area, with a current year-round population of 48,518, according to the United States Census Bureau population estimate for Palm Springs as of July 1, 2019. The Palm Springs area has experienced tremendous growth since its beginnings during the late 1800s, particularly during the period from 1970 to the present, during which the population more than doubled. The golf and tourism industries remain paramount to the area's economy.

Palm Springs is also a popular destination for a seasonal "snow bird" population and annual visitors as reported by the City of Palm Springs. The "snow bird" population consists mainly of people from the northeastern and midwestern United States, or from Canada, who spend a large portion of the winter in warmer locales such as California. "Snow birds" are drawn to the Palm Springs area by the weather, which includes around 350 days of sunshine. This seasonal population nearly doubles the permanent population in the winter months (November - April). Many seasonal residents occupy residences and condominiums that require year-round water use for maintenance, including irrigation.

Additionally, Palm Springs is one of the only cities in the area that does not have a prohibition or moratorium on short-term vacation rentals (STVRs). These properties are generally occupied with more people than the average resident household and are full much of the year. These properties use water indoors and out year-round but do not have any associated resident population affiliated with them per the Census.

Existing development within the western Coachella Valley primarily occupies the valley floor and is situated in Palm Springs, Cathedral City, Palm Springs Oasis (commonly known as Palm Oasis), and Snow Creek Village. Future development is expected to consist of infill within the local communities and expansion into canyons, coves, and mountainous areas.

DWA has developed estimates of seasonal population using demographic data and reports the total population as the sum of the permanent population (counted by the census) and the equivalent seasonal population.

The permanent year-round population projection for future years is based on data and projections from the Southern California Association of Governments (SCAG) Regional Transportation Plan forecast of population, households, and employment. The Regional Transportation Plan adopted by SCAG in 2020 is referred to as Connect SoCal.⁶ As part of that effort, SCAG performed a detailed evaluation of current and projected future demographics throughout Southern California, including the study area for the RUWMP. The Connect SoCal analysis included forecasts for employment, population, and households within cities and unincorporated areas. This demographic information was used to prepare projections of future water demands.

The U.S. Census Bureau and SCAG projections do not count non-permanent residents. The methodology for estimating population in seasonal housing units consists of the following steps:

1. The number of housing units in each Census block was obtained from 2010 Census data. The Census blocks were intersected with the supplier boundaries to calculate the number of housing units.
2. The portion of housing units that are for seasonal use was determined from Census data. The 2010 Census data indicated that 23.4% of the total number of housing units in Palm Springs was for seasonal use.
3. The number of seasonal housing units was calculated by multiplying the number of housing units by the portion of housing units that are for seasonal use.
4. The annual average occupancy rate for seasonal housing units was estimated from data provided by the Greater Palm Springs Convention and Visitors Bureau (GPSCVB). These data showed a 62% occupancy rate in Palm Springs from July of 2017 to July of 2018.
5. The number of occupied seasonal housing units was calculated by multiplying the number of seasonal housing units by the annual average occupancy rate of 62%.
6. 2010 Census data was used to calculate a number of persons per household.
7. The number of people in occupied seasonal housing units was calculated by multiplying the number of occupied seasonal housing units by the number of persons per household.

The calculation can be shown in the following equation:

$$\text{Seasonal Population} = \text{Housing Units} * \text{Portion for Seasonal Use} * \text{Average Occupancy Rate} * \text{Persons per Housing Unit}$$

A separate methodology was used for estimating population in RV parks, consisting of the following steps:

1. Data was collected from managers of RV parks for the number of spaces that are occupied seasonally. Spaces that are occupied permanently were not included, since those residents should be included in the Census data for permanent population.
2. The annual average occupancy rate for seasonally occupied RV spaces was estimated using the GPSCVB occupancy rate.
3. The number of occupied seasonal RV spaces was calculated by multiplying the number of seasonal RV spaces by the annual average occupancy rate of 62%.
4. 2010 Census data was used to calculate a number of persons per household.

⁶ More information about Connect SoCal is available at <https://scag.ca.gov/read-plan-adopted-final-plan>.

5. The number of people in occupied seasonal RV spaces was calculated by multiplying the number of occupied seasonal RV spaces by the number of persons per household.

The service area population consists of permanent year-round population, seasonal population (expressed as equivalent year-round population), and population in RV parks. The current and projected permanent year-round population and the seasonal population (expressed as equivalent year-round population) are shown in Table 6-3.

Table 6-3. DWR 3-1R Current and Projected Population

Population Served	2020	2025	2030	2035	2040	2045
Year-Round Population	56,272	59,356	62,440	65,524	68,609	71,693
Seasonal Population (Equivalent Year-Round Population)	15,034	15,857	16,680	17,504	18,360	19,216
RV Parks	375	375	375	375	375	375
Total	71,680	75,588	79,495	83,403	87,343	91,284
Note: Seasonal population and RV park population were estimated using method described in Section 6.3.4 and pre-approved by DWR.						

Since DWA relies primarily on groundwater and imports water for groundwater replenishment, the droughts of 1965-1967, 1976-1977, and 1989-1992 had negligible effects on DWA's ability to supply water to its customers. The drought period 2012 - 2015 was the driest on record in the state, though DWA's ability to supply water to its customers was not impacted. In response to the drought and state mandates, and in addition to its existing water conservation programs, DWA has implemented several water conservation programs to reduce water demands within its service area.

Water conservation is one of several high-priority policies actively implemented within DWA, and programs such as water audits for large-volume water users and various conservation incentives are encouraged and well received.

Since most water use within DWA's service area is used outdoors, DWA has focused conservation efforts on developing outdoor water conservation measures. Further explanation of DWA's water conservation programs is included in the Demand Management Measures section.

6.3.5 Land Uses within Service Area

DWA collaborates on planning issues with the City of Palm Springs, the City of Cathedral City, and Riverside County, as well as other regional entities. The demand projections in this report were developed using the regional growth forecast developed by SCAG. As part of updating the regional transportation plan in 2020, SCAG met with individual land use jurisdictions to verify that the growth forecast was consistent with local land use policies.

6.4 Water Use Characterization

This section describes the current and projected future water uses within DWA's service area.

6.4.1 Non-Potable Versus Potable Water Use

DWA uses groundwater and local surface water to meet potable demands in its service area. DWA also produces and delivers recycled water and local surface water for non-potable uses.

6.4.2 Past, Current, and Projected Water Use by Sector

Data from DWA's billing system was used to summarize water sales by customer sector for the past five years. The sectors recorded are summarized in Table 6-4.

Table 6-4. Water Use Sectors

Sector	Notes
Single-Family Residential	Single-family residential customers constitute the majority of DWA's customers.
Multi-Family Residential	Multiple dwelling units contained within one building or several buildings in a single complex.
Commercial	DWA has a complex mix of commercial customers, ranging from family restaurants, insurance offices, and gas stations to shopping centers, high-volume restaurants, golf courses, and other facilities serving the local and visitor populations (hotels).
Industrial	DWA serves a small industrial sector, primarily centered on light manufacturing. The industrial sector has not grown much in the last decade or so.
Institutional / Governmental	DWA has a stable institutional/governmental sector, primarily local government, parks, schools, and other types of public facilities.
Landscape	Currently, DWA utilizes recycled water for irrigation of large turf areas, such as golf courses, HOAs, schools, and public parks.

As part of a parallel ongoing planning effort, the Indio Subbasin Alternative Plan is currently being updated to meet the requirements of the Sustainable Groundwater Management Act (SGMA). That effort included an evaluation of five years of billing data and an estimation of indoor and outdoor water use. It was estimated that 69 percent of water use for residential and commercial accounts is being used outdoors. With the unique climate, extensive landscape irrigation requirements, and destination resort atmosphere, the average annual water consumption per capita is considerably higher than most Southern California areas outside the Coachella Valley.

DWA does not sell water to any other agencies or districts and there are no plans to wholesale municipal water in the future. DWA does not use its potable water supply for any purpose other than domestic water.

The difference between water production and metered water deliveries (billed to customers) is defined as non-revenue water. Non-revenue water includes authorized non-billed use (such as fire-fighting or flushing), and it includes losses from the system.

Water losses within DWA's water system generally result from water loss due to unauthorized connections, system leaks, and inaccuracies in production and consumption meters. Water losses are calculated as the difference between production meter records and customer meter records. DWA either estimates or measures water for firefighting, fire hydrant flow testing, water main flushing, reservoir cleaning, and identifiable system leaks and excludes these quantities from its calculated water losses.

DWA has completed annual water audits using the American Water Works Association (AWWA) Water Audit Software. The completed audits are included in Appendix G of the RUWMP. The losses recorded are summarized in Table 6-5.

Table 6-5. DWR 4-4R 12 Month Water Loss Audit Reporting

Report Period Start Date		Volume of Water Loss (AF)
MM	YYYY	
01	2015	2,391
01	2016	2,283
01	2017	3,503
01	2018	2,716
01	2019	577

The actual water use for 2020 is summarized in Table 6-6.

Table 6-6. DWR 4-1R Actual Demands for Water (AF)

Use Type	Additional Description	Level of Treatment When Delivered	2020
Single Family		Drinking Water	15,488
Multi-Family		Drinking Water	1,705
Commercial / Industrial / Institutional		Drinking Water	8,881
Industrial		Drinking Water	0
Landscape		Drinking Water	3,410
Other	Non-Revenue	Drinking Water	3,020
Whitewater River		Non-Potable	703
Total			33,207

DWA is participating in the Indio Subbasin Alternate Plan Update being prepared to meet requirements of the Sustainable Groundwater Management Act (SGMA). The RUWMP participating agencies coordinated efforts with demand projections being prepared for the Indio Subbasin Alternative Plan and the Mission Creek Subbasin Alternative Plan. The demand projection approach included several steps:

- The projections were based on the regional growth forecast prepared by SCAG as part of their regional transportation plan. SCAG’s most recent transportation plan is referred to as Connect SoCal⁷. SCAG gathered input from cities and counties throughout Southern California about expected growth and development for the next 25 years and incorporated the land use designations in each jurisdiction’s General Plan. The SCAG analysis includes estimates of population, households, and employment in each Traffic Analysis Zone (TAZ) in their study area⁸.

⁷ More information about Connect SoCal is available at <https://scag.ca.gov/connect-social>

⁸ An overview of the demographic and growth forecast is available at https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf?1606001579

- Additional analysis of vacancy rates was performed to estimate baseline and projected housing units for the study area, including housing units used by seasonal residents and other part-time uses.
- Future estimates of employment were used to drive future growth in Commercial, Industrial, and Institutional (CII) demands
- Five years of customer billing data (from July 2014 through June 2019) were used to develop unit demand factors. These factors have units of gallons per housing unit for residential and landscape uses and gallons per employee for CII uses.
- Water losses were estimated using water loss audits.
- Demands were adjusted for two types of conservation savings:
 - Indoor passive conservation savings from the natural replacement of indoor devices such as toilets, showerheads, clothes washers, and dishwashers.
 - Outdoor conservation savings from the implementation of the 2015 Model Water Efficiency Landscape Ordinance (MWELo) for future developments.

Estimates of future demand are shown in Table 6-7.

Table 6-7. DWR 4-2R Projected Demands for Water (AF)

Use Type	Additional Description	Actual Use	Projected Water Use				
		2020	2025	2030	2035	2040	2045
Single Family		15,488	17,305	18,180	19,008	19,770	20,342
Multi-Family		1,705	1,716	1,738	1,777	1,841	1,944
Commercial / Industrial / Institutional		8,881	10,292	10,687	11,084	11,245	11,407
Landscape		3,410	3,739	3,885	4,032	4,185	4,337
Other		0	2	2	3	3	3
Losses	Non-revenue	3,020	2,474	2,570	2,660	2,750	2,832
Non-Potable	Whitewater River	703	700	700	700	700	700
Total		33,207	36,228	37,762	39,264	40,494	41,565

The estimated water savings due to codes and standards are included in the estimated demands in Table 6-7. Those estimated savings were quantified in the draft Indio Subbasin Alternative Plan and are presented in Table 6-8.

Table 6-8. Estimated Water Savings Due to Passive Conservation

Type	2020	2025	2030	2035	2040	2045
Indoor Passive Savings (AFY)	131	335	464	563	642	707
Outdoor Passive Savings (AFY)	509	872	1,228	1,575	1,838	2,072
Total Passive Savings (AFY)	640	1,207	1,692	2,138	2,480	2,779

Gross water use including projected recycled water demands are shown in Table 6-9.

Table 6-9. DWR 4-3R Total Gross Water Use

	2020	2025	2030	2035	2040	2045
Potable and Raw Water (AFY) From DWR Table 4-1R and 4-2R	33,207	36,228	37,762	39,264	40,494	41,565
Recycled Water Demand (AFY) From DWR Table 6-4R	3,649	3,413	3,413	3,413	3,413	3,413
Total Water Use (AFY)	36,856	39,641	41,175	42,677	43,907	44,978

6.4.3 Worksheets and Reporting Tables

DWA has completed the required UWMP submittal tables and included them in Appendix D of this RUWMP.

6.4.4 Water Use for Lower Income Households

DWA has a civic and legal responsibility to provide for the water-related health and safety of the community. DWA's main objective is to provide its customers with an adequate and reliable supply of high-quality water to meet present and future needs in an environmentally and economically responsible manner.

Residential sector water use projections herein include all households, regardless of income level, and residential accounts are not subdivided into income-specific categories.

DWA does not give priority to one residential area over another; therefore, all residential customers are served equally during water shortage emergencies in terms of service and delivery. DWA does not deny service to non-delinquent accounts. Additionally, DWA has established a fund to assist low-income customers in paying their water bills.

The water use projections set forth in Table 6-7 include projected water use for lower-income households. Water use priority does not differ based on income level but is classified by the type of use.

6.4.5 Climate Change Considerations

A discussion of potential climate change impacts on demands is presented in Chapter 3 of the RUWMP.

6.5 SB X7-7 Baseline and Targets

DWA's methods for calculating baseline and target water consumption values are described in this section. This section also documents DWA's compliance with the 2020 Urban Water Use Target.

6.5.1 Wholesale Suppliers

DWA is not a wholesale supplier, and therefore this section is not applicable.

6.5.2 SB X7-7 Forms and Tables

DWA calculated baseline water use and targets in its 2015 UWMP. Since that time, DWA has obtained more accurate information to estimate its service area population. Therefore, DWA is recalculating its baseline water use and compliance target in this plan.

6.5.3 Baseline and Target Calculations for 2020 UWMPs

DWA calculated service area population for its baseline period and calculated an updated compliance target for 2020. The calculations are documented on the standard DWR SB X7-7 tables included in Appendix E and are summarized here.

6.5.4 Service Area Population and Gross Water Use

DWA calculated permanent population within its service area using the DWR population tool. DWA then added an equivalent population to represent the seasonal population of “snow birds” and visitors.

The methodology for estimating seasonal population is described in Section 6.3. This methodology was reviewed and approved in advance by DWR.

DWA’s gross water use was obtained from water production records.

6.5.5 2020 Compliance Daily Per Capita Water Use (GPCD)

The average use during the baseline period and the confirmed target are shown in Table 6-10.

Table 6-10. DWR 5-1R Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline Use (GPCD)	Confirmed 2020 Target (GPCD)
10-15 Year	1996	2005	593	474
5 Year	2004	2008	603	
All values are in Gallons per Capita per Day (GPCD)				

DWA’s actual water use in 2020 was below the confirmed target, as shown in Table 6-11.

Table 6-11. DWR 5-2R 2020 Compliance

Actual 2020 Use (GPCD)	Optional Adjustments to 2020 Use		2020 Confirmed Target (GPCD)	Supplier Achieved Targeted Reduction in 2020
	Total Adjustments	Adjusted 2020 Use (GPCD)		
405	0	405	474	Yes
All values are in Gallons per Capita per Day (GPCD)				

Although the water use targets set forth herein have been met and surpassed, DWA will continue to implement the Demand Management Measures described later in this chapter. DWA's commitment to educating the public on the water supply and water conservation have had a positive impact on conservation throughout its service area. Therefore, DWA plans to continue and expand these measures as opportunities arise.

6.5.6 Regional Alliance

DWA is complying with SB X7-7 requirements as an individual retail agency and is not participating in a Regional Alliance.

6.6 Water Supply Characterization

This section describes the water supplies currently available to DWA and those planned for the 25-year planning period.

6.6.1 Water Supply Analysis Overview

In the 1920s and 1930s, the area's municipal water supply was derived entirely from creek diversions (surface water). Currently, DWA's sources of supply include groundwater produced by their potable water supply wells, surface water diverted from creeks in the San Jacinto Mountains and Whitewater River, imported State Water Project (SWP) water exchanged for Colorado River water, and recycled water (for irrigation use). As described in the Desert Water Agency Domestic Water System General Plan 2008 (2008 General Plan), all imported water is used to replenish or recharge the Coachella Valley Groundwater Basin, particularly the Indio and Mission Creek Subbasins, and subsequently the Garnet Hill Subarea.

6.6.2 Supply Characterization

This discussion includes the types of water supply considered by DWR.

6.6.2.1 Purchased or Imported Water

Colorado River water has been and continues to be exchanged for State Water Project water per the 2019 and prior Exchange Agreements among DWA, CVWD, and MWD. State Water Project water consists of DWA's apportionment of its Table A allocation, Article 21 surplus water allocation (when available), and other surplus water acquired and conveyed through the State Water Project.

More information about DWA's use of State Water Project water is included in Chapter 3 of the RUWMP.

6.6.2.2 Groundwater

DWA extracts groundwater comprising natural recharge, non-consumptive return, and groundwater from storage. Net natural replenishment for the Indio Subbasin is described in the 2010 Update to the Coachella Valley Water Management Plan. "Groundwater from storage" is continued groundwater extraction required to meet demands in addition to natural and imported supplies.

Non-consumptive return to the aquifer is estimated to be 29 to 35 percent of groundwater and surface water produced and used but not consumed.

Groundwater pumped by DWA over the past five years is summarized in Table 6-12.

Table 6-12. DWR 6-1R Groundwater Volume Pumped (AFY)

Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Indio Subbasin	28,559	31,316	32,135	28,371	31,812

6.6.2.3 Surface Water

DWA has rights to divert surface water from local streams tributary to the Whitewater River. Surface water sources are secured from Snow and Falls Creeks, Chino Creeks North and West, and the Whitewater River. The creeks are all tributary to the Whitewater River. DWA’s surface water diversions are used for municipal water service or agriculture.

Per State Water Resources Control Board Water Rights Division Licenses 2292 and 8226, DWA is permitted to divert 5.5 cubic feet per second (cfs) from Snow Creek and 1.5 cfs from Falls Creek per license 3097, for a total of 7.0 cfs from both creeks combined. Under the Whitewater River Adjudication Decree, Case No. 18035, dated September 28, 1938, DWA has the right to divert 2 cfs from Chino Creek.

In 2009, DWA acquired water rights for the diversion of Whitewater River water from the Whitewater Mutual Water Company (WMWC) through stock purchase agreements with stockholders. Therefore, the water previously diverted by WMWC is now incorporated into DWA’s supply. WMWC has diverted Whitewater River water pursuant to its adjudicated stream rights (Whitewater River Adjudication Decree, dated September 28, 1938). DWA now continues to use that right, which is 10 cfs with a priority date of September 19, 1913.

The diversion at Chino Creek North was taken out of service in 2000 due to turbidity spikes in the source water, and it cannot be restored to potable service without filtration. Water that had been historically diverted from Chino Creek North now infiltrates the creek bed below the diversion, recharging the groundwater basin. DWA continues to monitor the water quality of Chino Creek North to determine when it may be put back into service.

Average annual surface water diversions are assumed to increase from 2,630 AFY in 2020 to 6,000 AFY in 2035.

6.6.2.4 Stormwater

DWA is involved in regional efforts to identify opportunities to cost-effectively capture stormwater for potential beneficial use.

6.6.2.5 Wastewater and Recycled Water

The City of Palm Springs maintains a sanitary sewer collection system consisting of approximately 250 miles of gravity sewer pipe within city limits. DWA is responsible for providing wastewater collection service within portions of Cathedral City and unincorporated Riverside County.

The use of recycled water plays a key role in DWA’s resource management as it serves to conserve and protect the valuable groundwater and surface water supplies for potable uses. In 1988, DWA and the City of Palm Springs (CPS) entered into an agreement to treat wastewater. Under the agreement, the City provides primary and secondary treatment at the City of Palm Springs Wastewater Treatment Plant (CPS WWTP), after which the secondary effluent is piped to DWA’s Recycled Water Treatment Facility for tertiary treatment or to a collection of percolation ponds for recharge back into the groundwater basin.

In 1989, DWA constructed its Recycled Water Treatment Facility (RWTF) with an initial capacity of 5.0 million gallons per day (MGD). The facility was expanded in 1995 to its present capacity of 10.0 MGD (ultimate capacity of 15.0 MGD). DWA’s recycled water system facilities consist of the RWTF, two booster pumping plants, and transmission pipelines.

When secondary effluent is available to the RWTF, DWA treats it to tertiary standards and delivers it to existing customers. At times of high demand, particularly in the summer months, DWA has the ability to supplement the recycled water supply with non-potable water from shallow groundwater wells, and/or potable water in rare circumstances. Secondary effluent from the CPS WWTP that is not needed to meet recycled water demands is diverted to percolation ponds, where it infiltrates back into the groundwater subbasin at an average rate of approximately 2,000 AFY. Presently, DWA's RWTF treats over half of the secondary effluent available from the CPS WWTP in the winter months and all of the secondary effluent available during the summer. DWA's current recycled water customer base does not require the full capacity of the CPS WWTP to meet their recycled water demands during the winter months.

The supply of recycled water is limited by the quantity of raw wastewater flowing into the CPS WWTP. Water conservation appears to have impacted the quantity of wastewater generated within DWA's service area. Also, the City is near buildout and future quantities of wastewater are unlikely to exceed current quantities by any significant margin. With limited wastewater available for treatment and use as recycled water, there is limited potential for expanding recycled water use within DWA's service area.

Portions of DWA's wastewater collection system within areas of Cathedral City that have been developed since 1980 are located at a lower elevation than the CPS WWTP; therefore, wastewater from these areas must be pumped and piped to the neighboring CVWD wastewater collection system for treatment and disposal. Both DWA and the City of Cathedral City are involved in planning for wastewater collection systems to serve any remaining areas that are currently served by septic systems.

In 2014, DWA constructed two non-potable, shallow groundwater wells (1,200 gallons per minute [gpm] capacity each) that are intended to extract shallow, low-quality groundwater to supplement recycled water demands in the summer months in-lieu of potable water. Production at these two wells began in early 2015 and has completely replaced potable water as a supplement to meet recycled water demands within DWA's service area. It is estimated that approximately 500 AFY of supplemental water is required to meet existing recycled water demands, primarily in the summer. Production from the shallow groundwater wells can potentially recover 100 percent of the 2,000 AFY of secondary effluent that is discharged to the percolation ponds.

The recycled water produced by DWA's RWTF is approved for all uses, except drinking, by the State Water Resources Control Board. To help demonstrate the positive effects of using recycled water, DWA's Operations Center and RWTF are both irrigated with recycled water. The CPS Demuth Park and several Palm Springs golf courses are also irrigated with recycled water, among other locations within DWA's service area.

Currently, all recycled water produced by DWA's facility is utilized for non-potable irrigation purposes. Other uses for recycled water could be developed; however, due to the large quantities of water required for irrigation within DWA's boundaries, it is prudent to assume that the predominant use will continue to be for irrigation. Irrigation use also has the highest potential for conserving valuable groundwater.

Due to the fact that the use of recycled water does not change the nature of consumptive water use, use of recycled water is considered herein to have a negligible effect on the assumed rate of non-consumptive return to the aquifer based on the total groundwater and surface water production. However, increased recycled water use can help offset the use of other sources (such as pumped groundwater) to meet total demand and improve water quality. DWA is active exploring new recycled water connections.

Information about wastewater collected within the DWA service area is summarized in Table 6-13, and information about treatment is provided in Table 6-14.

The 2020 use of recycled water and projected future use is presented in Table 6-15. The actual use in 2020 is compared to the projections from the 2015 UWMP in Table 6-16.

Table 6-13. DWR 6-2R Wastewater Collected within Service Area in 2020

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated	Wastewater Volume Collected from UWMP Service Area in 2020 (AFY)	Name of Wastewater Agency Receiving Collected Wastewater	Wastewater Treatment Plant Name	Wastewater Treatment Plant Located within UWMP Area	WWTP Operation Contracted to a Third Party
City of Palm Springs	Metered	5,004	City of Palm Springs	Palm Springs WWTP	Yes	Yes
Desert Water Agency	Estimated	1,300	CVWD	WRP-10	No	No
Total		6,304				

Table 6-14. DWR 6-3R Wastewater Treatment and Discharge within Service Area in 2020

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number	Method of Disposal	Plant Treats Wastewater Generated Outside the Service Area	Treatment Level	2020 Volumes (AFY)				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Palm Springs WWTP			7A330114012	Percolation Pond	No	Secondary	5,004	2,813	2,195	0	0
DWA RWTF			7A330132001		No	Tertiary			3,649	0	0
Total							5,004	2,813	3,649		

Table 6-15. DWR 6-4R Recycled Water Within Service Area in 2020

Name of Supplier Producing (Treating) the Recycled Water			Desert Water Agency							
Name of Supplier Operating the Recycled Water Distribution System			Desert Water Agency							
Supplemental Volume of Water Added in 2020 (AF)			1,454							
Source of 2020 Supplemental Water			Shallow groundwater wells and potable water							
Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
Landscape Irrigation (excludes golf courses)				Tertiary	739	740	740	740	740	740
Golf Course Irrigation				Tertiary	2,910	2,673	2,673	2,673	2,673	2,673
Commercial Use										
Industrial Use										
Geothermal and Other Energy Production										
Seawater Intrusion Barrier										
Recreational Impoundment										
Wetlands or Wildlife Habitat										
Groundwater Recharge										
Surface Water Augmentation										
Direct Potable Reuse										
Total					3,649	3,413	3,413	3,413	3,413	3,413

Table 6-16. DWR 6-5R Recycled Water Use Projection Compared to Actual

Use Type	2015 Projection for 2020 (AFY)	2020 Actual Use (AFY)
Agricultural Irrigation		
Landscape Irrigation (excludes golf courses)	6,100	739
Golf Course Irrigation		2,910
Commercial Use		
Industrial Use		
Geothermal and Other Energy Production		
Seawater Intrusion Barrier		
Recreational Impoundment		
Wetlands or Wildlife Habitat		
Groundwater Recharge (IPR)*		
Surface Water Augmentation (IPR)		
Direct Potable Reuse		
Total	6,100	3,649

DWA offers the following incentives to encourage recycled water use within its service area:

- Favorable Rates – DWA's rates for providing recycled water to its customers are approximately one-half of its rates for providing potable water.
- Cost-Sharing – DWA participates in the cost of constructing offsite water recycling facilities.
- Technical Assistance – DWA provides technical assistance to its recycled water customers at no charge.
- Reliability Guarantee – DWA guarantees its recycled water service reliability (with qualifying statements), even during water supply shortages (excluding disaster conditions). In the event that DWA is unable to provide recycled water, it will supply shallow groundwater or potable water to its recycled water customers.
- Cost-Comparisons – DWA provides potential recycled water customers with a comparison of the costs of using recycled water for irrigation versus the costs of constructing and operating a private water well, including costs associated with groundwater replenishment assessments.

Historically, the favorable rates for recycled water have been the primary incentive for customers with large landscaped areas to use recycled water in lieu of potable water for irrigation. DWA has experienced challenges with its recycled water distribution system with one of its largest recycled water customers going offline in 2020. The Agency is looking for possible new connections to replace that demand.

6.6.2.6 Desalinated Water Opportunities

DWA does not have direct access to ocean water or a significant quantity of brackish groundwater. There is a limited and questionable supply of brackish water at the downstream (lower or southeasterly) end of the Mission Creek Subbasin; however, extraction of such brackish groundwater would deplete the same groundwater subbasin from which usable groundwater is extracted. At this time, DWA has no plans to extract and treat any brackish water, and desalinated water is not a potential source of water supply for DWA.

6.6.2.7 Water Exchanges and Transfers

DWA currently exchanges its SWP water with MWD for water from the Colorado River Aqueduct. DWA continues to explore additional opportunities to obtain supplemental sources through transfers or exchanges with other suppliers.

6.6.2.8 Future Water Projects

DWA and CVWD are always exploring possible future joint water supply projects to increase water supply for the Coachella Valley. DWA and CVWD will continue efforts to secure additional water supplies from the State Water Project or other sources.

DWA has made investments in the Sites Reservoir and Delta Conveyance Facility, two projects that would increase reliability of SWP supplies. Increased groundwater replenishment with SWP Exchange water would help with groundwater basin management objectives. However, the water would not be used to meet urban demands directly; the water would be used for groundwater replenishment. Therefore, these projects are not identified in this report as increasing urban supply.

6.6.2.9 Summary of Existing and Planned Sources of Water

DWA's sources of supply used in 2020 are summarized in Table 6-17. DWA's anticipated future supplies are shown in Table 6-18.

Table 6-17. DWR 6-8R Actual Water Supplies

Water Supply	Additional Detail on Water Supply	2020	
		Actual Volume (AFY)	Water Quality
Groundwater	Indio Subbasin	31,812	Drinking water
Surface water	Chino Creek	12.98	Drinking water
Surface water	Snow Creek	678.59	Drinking water
Surface water	Whitewater River	703.11	Non Potable
Recycled water	DWA RTF	3,649	Recycled water
Total		33,207	

Table 6-18. DWR 6-9 R Projected Water Supplies

Water Supply	Additional Detail on Water Supply	Projected Water Supply (AFY)				
		2025	2030	2035	2040	2045
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Surface water	Chino Creek, Snow Creek, Falls Creek, Whitewater River	2,630	2,630	6,000	6,000	6,000
Groundwater	Indio Subbasin	33,598	35,132	33,264	34,494	35,565
Recycled water		3,413	3,413	3,413	3,413	3,413
Total		39,641	41,175	42,677	43,907	44,978

6.6.2.10 Special Considerations

Although groundwater is a relatively resilient water supply with respect to climate change, long periods of drought/dry weather may reduce the availability of imported water for groundwater recharge. Climate change may more directly impact the availability of imported water to DWA in future years. A more detailed discussion of potential climate change impacts is presented in Chapter 3 of the RUWMP.

6.6.3 Submittal Tables Using Optional Planning Tool

Because supply availability for DWA's primary supply source does not vary seasonally, DWA has not completed the DWR Optional Planning Tool.

6.6.4 Energy Use

DWA compiled the total energy use for water management activities during calendar year 2019, the most recent year for which complete energy usage data were available.

The results are shown in Table 6-19.

Table 6-19. Energy Use for Water Management

Category	Usage during Calendar Year 2019	Notes
Potable water (wells, boosters, streams, reservoir sites)	23,075,285 kwh	
Recycled water	1,821,996 kwh	1,075,193 kwh of this amount was generated from solar
Hydropower production	4,581,038 kwh	2,002,601 should be credited to CVWD 2,578,437 should be credited to DWA
Solar production	1,615,470 kwh	

The energy usage information was used to populate DWR's standard table for reporting energy use. DWA used the Total Utility Approach to estimate the energy intensity of its water management operations. The results are shown in Table 6-20.

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Table 6-20. DWR O-1B Energy Intensity Reporting

Table O-1B: Recommended Energy Reporting - Total Utility Approach				
Enter Start Date for Reporting Period	1/1/2019	Urban Water Supplier Operational Control		
End Date	12/31/2019			
Is upstream embedded in the values reported?	No	Sum of All Water Management Processes	Non-Consequential Hydropower	
<i>Water Volume Units Used</i>	<i>AF</i>	Total Utility	Hydropower	Net Utility
<i>Volume of Water Entering Process (volume unit)</i>		29,546	0	29,546
<i>Energy Consumed (kWh)</i>		23,075,285	-2,578,437	20,496,848
<i>Energy Intensity (kWh/volume)</i>		781.0	0.0	693.7
Quantity of Self-Generated Renewable Energy				
1,615,470	kWh			
Data Quality (<i>Estimate, Metered Data, Combination of Estimates and Metered Data</i>)				
<i>Combination of Estimates and Metered Data</i>				
Data Quality Narrative				
Energy use data was obtained from electricity consumption records maintained by the agency.				
Narrative				
The agency uses energy for groundwater production from wells, pumping at booster stations from lower pressure zones to higher pressure zones, and treatment processes.				

6.7 Water Service Reliability and Drought Risk Assessment

The California Urban Water Management Planning Act (Act) requires urban water suppliers to assess water supply reliability that compares total projected water use with the expected water supply over the next 20 to 25 years in five-year increments. The Act also requires an assessment for a single dry year and multiple dry years. This chapter presents the reliability assessment for DWA's service area.

6.7.1 Reliability Overview

It is the goal of DWA to deliver a reliable and high-quality water supply to its customers, even during dry periods.

Several of DWA's surface water diversions are occasionally taken out of service due to water quality. In the summer months Snow and Falls Creeks are subject to high levels of coliform bacteria and therefore require

additional disinfection. In 2020, DWA completed construction of a surface water filtration plant to filter water from Snow and Falls Creek.

Constraints on DWA's groundwater supplies resulting from water quality include those that could result from high concentrations of nitrate and uranium in the groundwater. DWA's Well 19 was taken out of service as a result of high nitrate concentrations in the underlying groundwater, which are caused by discharges from septic systems in the area. As a result of the high nitrate concentrations, Well 19 remains inoperable, and groundwater in the vicinity of the well is unusable.

Additionally, several of DWA's wells, namely Wells 9, 14, 16, and 43, are intermittently inoperable due to high levels of uranium in the groundwater.

6.7.2 Water Service Reliability Assessment

Water has played, and will continue to play, a vital role in the development of the Palm Springs area, a world-renowned resort destination community. A reliable, abundant, high-quality water supply is the most important factor in the economic sustainability and growth of the Palm Springs area. DWA's goal is to provide its customers with an adequate and reliable supply of high-quality water to meet present and future needs in an environmentally and economically responsible manner.

Since 1973, DWA has been using Colorado River water exchanged for SWP water to replenish groundwater in the Indio Subbasin. As a state water contractor, DWA is susceptible to the uncertainty of supply and delivery from the SWP and the Delta due to legal, environmental, and climatic restrictions.

Due to DWA's reliance on local groundwater sources and its ability to secure imported water for storage within the Indio Subbasin, short-term drought situations have historically had a negligible effect on DWA's ability to supply water to its customers. DWA will continue to request the maximum allocation from the SWP and will obtain and store as much available water as possible to prevent supply deficiencies and to preserve the groundwater basin.

The majority of DWA's service area depends exclusively on groundwater, while the northwestern portion of the service area is supplied by a mix of groundwater and surface water. Since the surface water sources are fed with water originating in the local mountains, they are inherently more susceptible to seasonal variation and drought conditions. A small group of relatively isolated single-family, minimally-landscaped residences (i.e., Snow Creek Village) are supplied solely with surface water. If delivery of surface water to these residences was interrupted or reduced, demand could be met in the interim through stored water in reservoirs dedicated to those areas. In the unlikely event that water became unavailable in those areas, a water supply would have to be trucked in from elsewhere within DWA's water system.

DWA's water system has the potential to be affected by earthquakes, power outages, floods, and other potentially devastating occurrences; therefore, emergency preparedness planning is a key part of DWA's operations. DWA has coordinated internally with all departments and with other local entities to formulate an Emergency Response Plan. The Emergency Response Plan outlines specific courses of action DWA personnel will follow in the event of a disaster or a breach in facility security. In the Emergency Response Plan, all areas of emergency preparedness are addressed, with emphasis on employee response and delivering safe water to DWA's customers as quickly as possible.

Additionally, many of DWA's 26 aboveground steel reservoirs are equipped with earthquake valves to conserve stored water supply in the event of a pipeline break resulting from an earthquake. Additional earthquake valve installations will be constructed as funds become available. Aging pipelines are also replaced as part of an ongoing mainline replacement program to further enhance the reliability of the system. All new facilities are designed taking into consideration the potential for earthquakes, power shortages, and flooding potential.

As required by the Urban Water Management Planning Act, the tables below describe DWA's supply reliability and vulnerability during an average (normal) water year, a single dry water year, and multiple dry water years. For purposes of this section, a normal water year, a single dry water year, and a multiple dry year period are defined below:

- Normal Water Year is defined as a year in the historical sequence that most closely represents median runoff levels and patterns.
- Single Dry Water Year is defined as the lowest annual runoff for a watershed.
- Multiple Dry Water Year Period is defined as the lowest average runoff for a consecutive multiple year period (five years or more).

DWA's water supply is not directly affected by short-term fluctuations in hydrology (i.e. drought conditions), since approximately 95 percent of DWA's water supply consists of groundwater and recycled water. The challenges that DWA faces are long-term in nature, as opposed to short-term shortage situations, due to the large supply of stored ("banked") groundwater. While there is sufficient groundwater in storage to weather short-term droughts, it will not sustain the current population indefinitely due to the limited quantities of natural recharge. Continued water importation, water recycling, water conservation, and long-range planning are necessary to meet current and future water demands without depleting the groundwater in storage.

6.7.2.1 Water Quality Impacts on Reliability

DWA exchanges its Table A allocations of State Water Project water with MWD for Colorado River water to augment the Indio Subbasin. Colorado River water is generally of good quality; however, Colorado River water has a higher total dissolved solids (TDS) concentration (greater than 500 milligrams per liter) than native groundwater (less than 500 milligrams per liter).

TDS consist of minerals and salts dissolved in water, typically resulting from the erosion of natural deposits, and TDS concentration is often viewed as an indicator of water quality. The Division of Drinking Water has established a secondary maximum contaminant level (MCL) of 1,000 milligrams per liter for TDS, with a recommended level of 500 milligrams per liter. The MCL for TDS concentration is a secondary drinking water standard, meaning that TDS is regulated on the basis of customer acceptance rather than on the basis of public health. Regulations of TDS concentrations could affect the reliability of DWA's water supply.

DWA is working with other parties to update the regional Salt-Nutrient Management Plan (SNMP) for Regional Water Quality Control Board approval. Through this collaboration, DWA hopes to achieve long-term salinity management strategies that are protective of both water quality and quantity.

Due to ammonium perchlorate contamination from manufacturing facilities in Nevada, perchlorate has been detected in Colorado River water. Perchlorate is a substance that can be either naturally occurring or man-made. Currently, perchlorate is a regulated contaminant with a State MCL of 6 micrograms per liter. Within DWA's service area, very low levels of perchlorate (<1 microgram per liter) have been detected in nearly every well; however, perchlorate concentrations are well below the MCL and are expected to continually decrease over time. Capture and treatment of perchlorate contamination began in 1999, and concentrations of perchlorate in the Colorado River have been decreasing ever since. The presence of perchlorate in Colorado River water is not expected to affect the reliability of DWA's water supply.

The base years for reliability assessment are shown in Table 6-21.

Table 6-21. DWR 7-1R Basis of Water Year Data

Year Type	Base Year	Available Supply if Year Type Repeats
		Percent of Average Supply
Average Year	2020	100%
Single-Dry Year	2014	100%
Consecutive Dry Years 1st Year	2012	100%
Consecutive Dry Years 2nd Year	2013	100%

Year Type	Base Year	Available Supply if Year Type Repeats
		Percent of Average Supply
Consecutive Dry Years 3rd Year	2014	100%
Consecutive Dry Years 4th Year	2015	100%
Consecutive Dry Years 5th Year	2016	100%

The anticipated supplies and demands during a normal year are shown in Table 6-22.

Table 6-22. DWR 7-2R Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY) From DWR Table 6-9R	39,641	41,175	42,677	43,907	44,978
Demand Totals (AFY) From DWR Table 4-3R	39,641	41,175	42,677	43,907	44,978
Difference (AFY)	0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

The anticipated supplies and demands during a single dry year are shown in Table 6-23.

Table 6-23. DWR 7-3R Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY)	39,641	41,175	42,677	43,907	44,978
Demand Totals (AFY)	39,641	41,175	42,677	43,907	44,978
Difference (AFY)	0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

The anticipated supplies and demands during a multiple-dry year period are shown in Table 6-24.

Table 6-24. DWR 7-4R Multiple Dry Years Supply and Demand Comparison (AF)

		2025	2030	2035	2040	2045
First Year	Supply Totals (AFY)	39,641	41,175	42,677	43,907	44,978
	Demand Totals (AFY)	39,641	41,175	42,677	43,907	44,978
Difference (AFY)		0	0	0	0	0
Second Year	Supply Totals (AFY)	39,641	41,175	42,677	43,907	44,978
	Demand Totals (AFY)	39,641	41,175	42,677	43,907	44,978
Difference (AFY)		0	0	0	0	0
Third Year	Supply Totals (AFY)	39,641	41,175	42,677	43,907	44,978
	Demand Totals (AFY)	39,641	41,175	42,677	43,907	44,978
Difference (AFY)		0	0	0	0	0
Fourth Year	Supply Totals (AFY)	39,641	41,175	42,677	43,907	44,978
	Demand Totals (AFY)	39,641	41,175	42,677	43,907	44,978
Difference (AFY)		0	0	0	0	0
Fifth Year	Supply Totals (AFY)	39,641	41,175	42,677	43,907	44,978
	Demand Totals (AFY)	39,641	41,175	42,677	43,907	44,978
Difference (AFY)		0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.						

6.7.3 Drought Risk Assessment

A new reporting requirement for the 2020 UWMP is a five-year Drought Risk Assessment (DRA). The DRA is based on projections of demand and available supply for the next five years.

Demands are expected to increase to the projected demands for 2025. It is expected that conservation messaging and programs will prevent any significant increase in demands among existing customers due to dry conditions. The groundwater supply is reliable for a five-year dry period as the volume in storage can be drawn down during a dry period.

The results of the DRA are summarized in Table 6-25.

Table 6-25. DWR 7-5 Five-Year Drought Risk Assessment

2021	Gross Water Use (AFY)	37,413
	Total Supplies (AFY)	37,413
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2022	Gross Water Use (AFY)	37,970
	Total Supplies (AFY)	37,970
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2023	Gross Water Use (AFY)	38,527
	Total Supplies (AFY)	38,527
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2024	Gross Water Use (AFY)	39,084
	Total Supplies (AFY)	39,084
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2025	Gross Water Use (AFY)	39,641
	Total Supplies (AFY)	39,641
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.		

6.8 Water Shortage Contingency Plan

DWA has developed a Water Shortage Contingency Plan (WSCP) to help manage potential future water shortages. The WSCP is being adopted separately from the RUWMP and may be modified as needed based on changing conditions. The WSCP is an attachment to this RUWMP.

6.9 Demand Management Measures

This section describes the Demand Management Measures (DMMs) implemented by DWA to help increase water use efficiency. The sections of this chapter have been arranged to follow the organization recommended in the DWR Guidebook 2020.

6.9.1 Demand Management Measures for Wholesale Suppliers

Since DWA is not a wholesale supplier, this section is not applicable.

6.9.2 Existing Demand Management Measures for Retail

As part of its comprehensive water conservation program, DWA has implemented the DMMs described in the following sections.

6.9.2.1 Water Waste Prevention Ordinances

On March 1, 2016, DWA adopted Ordinance No. 65: *Ordinance of Desert Water Agency Establishing a Water Conservation Plan and Restricting the Use of Water During Threatened or Existing Water Shortage Conditions*, referred to herein as Ordinance No. 65, a copy of which is attached to DWA's WSCP.

Ordinance No. 65 was adopted by DWA in response to the continued state of emergency issued by Governor Brown resulting from ongoing severe dry conditions throughout California. The provisions of Ordinance No. 65 were developed in accordance with the emergency regulations for urban water suppliers due to continuing water shortage conditions, adopted by the State Water Resources Control Board on March 17, 2015 and May 5, 2015. Water use prohibitions set forth in DWA's Ordinance No. 65 are summarized as follows:

- Washing hardscape, such as driveways, parking lots, and walkways;
- Vehicle washing without the use of buckets and shut off nozzles on hoses;
- Serving water in restaurants unless requested;
- Outdoor irrigation between 7 AM and 7 PM, and on specified days of the week;
- Use of non-recirculating fountains;
- Outdoor irrigation of newly constructed homes and buildings without drip or micro-spray systems;
- Use of potable water to irrigate turf within street medians or public street rights-of-way.

Additionally, DWA has water waste reporting mechanisms in place by phone and on its website at www.dwa.org.

DWA is developing an updated ordinance to reflect the updated Water Shortage Contingency Plan (WSCP).

6.9.2.2 Metering

DWA meters 100 percent of the service connections within its service area and will continue to meter all future new connections. Additionally, the Agency is rolling out an advanced metering infrastructure (AMI) program over the next several years. DWA hopes to have at least hourly water use data available to customers by 2030. In 2021, the US Bureau of Reclamation awarded DWA a \$500,000 grant for one phase of its AMI rollout.

6.9.2.3 Conservation Pricing

Desert Water Agency does not implement conservation or tiered rates for water consumption. Water charges consist of monthly water rates based on the meter size and a flat water rate per each 100 cubic feet. There are currently no plans to implement a tiered rate structure, although the Agency is undergoing a new rate study in 2021. The Agency does have a drought rate surcharge that is triggered by a drop in overall water consumption and a vote of the Board of Directors. The surcharge applies to every unit of water.

While the Agency has not implemented conservation pricing, it has updated bills with graphics that more easily allow a customer to compare their current use to prior use and to understand how their use compares to other customers with meters the same size. This information is provided in order to nudge customers into more water conscious behavior.

6.9.2.4 Public Education and Outreach

Desert Water Agency hosts a monthly information session for customers on a variety of topics, oftentimes related to its incentive programs or water saving tips.

The Agency also has an advertising budget, is active on social media and invests in the regional CV Water Counts conservation outreach program. Part of the regional program also includes a “Water Counts Academy,” which affords local residents an opportunity to learn more about water in our community.

Desert Water Agency offers classroom curriculum that can be offered in class or remotely for grades 4, 6 and 10. Additionally, the Agency offers presentations by its staff.

DWA conducts water audits for large water users, such as homeowners associations and commercial properties, at no charge. Audits can be scheduled virtually. Water audits are aimed at providing customers with an optimum irrigation schedule, identification of system deficiencies, and suggestions for improving system efficiency.

DWA has several incentive programs in place to encourage installation of water-saving fixtures and features. DWA's Smart Irrigation Controller program has been implemented since 2011 and, through December of 2020, has resulted in the installation of 2,572 Smart Irrigation Controllers. Smart Irrigation Controllers allow customization of watering times based on climate, temperature, and evapotranspiration rates. DWA provides the Smart Irrigation Controllers upon request at no cost to the customer; however, some customers have chosen to pay for their own controllers.

DWA launched its turf buy-back program in August 2014. The program was extremely popular during the drought and has experienced a resurgence in popularity among single-family residents in 2020. To date, the program has issued nearly \$3 million in incentives to homeowners associations, businesses and residents for replacing grass with a more water savvy option. The program continues to evolve as demands and community expectations shift. One key example is allowing back yard and private areas to be converted through the program. Additionally, though it was not allowed at the inception of the program, artificial turf is now permitted.

In 2017, Desert Water Agency began an efficient nozzle program. The Agency has incentivized more than 9,200 efficient nozzles since that time. The efficient rotary nozzles replace traditional spray sprinklers for grass areas. Customers can also replace water intensive adjustable bubblers for pressure compensating bubblers for trees and shrubs.

In September of 2019, DWA launched a residential washing machine incentive to replace its popular toilet rebate program. The reason for ending the toilet program was that nearly every toilet model available on the market met efficiency standards so the savings opportunities were limited. The conservation team saw an opportunity to realize savings by encouraging consumers to select water-efficient washing machines since there were still more water-intensive, less expensive models readily available. From when the program began through 2020, the Agency has provided incentives for more than 200 washing machines.

6.9.2.5 Programs to Assess and Manage Distribution System Real Losses

DWA informs customers of possible leaks at their properties when there is excessive consumption compared to prior use. DWA meters all customer connections and water used for construction purposes

through fire hydrants. DWA also keeps records of water used for other purposes, such as city street washing and firefighting. These are all components of annual Water Loss Reports submitted to the State Water Resources Control Board.

DWA funds an aggressive water main replacement program. Leaks are repaired as soon as they are discovered in order to prevent damage and waste of water. All leaks are tracked on maps and through a pipeline inventory computer program. Mains with a history of leaks are prioritized and budgeted for replacement.

In addition, DWA has instructions and videos on its website (at www.dwa.org/checkforleaks) showing customers how to check for leaks on their properties by turning off all water fixtures and reading their water meters.

6.9.2.6 Water Conservation Program Coordination and Staffing Support

DWA's Outreach & Conservation Department is responsible for public education and outreach. Outreach & Conservation Department staff create and distribute digital and printed materials, such as bill inserts and fliers that educate and inform the public about water conservation methods and current incentives and programs. Staff also manage DWA's conservation programs, including incentives, school curriculum, public educational programs, and continuous dialog with community stakeholders.

6.9.2.7 Other Demand Management Measures

DWA's Hospitality Conservation Program is aimed at helping local hotels reduce their water use. This program is free for hotels and provides room cards, door hangers, and pillow cards that allow guests to voluntarily reuse towels and choose when to have their sheets changed. Additionally, there is water conservation material in the "house guidebooks" for many of the vacation rental properties.

6.9.3 Implementation of DMMs

The details of implementation over the past five years are discussed in the previous sections for the applicable DMMs.

Due to our community's continued investment in using less water with the help of DWA programs, the 2020 water use target set forth in its 2010 UWMP was achieved ahead of schedule. The water use targets are described in further detail in Section 5. DWA plans to maintain, or further reduce, its per capita water use through the continued implementation of its existing and potential future water conservation programs.

6.9.4 Water Use Objectives (Future Requirements)

Updated water use objectives are being developed for water suppliers to meet the requirements of the CWC. The final water use objectives for DWA have not yet been determined. The DMMs described in this section are expected to align with DWA's efforts to comply with these objectives when they are finalized.

6.10 Plan Adoption, Submittal, and Implementation

This section includes a discussion of DWA's process for adopting, submitting, and implementing the RUWMP and DWA's WSCP.

6.10.1 Inclusion of All 2020 Data

This report was prepared on a calendar-year basis and includes all water data for the year 2020.

6.10.2 Notice of Public Hearing

DWA is a retail water supplier and has actively encouraged community participation in its urban water management planning efforts since its first UWMP was developed in 1985. Public meetings were held on the 1985, 1990, 1995, 2000, 2005, 2010, and 2015 UWMPs.

Notice of the public hearing for adoption of this 2020 RUWMP and DWA’s WSCP was provided to the City of Palm Springs, the City of Cathedral City, and the County of Riverside, as shown in Table 6-26. Copies of the notices are included in Appendix B.

Subsequent notices were provided with the date and time of the public hearing, and the location where the draft report could be reviewed.

Prior to the public hearing and in accordance with California Government Code §6066, DWA provided notice to the public through its website and published announcements of the public hearing in the newspaper on two occasions before the hearing. Copies of the proof of publication are included in Appendix B of the RUWMP.

Table 6-26. DWR 10-1R Notification to Cities and Counties

City	60 Day Notice	Notice of Public Hearing
Cathedral City	Yes	Yes
Palm Springs	Yes	Yes
County	60 Day Notice	Notice of Public Hearing
Riverside	Yes	Yes

6.10.3 Public Hearing and Adoption

DWA held a public hearing on June 15, 2021 to receive comments on the draft RUWMP and DWA’s WSCP.

Copies of the draft RUWMP and WSCP were made available at the front desk of DWA’s Operations Center during business hours (subject to access restrictions due to the COVID-19 pandemic) and online at www.dwa.org/uwmp. All comments received prior to and during the public hearing were taken into consideration during preparation of the Final RUWMP and DWA’s WSCP.

A copy of the adoption resolution for the RUWMP and DWA’s WSCP is included in Appendix H.

6.10.4 Plan Submittal

DWA will submit the RUWMP and DWA’s WSCP to DWR, the State Library, and cities and counties within DWA’s service area (City of Palm Springs, City of Cathedral City, and County of Riverside) within 30 days after adoption. UWMP submittal to DWR will be done electronically through WUEdata, an online submittal tool.

6.10.5 Public Availability

The Draft RUWMP and DWA’s Draft WSCP were made available to the public for review and comment prior to Plan adoption. Within 30 days after adoption, the Final RUWMP and DWA’s WSCP were provided to the City of Palm Springs, City of Cathedral City, and County of Riverside and was made available for public review online at www.dwa.org/uwmp.

Final copies of this UWMP, as well as any adopted amendments, are available for public review online at www.dwa.org/uwmp.

6.10.6 Notification to Public Utilities Commission

DWA is not regulated by the California Public Utilities Commission (CPUC) and therefore is not required to submit this Plan and Water Shortage Contingency Plan to the CPUC.

6.10.7 Amending an Adopted UWMP or Water Shortage Contingency Plan

If DWA amends the adopted RUWMP or DWA's WSCP, each of the steps for notification, public hearing, adoption, and submittal will also be followed for the amended plan. DWA will also notify the other parties to this RUWMP.

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Chapter 7 Indio Water Authority

7.1 Introduction

The Indio Water Authority (IWA) has participated in the Coachella Valley Regional Urban Water Management Plan (RUWMP) to meet its reporting requirements for 2020. This chapter describes information specific to IWA and its water use efficiency programs.

Updates to the California Water Code (CWC) for the 2020 reporting cycle are discussed in Chapter 1 of the RUWMP.

7.1.1 Chapter Organization

This chapter is organized into the sections recommended by the Guidebook prepared by the California Department of Water Resources (DWR).

- Sub-Chapter 1 provides an introduction to the chapter.
- Sub-Chapter 2 shows details about the preparation of this RUWMP.
- Sub-Chapter 3 presents information about the service area.
- Sub-Chapter 4 presents information about current and projected future water demands.
- Sub-Chapter 5 documents compliance with SB X7-7 through a reduction in per-capita water use.
- Sub-Chapter 6 presents the current and planned future water supplies.
- Sub-Chapter 7 assesses the reliability of supplies and presents a comparison of projected future supplies and demands.
- Sub-Chapter 8 discusses the Water Shortage Contingency Plan (WSCP) that will help guide actions in case of a future water shortage.
- Sub-Chapter 9 presents information about Demand Management Measures (DMMs) being implemented to encourage efficient water use.
- Sub-Chapter 10 presents information about the adoption and submittal process for this RUWMP and the WSCP.

7.1.2 UWMPs in Relation to Other Efforts

The related planning efforts by agencies in the Coachella Valley are described in Chapter 2 of the RUWMP.

7.1.3 UWMPs and Grant or Loan Eligibility

The California Water Code (CWC) requires urban water suppliers to have a current UWMP, deemed sufficient at addressing the CWC requirements by DWR, on file with DWR in order for the urban water suppliers to be eligible for any water management grant or loan administered by DWR. In addition, the UWMP Act requires a retail water agency to meet its 2020 Compliance Urban Water Use Target and report compliance in the 2020 UWMP.

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

The participating agencies' approach to demonstrating reduced reliance on the Delta is described in Chapter 3 of the RUWMP.

7.2 Plan Preparation

This section provides information on IWA’s process for developing this RUWMP, including efforts in coordination and outreach.

7.2.1 Plan Preparation

IWA is participating in the Coachella Valley Regional UWMP to meet its reporting requirements under the UWMP Act.

7.2.2 Basis for Preparing a Plan

Public Water Systems (PWSs) are the systems that provide drinking water for human consumption. These systems are regulated by the State Water Resources Control Board (Board), Division of Drinking Water (DDW). IWA has a PWS with more than 3,000 connections and therefore is required to develop and submit a UWMP. Information about IWA’s PWS is summarized in Table 7-1.

Table 7-1. DWR 2-1R Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 (AF)
CA3310020	Indio Water Authority	23,974	19,880
Total		23,974	19,880

7.2.3 Regional Planning

IWA is participating in the Coachella Valley Regional UWMP with five other water agencies, as described in Chapter 2 of the RUWMP.

7.2.4 Individual or Regional Planning and Compliance

IWA is reporting on SB X7-7 compliance as an individual agency; a regional alliance was not used.

7.2.5 Fiscal or Calendar Year and Units of Measure

IWA does not sell wholesale water and is a retail agency. This report was prepared using calendar years and acre-feet as a measure of water.

7.2.6 Coordination and Outreach

IWA has coordinated with other agencies in the development of this plan. This coordination is described in Chapter 2 of the RUWMP.

IWA does not rely upon water supply from a wholesale agency, as supply is provided exclusively from IWA groundwater wells.

7.3 System Description

This section includes a description of the IWA service area including climate and population demographics.

7.3.1 General Description

Incorporated in 1930, the City of Indio (City) was the first city in the Coachella Valley. The City encompasses approximately 38 square miles with a sphere of influence that adds approximately 22 square miles north of Interstate 10. The existing land uses include commercial, limited industrial, and residential. The majority of land use can be classified as residential, varying in density from equestrian and country estates to high-density multi-family dwellings. The proposed future land uses within the sphere of influence include open space, residential, resource recovery, specific plans (assumed mixed use), business park, and a small amount of community commercial.

The Indio Water Authority (IWA) was formed as a Joint Powers Authority in 2000, wholly owned by the City and Indio Redevelopment Agency, to be the legislative and policy entity responsible for delivering water to residents of the City for all municipal water programs and services. The City Council serves as the IWA five member Board.

Since the establishment of IWA, service connections have increased from approximately 12,100 to over 23,000 active meter accounts, with the majority of the new growth occurring north of Interstate 10. In 2020, IWA supplied approximately 20,000 AF of water to businesses and residents. As one of the fastest growing municipal utilities in the Coachella Valley, IWA is committed to maintaining a sustainable water supply for its residential and commercial customers.

IWA extracts groundwater to meet the needs of its existing customer. The groundwater is drawn from the Indio Subbasin and is delivered to the service area via a pressurized distribution system of 326 miles of pipe supplied by 10 active wells. IWA also has emergency intertie connections with Coachella Valley Water District (CVWD) and the City of Coachella.

Since 2005, IWA has established active water conservation, water reuse, and groundwater recharge planning efforts to ensure adequate water availability and system capacity to meet the growing needs of the City. These planning efforts include: residential and commercial landscape and irrigation upgrade rebates, water audits, water conservation kits, washing machine and toilet rebates, water waster mobile app and hotline, budget-tiered rate structure, water conservation workshops, water misuse program, and a Memorandum of Understanding between IWA and Valley Sanitation District (VSD) to collaborate in the construction of capital improvement projects that support groundwater recharge efforts.

7.3.2 Service Area Boundary Maps

IWA's service area boundary is shown in Figure 7-1.

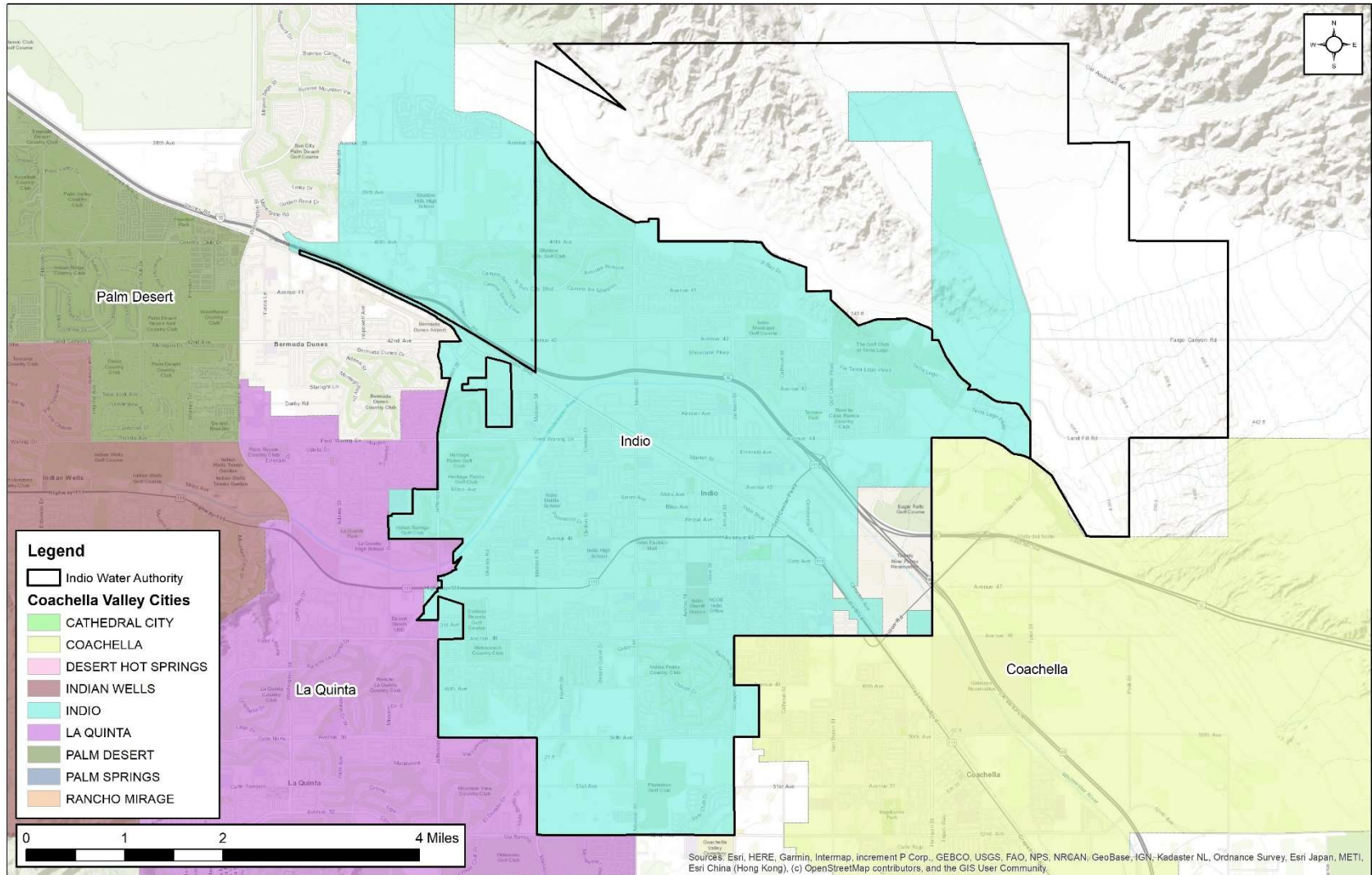


Figure 7-1. IWA Service Area Boundary

7.3.3 Service Area Climate

The climate of the Coachella Valley is arid characterized by low annual rainfall, low humidity, high summer temperatures, abundant sunshine, and relatively mild winters. The average summer high temperature in Indio is 103 degrees Fahrenheit (F); the average winter low temperature is 43 degrees F. Precipitation typically occurs during the winter months with an annual mean rainfall of approximately 3.9 inches (in).

Monthly climate data are summarized in Table 7-2 and are shown in Figure 7-2.

Table 7-2. Monthly Average Climate Data

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	72	75	82	87	93	103	106	106	101	90	80	65	88
Average Minimum Temperature (F)	42	45	52	58	63	70	76	75	69	59	49	39	58
Average Total Precipitation (in)	0.5	0.6	0.7	0.3	0.1	0.1	0.2	0.1	0.1	0.4	0.2	0.7	3.8
Evapotranspiration, ETo (in)	2.7	3.6	6.0	7.7	9.2	9.8	9.7	9.1	7.2	5.2	3.3	2.3	75.7

Notes:

Data from California Irrigation Management Information System (CIMIS) Station 200, Indio 2. Data from May 2006 through December 2020

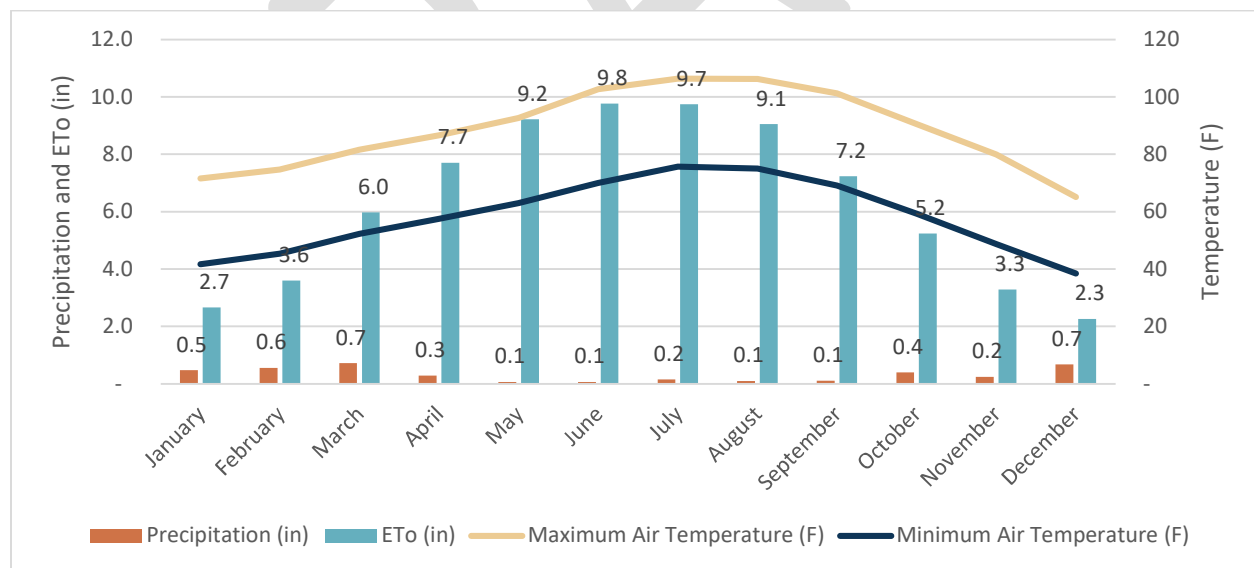


Figure 7-2. Monthly Average Climate Data

A discussion of the potential impacts of climate change on the region is included in Chapter 3 of the RUWMP.

7.3.4 Service Area Population and Demographics

The current population within the service area was estimated using DWR's population tool. Projected population is based on adopted growth forecasts prepared by the Southern California Association of Governments (SCAG).

The current and projected population within IWA's service area is presented in Table 7-3.

Table 7-3. DWR 3-1R Current and Projected Population

Population Served	2020	2025	2030	2035	2040	2045
IWA	78,940	93,762	99,659	105,557	111,454	117,351

An important demographic consideration within the Coachella Valley is that the region has a large seasonal population. Standard DWR water use per capita calculations only consider the permanent population but include all water users (permanent and seasonal), leading to higher consumption values in gallon per capita per day (GPCD).

IWA's service area is located entirely within the City of Indio. A summary of demographic information for the City of Indio is presented in Table 7-4.

Table 7-4. City of Indio Demographic Data

Age Distribution		Race / Ethnicity Distribution		Income and Household Size		Household Income Distribution	
Age	Percent	Race/Ethnicity	Percent	Parameter	Amount	Income	Percent
19 years and under	23.8%	White	34.7%	Median household income	\$74,774	\$24,999 and under	23.4%
20-34 years	19.7%	Black	4.9%	Average household income	\$93,308	\$25,000-\$49,999	23.7%
35-54 years	21.7%	Native American	0.0%	Per capita income	\$33,704	\$50,000-\$74,999	18.8%
55-64 years	12.1%	Asian / Pacific Islander	1.7%	Percent of Population Below Poverty Level	11.3%	\$75,000-\$99,999	11.6%
Over 65 years	22.7%	Hispanic	57.2%	Average Household Size	2.86	\$100,000-\$149,999	12.4%
		Other	1.4%			\$150,000 and above	10.2%

Notes: Totals may not equal 100% due to rounding errors.

Reference: American Community Survey 2014-2019 (United States Census Bureau, 2021)

7.3.5 Land Uses within Service Area

Land use jurisdictions within most of IWA’s service area falls to the City of Indio and Riverside County. During its preparation of regional growth projections, SCAG gathered input and coordinated outreach with both jurisdictions. IWA has coordinated with these agencies to align its growth projections with local plans.

7.4 Water Use Characterization

This section describes historic and current water usage and presents projected future demands within IWA’s service area. Water usage is presented by customer class such as residential, institutional, landscape, and other purposes. Demand projections contain an inherent level of uncertainty and are intended to provide a general sense as to water supply requirements for the future. Demand projections are dynamic, often changing as a result of economic, political, and environmental pressures. Several factors can affect demand projections, including:

- Land use revisions
- New regulations
- Consumer choice
- Economic conditions
- Transportation needs
- Highway construction
- Environmental factors
- Conservation programs
- Plumbing codes

These factors can impact not only the amount of water needed, but also the timing and location of when and where it is needed. Past experience in the City of Indio has indicated that population growth is the most influential factor in determining water demand projections. During the recent economic recession, there was a major downturn in development and new construction, consequently reducing projected demands for water.

The projections do account for IWA’s current water conservation efforts, which are projected to continue to reduce water demand.

7.4.1 Non-Potable Versus Potable Water Use

IWA delivers potable water to its customers. Potential future recycled water supply would be used for groundwater replenishment and would not be delivered to customers.

7.4.2 Past, Current, and Projected Water Use by Sector

Water use is broken down by sector. The use sectors are summarized in Table 7-5.

Table 7-5. Water Use Sectors

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

Sector	Description
Multi-Family Residential	Multiple dwelling units contained within one building or several buildings in a single complex.
Commercial	A water user that provides or distributes a product or service.
Landscape	Water connections supplying water solely for landscape irrigation. Such landscapes may be associated with multi-family, commercial, industrial, or institutional/governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation.
Distribution System Losses	Reporting of system losses is required by the CWC in the 2020 UWMPs.
Other (Fire Services)	Fire services such as hydrant flows are unbilled, authorized uses of water.
Other	Other metered water use that is not assigned a specific billing category, such as metered construction use, etc.

Non-revenue water is the difference between the water production pumped into the system and the billed consumption used by customers. Non-revenue water includes some authorized non-billed use, like firefighting, as well as real and apparent losses from the system.

IWA currently does not provide any recycled water, and all water served in the IWA service area is potable supplied from groundwater basin.

Distribution system water losses are the real and apparent water losses from the water distribution system and the supplier’s storage facilities, up to the point of customer consumption. IWA has completed annual water audits using the American Water Works Association (AWWA) Water Audit Method. The results from the five most recent audits are summarized in Table 7-6. The audits are included in Appendix G of the RUWMP.

Table 7-6. DWR 4-4R 12 Month Water Loss Audit Reporting

Report Period Start Date		Volume of Water Loss (AFY)
MM	YYYY	
07	2011	1,705
07	2016	995
07	2017	1004
07	2018	1,176
07	2019	1,347

The 2020 water use is summarized in Table 7-7.

Table 7-7. DWR 4-1R Actual Demands for Water (AFY)

Use Type	Additional Description	Level of Treatment When Delivered	2016	2017	2018	2019	2020
Single Family		Drinking Water	10,000	10,756	11,095	12,235	10,740
Multi-Family		Drinking Water	1,498	1,511	1,805	1,918	1,714
Commercial / Institutional		Drinking Water	2,566	2,552	2,821	2,931	2,134
Industrial		Drinking Water	130	137	142	170	136
Landscape		Drinking Water	1,923	2,281	2,347	2,459	2,033
Other	Non-Revenue	Drinking Water	978	1,055	1,415	(898)	3,122
Total			17,095	18,291	19,624	18,815	19,880

IWA is participating in the update of the Indio Subbasin Alternate Plan Update being prepared to meet requirement of the Sustainable Groundwater Management Act (SGMA). The participating agencies coordinated efforts with demand projections being prepared for the Indio Subbasin Alternative Plan and the Mission Creek Subbasin Alternative Plan. The demand projection approach included several steps:

- The projections were based on the regional growth forecast prepared by the Southern California Association of Governments (SCAG) as part of their regional transportation plan. SCAG's most recent transportation plan is referred to as Connect SoCal⁹. SCAG gathered input from cities and counties throughout Southern California about expected growth and development for the next 25 years and incorporated the land use designations in each jurisdiction's General Plan. The SCAG analysis includes estimates of population, households, and employment in each Traffic Analysis Zone (TAZ) in their study area¹⁰.
- Additional analysis of vacancy rates was performed to estimated baseline and projected housing units for the study area, including housing units used by seasonal residents and other part-time uses.
- Future estimates of employment were used to drive future growth in Commercial, Industrial, and Institutional (CII) demands
- Five years of customer billing data were used to develop unit demand factors. These factors have units of gallons per housing unit for residential and landscape uses and gallons per employee for CII uses.
- Water losses were estimated using water loss audits
- Demands were adjusted for two types of conservation savings:
 - Indoor passive conservation savings from the natural replacement of indoor devices
 - Outdoor conservation savings from the implementation of the Model Water Efficiency Landscape Ordinance (MWELO) and agency-specific requirements for future developments.

Estimates of future demand are shown in Table 7-8.

⁹ Information about SoCal Connect available at <https://scag.ca.gov/connect-social>

¹⁰ A summary of SCAG's demographic forecast available at https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf?1606001579

Table 7-8. DWR 4-2R Projected Demands for Water

Use Type	Additional Description	Projected Water Use (AFY)				
		2025	2030	2035	2040	2045
Single Family		12,790	13,828	14,822	15,532	16,067
Multi-Family		1,875	1,985	2,135	2,303	2,553
Commercial / Industrial / Institutional		3,113	3,254	3,397	3,468	3,540
Landscape		5,752	6,171	6,590	6,934	7,277
Other		5	6	6	6	7
Losses		1,257	1,348	1,434	1,495	1,553
Total		24,792	26,592	28,384	29,738	30,997

Demand projections prepared for this plan considered the incorporation of codes and standards. The draft Indio Subbasin Alternative Plan Update included modeling of anticipated future water savings due to fixture replacements. The analysis included indoor savings related to toilets, showerheads, dishwashers, clothes washers, and urinals (categorized as indoor water use) as well as outdoor water use. Indoor conservation is mainly a result of government mandated water efficiency requirements for fixtures, defined as “passive savings”. The model considers these mandates and the average useful life and replacement rates for each type of fixture based on standard industry estimates and plumbing fixture saturation studies. It assumes that all new construction complies with the plumbing codes in effect at that time and that when a device is replaced, the new device is also in compliance with the current plumbing codes. Estimated frequency of use for each type of fixture as determined by the Water Research Foundation and American Water Works Association Research Foundation were multiplied by the number of housing units to produce the total indoor passive conservation savings.

Anticipated outdoor water use savings were based on the implementation of the California Model Water Efficiency Landscape Ordinance (MWELo) which is the standard for outdoor water conservation for the state. The resulting water savings from the MWELo are estimated using an Evapotranspiration Adjustment Factor (ETAF) which adjusts the reference ET for plant requirements and irrigation efficiency. No savings were assumed from special landscape areas, such as recreational areas, as these are allotted extra water use as well as existing landscapes as these savings are not considered passive since there are incentives under conservation programs.

The anticipated savings due to these measures are summarized in Table 7-9. These savings have been incorporated into the water demand projections presented in Table 7-8.

Table 7-9. Anticipated Water Savings Due to Conservation (AFY)

	2020	2025	2030	2035	2040	2045
Indoor Passive Savings	198	512	714	872	993	1,094
Outdoor Passive Savings	340	717	1,088	1,449	1,721	1,972
Total Passive Savings	538	1,229	1,802	2,321	2,714	3,066

Total gross water use (including expected future recycled water use) is shown in Table 7-10.

Table 7-10. DWR 4-3R Total Gross Water Use

	2020	2025	2030	2035	2040	2045
Potable and Raw Water (AFY) From DWR Table 4-1R and 4-2R	19,880	24,792	26,592	28,384	29,738	30,997
Recycled Water Demand (AFY) From DWR Table 6-4R	0	0	5,000	5,000	5,000	5,000
Total Water Use	19,880	24,792	31,592	33,384	34,738	35,997

7.4.3 Worksheets and Reporting Tables

IWA has completed the required UWMP submittal tables and included them in Appendix D of this RUWMP.

7.4.4 Water Use for Lower Income Households

California Water Code 10631.1 requires retail urban water suppliers to provide water use projections for future single-family and multifamily residential housing needed for lower income households. These water use projections are to assist a supplier in complying with state code which grants priority of the provision of service to housing units that is affordable to lower income households.

The City of Indio 2014-2021 Housing Element (2014) projects needing 1,201 low to extremely low income housing units by 2021 that meet the definition of the Southern California Association of Governments Regional Housing Needs Assessment Plan. A similar proportion of future lower income housing units is estimated for years 2025 through 2040.

IWA has summarized the projected water use for lower income households assuming the following:

1. the average persons per household remains constant at the 2014 level of 3.29 persons per household,
2. lower income housing needs are proportional to the projected population growth, and
3. daily water use per capita is equal to the 2020 water use target.

The estimated demand for lower-income households is approximately 1,500 AFY. This demand has been included in the demand projections prepared for this plan.

7.4.5 Climate Change Considerations

Increased drought risk as a result of climate change may impact demands in the future. A combination of state- and local-led demand management measures may reduce demand for irrigation via landscape ordinances, while public outreach and education can lead to reductions in water demands through conservation measures.

A more detailed discussion of potential climate change impacts is presented in Chapter 3 of the RUWMP.

7.5 SB X7-7 Baseline and Targets

IWA's methods for calculating baseline and target water consumption values are described in this section. This section also documents IWA's compliance with the 2020 Urban Water Use Target.

7.5.1 Wholesale Suppliers

IWA is not a wholesale supplier, and therefore this section is not applicable.

7.5.2 SB X7-7 Forms and Tables

IWA has completed the SB X7-7 2020 Compliance Form and included it in Appendix E.

7.5.3 Baseline and Target Calculations for 2020 UWMPs

IWA calculated its baselines and targets for its 2015 UWMP, and IWA has not re-calculated its baselines or targets.

7.5.4 Service Area Population and Gross Water Use

IWA's service area population for 2020 was estimated using the DWR Population Tool. The tool requires the number of single-family and multi-family residential connections to estimate population. Since the number of connections was not available for the 1990 or 2000 Census years, the persons per single-family and multi-family connections was based on the 2010 Census year and number of connections; in 2010, there were an average of 2.74 persons per single-family connection and 48.01 persons per multi-family connection.

The number of service connections were available for 2020, so population for 2020 was estimated using the number of connections and calculated persons per connection from 2010.

Gross water use was determined using production records. IWA's sole source of supply is groundwater. There have been no imports, exports, changes in system storage, indirect recycled water use, or agricultural deliveries.

7.5.5 2020 Compliance Daily Per Capita Water Use (GPCD)

IWA's average use during the baseline and confirmed target are shown in Table 7-11.

Table 7-11. DWR 5-1R Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline Use (GPCD)	Confirmed 2020 Target (GPCD)
10-15 Year	2001	2010	327	262
5 Year	2003	2007	333	
All values are in Gallons per Capita per Day (GPCD)				

Allowable adjustments include extraordinary events, weather normalization, and economic adjustments. No adjustments are made to IWA's 2020 water use. IWA's calculated 2020 water use and compliance with its confirmed target are shown in Table 7-12.

Table 7-12. DWR 5-2R 2020 Compliance

Actual 2020 Use (GPCD)	Optional Adjustments to 2020 Use		2020 Confirmed Target (GPCD)	Supplier Achieved Targeted Reduction in 2020
	Total Adjustments	Adjusted 2020 Use (GPCD)		
225	0	225	262	Yes
All values are in Gallons per Capita per Day (GPCD)				

7.5.6 Regional Alliance

An urban water supplier may satisfy the requirements of CWC 10620 by participation in area wide, regional, watershed, or basin wide urban water management planning (Regional Alliance) where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use. IWA did not choose to comply with the SB X7-7 requirements through a Regional Alliance.

7.6 Water Supply Characterization

This section describes the water supplies currently available to IWA and those planned for the 25-year planning period.

7.6.1 Water Supply Analysis Overview

Throughout the Coachella Valley, the only direct water source employed for potable urban water use is local groundwater.

7.6.2 Supply Characterization

This discussion includes the types of water supply considered by DWR.

7.6.2.1 Purchased or Imported Water

IWA does not use purchased or imported water. Although both CVWD and DWA have contracted for State Water Project (SWP) and Colorado River water, these waters are currently used only to either replenish the groundwater basin via recharge, or for agricultural irrigation and other non-urban purposes. Colorado River water is delivered to the Coachella Valley via the Coachella Canal, while SWP water is exchanged for Colorado River water from MWD. CVWD currently uses its Colorado River water supply for agricultural and golf course irrigation, groundwater recharge, and other non-potable uses.

7.6.2.2 Groundwater

Groundwater has historically been the sole source of supply for IWA. Supplies for the City of Indio are primarily from the lower aquifer in the Indio Subbasin, the largest subbasin in the Coachella Valley Groundwater Basin. Because the Indio Subbasin is an un-adjudicated basin, IWA does not hold specific water rights, but rather pumps supplies from the aquifer as needed to meet demands within its service area. More information about the Indio Subbasin is presented in Chapter 3 of the RUWMP.

IWA currently has 20 operational supply wells. Pumping capacities for these wells range from 1,200 gpm to 3,500 gpm, with a total pumping capacity of 74,600 AFY. IWA historical groundwater pumping is summarized in Table 7-13.

Table 7-13. DWR 6-1R Groundwater Volume Pumped (AFY)

Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Indio Subbasin	17,072	18,267	19,567	18,793	19,880
Total		17,072	18,267	19,567	18,793	19,880

7.6.2.3 Surface Water

IWA does not currently use or intend to use any surface water (non-imported surface water) as part of its water supply.

7.6.2.4 Stormwater

IWA does not currently use stormwater as a water supply. All stormwater either percolates into the groundwater basin or is conveyed to the Coachella Valley Stormwater Channel (CVSC). Stormwater capture may become a potential future supply but is not currently being considered due to the low average volume of water available for capture. As the local flood control authority, CVWD considers delivery of treated stormwater as a potential future potable or non-potable water supply.

7.6.2.5 Wastewater and Recycled Water

This section of the UWMP describes the existing and future recycled water opportunities available to IWA's service area. Wastewater treatment services for the City of Indio are predominantly provided by Valley Sanitary District (VSD). IWA and VSD are working together to evaluate a recycled water program to augment the local water supply. IWA completed a 2011 Recycled Water Master Plan and 2016 Recycled Water Feasibility Study to assess potential customers and infrastructure build-out to support recycled water service within the service area. The City of Indio is served by two wastewater treatment plants (WWTPs): one is owned by VSD and the other by CVWD. The VSD WWTP is located on Van Buren Street in the City of Indio and provides services to 96 percent of the City's population. Currently, VSD discharges the effluent to the CVSC. The VSD WWTP operates parallel treatment processes: an activated sludge treatment process and a biological treatment pond process. Any effluent that is not reused is discharged to the CVSC which flows directly to the Salton Sea.

CVWD's WRP-7 treats a small percentage of the City's wastewater. The facility is located at Avenue 38 and Madison Street in the City of Indio. WRP-7 is a tertiary treatment facility, and the effluent produced is recycled for non-potable uses for CVWD customers.

Wastewater collection and treatment in the IWA service area is summarized in Table 7-14 and Table 7-15.

Table 7-14. DWR 6-2R Wastewater Collected within Service Area in 2020

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated	Wastewater Volume Collected from UWMP Service Area in 2020 (AFY)	Name of Wastewater Agency Receiving Collected Wastewater	Wastewater Treatment Plant Name	Wastewater Treatment Plant Located within UWMP Area	WWTP Operation Contracted to a Third Party
Valley Sanitary District	Estimated	6,261	Valley Sanitary District	Valley SD WWTP	Yes	No
Coachella Valley Water District	Estimated	100	Coachella Valley Water District	WRP-7	Yes	No
Total		6,361				

Table 7-15. DWR 6-3R Wastewater Treatment and Discharge within Service Area in 2020

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number	Method of Disposal	Plant Treats Wastewater Generated Outside the Service Area	Treatment Level	2020 Volumes (AFY)				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Valley SD WWTP	Coachella Valley Stormwater Channel	Stormwater channel	CA0104477-001 7A333069001	Storm Channel	Yes (portions of the City of Coachella and County of Riverside)	Secondary	6,261	6,261	0	0	0
Total							6,261	6,261	0	0	0

Note: Treatment at CVWD WRP-7 is reported in CVWD chapter of the RUWMP.

The Indio Water Authority and the Valley Sanitary District formed the East Valley Reclamation Authority (EVRA) in 2013. EVRA is a Joint Powers Authority created to develop an indirect potable reuse project, to supplement a sustainable water supply. The existing VSD WWTP facilities consist of primary and secondary treatment facilities, which discharge to the CVSC. Development of a new recycled water supply would require the addition of tertiary treatment facilities, and potentially advanced treatment, depending on the ultimate use of the recycled water.

IWA's 2016 Recycled Water Feasibility Study evaluated a proposed recycled water system. However, due to lack of irrigation customers, a purple pipe system is not feasible.

The projected uses of recycled water are shown in Table 7-16. The 2015 UWMP projected recycled water uses for 2020 are compared with actual recycled water use in Table 7-17.

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Table 7-16. DWR 6-4R Recycled Water Within Service Area (AFY)

Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
Agricultural Irrigation										
Landscape Irrigation (excludes 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				Advanced	0	0	5,000	5,000	5,000	5,000
Reservoir Water Augmentation (IPR)*										
Direct Potable Reuse										
Total					0	0	5,000	5,000	5,000	5,000

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Table 7-17. DWR 6-5R Recycled Water Use Projection Compared to Actual

Use Type	2015 Projection for 2020 (AFY)	2020 Actual Use (AFY)
Agricultural Irrigation		
Landscape Irrigation (excludes golf courses)	50	0
Golf Course Irrigation	960	0
Commercial Use		
Industrial Use		
Geothermal and Other Energy Production		
Seawater Intrusion Barrier		
Recreational Impoundment		
Wetlands or Wildlife Habitat		
Groundwater Recharge (IPR)		
Surface Water Augmentation (IPR)		
Direct Potable Reuse		
Total	1,010	0

There are a few methods that have been considered to provide an incentive to recycled water users. One method is to issue a monthly rebate directly to each recycled water user. The other is utilizing a two-fold approach to encourage recycled water use. The two-fold approach relies on making recycled water available at a reduced rate and to adopt a Recycled Water Ordinance, mandating recycled use for certain applications. It is unknown at this time how the combination of incentives and requirements will impact projected recycled water use. Further, if recycled water can be offered to potential customers at competitive costs when compared to groundwater pumping, potential customers can be converted to actual future customers.

7.6.2.6 Desalinated Water Opportunities

Along the California coastline, from the San Francisco Bay to San Diego, numerous studies are currently underway investigating the feasibility of desalting seawater. Recent technological advances in various desalination processes have significantly reduced the cost of desalinated water to levels that are comparable and, in some instances, competitive with other alternatives for acquiring new water supplies. Desalination technologies are becoming more efficient, less energy demanding, and less expensive; however, they are still considered energy intensive relative to other treatment technologies. In December 2015, the Claude "Bud" Lewis Carlsbad Desalination Plant, a 50 million gallon per day (56,000 acre-feet per year (AFY)) seawater desalination plant located adjacent to the Encina Power Station in Carlsbad, California, commenced operation. This facility provides water to the San Diego County Water Authority under a 30-year purchase agreement.

One water management alternative under consideration is the possibility of IWA investing in a new desalination plant, planned by other water agencies such as MWD and San Diego County, in exchange for receiving a portion of their Colorado River water deliveries. If IWA were able to invest in such a facility, IWA would also have to make arrangements for acquiring or exchanging the water. This may require a turnout on the Colorado Aqueduct in order to exchange for Colorado River water with MWD. Additional costs may be associated with such an agreement.

7.6.2.7 Water Exchanges and Transfers

This section discusses potential exchanges and transfers with other water suppliers.

Water exchanges are typically water delivered by one water user to another water user, with the receiving water user providing water in return at a specified time or when the conditions of the parties' agreement are met. Water exchanges can be strictly a return of water on a basis agreed upon by the participants or can include payment and the return of water. The water returned may or may not be an "even" exchange. IWA is not currently involved in any water exchanges. The predominant water exchange that occurs in the Coachella Valley is SWP water exchanged for Colorado River water, which is discussed in Chapter 3 of the RUWMP.

The CWC defines a water transfer as a temporary or long-term change in the point of diversion, place of use, or purpose of use due to a transfer, sale, lease, or exchange of water or water rights. Temporary water transfers have a duration of one year or less. Long-term water transfers have a duration of more than one year. IWA has no current plans for water transfers.

IWA has three emergency intertie connections with CVWD and the City of Coachella. These are summarized in Table 7-18. IWA is in discussions with Myoma Dunes for a new intertie west of IWA's system.

Table 7-18. Emergency Interties

Location	As-Built Date	Current Configuration	Capacity
Northwest corner of Avenue 40 and Madison St.	8-20-2007	8" Cla-valve and meter; currently valves are off with no current set points on Cla-valve	3,100 gpm estimated
Northeast corner of Congress St. and Philadelphia Ave.	12-1-2003	One valve with 4 stub outs; no meter or Cla-valve	3,800 gpm – estimated with 6" diameter at 62 PSI to atmosphere
South side of Miles Ave., 250' west of Monticello Ave.	5-21-2004	Currently valves are off with no current set points on clay valve; it has a 6" Cla-valve and meter	4,000 gpm – estimated with 6" diameter at 82 PSI to atmosphere

7.6.2.8 Future Water Projects

IWA is involved in evaluating several potential programs to increase water supply. The joint project with EVRA is currently planned for implementation by 2030. Next steps include developing the feasibility study to evaluate treatment needs and potential locations for recharge basins. The estimated capacity is 5,000 AFY. Planned water supply projects are listed in Table 7-19.

Table 7-19. DWR 6-7R Expected Future Water Supply Projects or Programs

Name of Future Projects or Programs	Joint Project with Other Suppliers	Agency Name	Description	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier (AFY)
Groundwater Recharge	Yes	IWA, VSD	Recycled water for groundwater recharge	2030	Average Year	5,000

7.6.2.9 Summary of Existing and Planned Sources of Water

Summaries of the existing and planned water supply volumes by source are presented in Table 7-20 and Table 7-21.

Table 7-20. DWR 6-8R Actual Water Supplies (AFY)

Water Supply	Additional Detail on Water Supply	2020	
		Actual Volume	Water Quality
Groundwater (not desalinated)	Indio Subbasin	19,880	Drinking Water
Total		19,880	

Table 7-21. DWR 6-9 R Projected Water Supplies (AFY)

Water Supply	Additional Detail on Water Supply	2025	2030	2035	2040	2045
Groundwater (not desalinated)	Indio Subbasin	24,792	26,592	28,384	29,738	30,997
Recycled Water	EVRA		5,000	5,000	5,000	5,000
Total		24,792	31,592	33,384	34,738	35,997

7.6.2.10 Special Conditions

Although groundwater is a relatively resilient water supply with respect to climate change, long periods of drought/dry weather may reduce the availability of imported water for groundwater recharge. A more detailed discussion of potential climate change impacts is presented in Chapter 3 of the RUWMP.

7.6.3 Submittal Tables Using Optional Planning Tool

Because supply availability does not vary seasonally, IWA has not completed the DWR Optional Planning Tool.

7.6.4 Energy Use

IWA has compiled data to document the energy used for water management operations. IWA used the Total Utility Approach to estimate the energy intensity of its water management operations.

The results are presented in Table 7-22.

Table 7-22. DWR O-1B Energy Intensity Reporting

Table O-1B: Recommended Energy Reporting - Total Utility Approach				
Enter Start Date for Reporting Period	1/1/2019	Urban Water Supplier Operational Control		
End Date	12/31/2019			
Is upstream embedded in the values reported?	No	Sum of All Water Management Processes	Non-Consequential Hydropower	
<i>Water Volume Units Used</i>	<i>AF</i>	Total Utility	Hydropower	Net Utility
<i>Volume of Water Entering Process (volume unit)</i>		18,793	0	18,793
<i>Energy Consumed (kWh)</i>		11,925,522	0	11,925,522
<i>Energy Intensity (kWh/volume)</i>		634.6	0.0	634.6
Quantity of Self-Generated Renewable Energy				
	kWh			
Data Quality (<i>Estimate, Metered Data, Combination of Estimates and Metered Data</i>)				
<i>Combination of Estimates and Metered Data</i>				
Data Quality Narrative				
Energy use data was obtained from electricity consumption records maintained by the agency.				
Narrative				
The agency uses energy for groundwater production from wells, pumping at booster stations from lower pressure zones to higher pressure zones, and treatment processes.				

7.7 Water Service Reliability and Drought Risk Assessment

The California Urban Water Management Planning Act (Act) requires urban water suppliers to assess water supply reliability that compares total projected water use with the expected water supply over the next 20-25 years in five-year increments. The Act also requires an assessment for a single dry year and multiple dry years. This section presents the reliability assessment for IWA's service area.

7.7.1 Reliability Overview

It is the stated goal of IWA to deliver a reliable and high-quality water supply to its customers, even during dry periods. IWA has already achieved a reduction in water use from its baseline greater than 20 percent. The UWMP will continue to ensure that urban water resources are reliably and sustainably secured for existing and future customers of IWA.

7.7.2 Water Service Reliability Assessment

The Coachella Valley Groundwater Basin is un-adjudicated and has sufficient storage to meet the projected pumping conditions on the basin for the next 25 years, and beyond. Thus, issues related to reliability of supply and vulnerability to seasonal and climatic changes do not significantly affect the reliability of the Coachella Valley Groundwater Basin. All of the water currently and historically consumed by IWA comes from the groundwater basin.

Because groundwater supplies have not been vulnerable to seasonal or climatic conditions, the supplies are limited only by available IWA pumping capacity. The water quality of IWA’s water supply, consisting entirely of pumped groundwater, meets applicable regulatory criteria.

The average year is a year, or an averaged range of years, that most closely represents the median water supply available to IWA. The UWMP Act uses the term “normal” conditions.

The single dry year is the year that represents the lowest water supply available to IWA. This UWMP uses 2014 for the single-dry year, as it corresponds to a record-dry year with the lowest SWP Table A Amount allocation ever set by DWR.

The multiple dry year period is the period that represents the lowest average water supply availability to IWA for a consecutive multiple year period (five years or more). This is generally considered to be the lowest average runoff for a consecutive multiple year period (five years or more) for a watershed since 1903. This UWMP uses 2012 to 2016 for the multiple-dry year period.

The available water supplies and demands for IWA’s service area were analyzed to understand the region’s ability to satisfy demands during three scenarios: an average water year, single-dry year, and multiple-dry years. The years and availability are summarized in Table 7-23.

Table 7-23. DWR 7-1R Basis of Water Year Data

Year Type	Base Year	Available Supply if Year Type Repeats
		Percent of Average Supply
Average Year	2020	100%
Single-Dry Year	2014	100%
Consecutive Dry Years 1st Year	2012	100%
Consecutive Dry Years 2nd Year	2013	100%
Consecutive Dry Years 3rd Year	2014	100%
Consecutive Dry Years 4th Year	2015	100%
Consecutive Dry Years 5th Year	2016	100%

Reliability during a normal year is shown in Table 7-24.

Table 7-24. DWR 7-2R Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY) From DWR Table 6-9R	24,792	31,592	33,384	34,738	35,997
Demand Totals (AFY) From DWR Table 4-3R	24,792	31,592	33,384	34,738	35,997
Difference	0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

Reliability during a single-dry year scenario was assumed to be similar to the average year scenario. Supply will consist of pumped groundwater and recycled water. Any additional supply needed will be pumped from the groundwater basin. Reliability during a single dry year is shown in Table 7-25.

Table 7-25. DWR 7-3R Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY)	24,792	31,592	33,384	34,738	35,997
Demand Totals (AFY)	24,792	31,592	33,384	34,738	35,997
Difference	0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

Reliability during a multiple-dry year scenario was assumed to be similar to the average year scenario. Any additional supply needed will be pumped from the groundwater basin. The multiple dry year supply scenario is shown in Table 7-26.

Table 7-26. DWR 7-4R Multiple Dry Years Supply and Demand Comparison

		2025	2030	2035	2040	2045
First Year	Supply Totals (AFY)	24,792	31,592	33,384	34,738	35,997
	Demand Totals (AFY)	24,792	31,592	33,384	34,738	35,997
Difference		0	0	0	0	0
Second Year	Supply Totals (AFY)	24,792	31,592	33,384	34,738	35,997
	Demand Totals (AFY)	24,792	31,592	33,384	34,738	35,997
Difference		0	0	0	0	0
Third Year	Supply Totals (AFY)	24,792	31,592	33,384	34,738	35,997
	Demand Totals (AFY)	24,792	31,592	33,384	34,738	35,997
Difference		0	0	0	0	0
Fourth Year	Supply Totals (AFY)	24,792	31,592	33,384	34,738	35,997
	Demand Totals (AFY)	24,792	31,592	33,384	34,738	35,997
Difference		0	0	0	0	0
Fifth Year	Supply Totals (AFY)	24,792	31,592	33,384	34,738	35,997
	Demand Totals (AFY)	24,792	31,592	33,384	34,738	35,997
Difference		0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.						

Historically, the groundwater basin has shown signs of overdraft, which could impact reliability in the very long term. The implementation of ongoing groundwater management efforts (see Chapter 3 of the RUWMP) seeks to ensure groundwater levels are maintained to mitigate potential overdraft conditions of the basin. IWA also continues to develop and expand an Urban Water Use Efficiency and Conservation Program to implement Demand Management Measures (DMMs) and other conservation programs to decrease the annual volume of water consumed.

7.7.3 Drought Risk Assessment

A new reporting requirement for the 2020 UWMP is a five-year Drought Risk Assessment (DRA). The DRA is based on projections of demand and available supply for the next five years.

Demands are expected to increase to the projected demands for 2025. It is expected that conservation messaging and programs will prevent any significant increase in demands by existing customers due to dry conditions. The groundwater supply is reliable for a five-year dry period as the volume in storage can be drawn down during a dry period.

The results of the DRA are summarized in Table 7-27.

DRAFT

Table 7-27. DWR 7-5 Five-Year Drought Risk Assessment

2021	Gross Water Use (AFY)	20,898
	Total Supplies (AFY)	20,898
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2022	Gross Water Use (AFY)	21,917
	Total Supplies (AFY)	21,917
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2023	Gross Water Use (AFY)	22,935
	Total Supplies (AFY)	22,935
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2024	Gross Water Use (AFY)	23,954
	Total Supplies (AFY)	23,954
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2025	Gross Water Use (AFY)	24,972
	Total Supplies (AFY)	24,972
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
<p>Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.</p>		

7.8 Water Shortage Contingency Plan

Water supplies may be interrupted or reduced significantly in a number of ways, such as a drought which limits supplies, an earthquake which damages water delivery or storage facilities, a regional power outage, or a toxic spill that affects water quality.

IWA has developed a Water Shortage Contingency Plan (WSCP) to help manage potential future water shortages. The WSCP is being adopted separately from the RUWMP and may be modified as needed based on changing conditions. The WSCP is an attachment to this RUWMP.

7.9 Demand Management Measures

Establishing goals and choosing water conservation measures is a continuing planning process. Goals are developed, adopted, and then evaluated periodically. Specific conservation measures are phased in and then evaluated for their effectiveness, achievement of desired results, and customer satisfaction. Water conservation can achieve a number of goals such as:

- Reducing groundwater overdraft
- Reducing average annual potable water demands
- Reducing urban runoff
- Reducing demands during peak seasons
- Meeting drought restrictions

This section describes Demand Management Measures (DMMs) implemented by IWA to encourage efficient use of water.

7.9.1 Demand Management Measures for Wholesale Suppliers

IWA does not receive or provide wholesale water. This section is not applicable to IWA's service area.

7.9.2 Existing Demand Management Measures for Retail

Compliance with water savings goals can be accomplished by implementing the specific measures laid out in each DMM.

7.9.2.1 Water Waste Prevention Ordinances

A Water Waste Prohibition is an important component for any conservation plan and refers to enactment and enforcement measures that prohibit gutter flooding, single pass cooling system in new connections, non-recirculation system in all new conveyer car washes and commercial laundry systems, and non-recycling decorative water fountains.

The City of Indio has already passed Ordinance No. 1662 prohibiting water wasting which results in flows onto roadways, adjacent property, or non-irrigated property. In addition, the City has also passed Ordinance No. 257, which states: "Chapter 54.050 It shall be unlawful for any person to willfully or neglectfully waste in any manner, any person having knowledge of any conditions whereby water is being wasted, shall immediately notify the Water Department of that fact."

IWA enforces local ordinances regarding sprinklers which could include a temporary shut-off of water service upon receipt of a complaint of a broken sprinkler head. IWA is addressing nuisance water through this ordinance. However, IWA has addressed nuisance water more specifically in its landscaping ordinance (54.054).

The public is able to report water wasters online at IWA's "Report Water Wasters!" site. IWA has developed a "Water Waster Notice" to notify the property owner of the violation and corrective actions to be taken when over-irrigation or water wasting is reported on the property. IWA has developed a form for calculating

the amount of water being wasted and can inform the property owner. With documentation of wasted water, specifically by photos of the violation and “Water Waster Notice”, IWA can enforce its regulations and educate the public.

The effectiveness of this DMM is currently determined by how many revisits are made to a site and by tracking the number of total complaint calls received in the database.

7.9.2.2 Metering

Currently, 100 percent of IWA’s customers are metered for water use and meters are required for any new service connections. This DMM enables IWA to meter and bill customers based on their actual volume of use. Industry organizations estimate that metered accounts along with volumetric rates can result in a 20 percent reduction in demand. IWA has likely already realized the savings associated with metering all accounts. A tiered rate structure would be necessary to reduce further usage under this DMM.

IWA’s meter change-out program has been fully implemented with Advanced Metering Infrastructure and Automated Meter Reading system.

7.9.2.3 Conservation Pricing

Retail conservation pricing provides economic incentives to customers to use water efficiently. The goal of this DMM is to recover the maximum amount of water sales revenue from volumetric rates that is consistent with utility costs, financial stability, revenue sufficiency, and customer equality. IWA’s Board has approved a new allocation-based rate structure that went into effect on January 1, 2014. The new rate structure alone will change customer behaviors, resulting in conservation. The revenue for the rate structure will also off-set the costs of the conservation program.

7.9.2.4 Public Education and Outreach

IWA’s public education and outreach includes the following programs: public information and school education.

A public information program for IWA’s customers is a critical aspect of the conservation plan. IWA has been proactive and implemented a public information program. Through the program, IWA can assist customers in identifying opportunities for conservation via brochures, media events, service announcements, workshops, and other means. Savings could be significant if the program targets residential outdoor use, including demonstration gardens for re- landscaping away from turf. IWA’s current public information program includes:

- Public service announcements
- Bill inserts, newsletters, and brochures
- Special events and media events
- Speakers bureau

A school education program contributes to the long-term reduction in water use as a result of actual changes to water use behaviors in City of Indio’s youth. IWA has presented to classes in the Desert Sands Unified School District as well as provided calendars promoting efficient water use to several elementary schools. Each year the IWA offers school presentations free of charge to any interested school or class. Presentations include information about water conservation, water quality and information about where the water comes from.

Costs for this program have been estimated as \$10 per year per student reached.

7.9.2.5 Programs to Assess and Manage Distribution System Real Loss

IWA conducts a program for system water audits, leak detection, and repair.

IWA reported a water loss of 1,378 AF in the 2018-2019 fiscal year. For that reporting year, 19,171 AF of water was produced resulting in a water loss of 7.2 percent. Non-revenue water in the FY2019-2020 calendar year was 8.6 percent suggesting that IWA has already achieved the goal of less than 10 percent

unaccounted-for water losses in its system. IWA would like to further reduce this to between 3 and 5 percent. Such a reduction could result in additional water savings of approximately 800 to 1,100 AFY by 2025.

IWA expects that the program will be further expanded. Non-revenue water will be determined by reviewing monthly and annual water consumption and production data, which is currently being tracked. Expansion of this program will enhance IWA's knowledge and awareness of its system, which will allow for more accurate targeting of problem areas for future maintenance or replacement. Areas of expansion currently in effect are:

- Changing the way IWA performs fire flows, utilizing hydraulic modeling software to predict the available fire flow without using any water.
- IWA has had its own inspector since mid-2007 to monitor water use at construction sites and ensure all flows are being monitored.
- IWA acquired an electronic leak-detection device in 2008, which was the first step in implementing its leak detection/prevention program.

7.9.2.6 Water Conservation Program Coordination and Staffing Support

IWA has conservation programs for CII and a dedicated Conservation Coordinator in charge of implementation of the conservation programs.

A Conservation Coordinator provides oversight of conservation programs and DMM implementation, as well as communicating and promoting water conservation issues. The Coordinator oversees not only water conservation, but also other environmental programs within the City of Indio. IWA plans on maintaining a conservation coordinator and manager on staff at all times.

7.9.2.7 Other Demand Management Measures

IWA's other DMMs include: water survey programs for residential customers, landscape conservation programs and incentives, high efficiency washer incentives, and low flush toilet replacement programs.

7.9.2.8 Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers & Residential Retrofits

A water survey program for residential customers is a key component of IWA's conservation plan. Through the survey program, residents can request that IWA staff visit their homes and identify opportunities outside the residence or business to reduce consumption, such as landscaping conversions or the installation of more efficient irrigation heads. IWA has been performing outside surveys for residents and businesses since 2008. Over 2,000 landscape conversions have been performed.

IWA may be able to expand this program to include indoor surveys as well. IWA may consider requiring in-home surveys for any residents interested in participating in its Smart Controller and/or Re-landscape Rebate programs.

This part of the program is still in the planning phase and has not yet been implemented. The IWA is continually working to improve and expand conservation plans through partnerships and additional funding opportunities. In 2011 IWA signed an MOU with the Coachella Valley Water District (CVWD) to provide Indio residents who are served by CVWD equal opportunities to receive smart controller rebates or convert lawns to desert landscape.

A residential plumbing retrofit program can also contribute to the overall reduction in indoor water use in the residential customer class. This program targets residences constructed prior to 1992. IWA should market this program to the North Indio and Central zones of the City, where pre-1992 construction accounts for 97 percent and 77 percent of residences, respectively.

Other utilities implement residential plumbing retrofit programs through the actual distribution of retrofit kits to their residential customers, at no cost to the customers. The kit should include a minimum of one new showerhead and two aerators (one kitchen and one bathroom). The estimated cost of such a kit is \$10.

The Gas Company distributes these kits and in partnership with the Gas Company, IWA helps promote the program to Indio residents. The IWA promotes the program through the website and supplying information during residential audits.

The IWA may expand this program and possibly add toilet retrofit kits dependent on future funding.

7.9.2.9 Large Landscape Conservation Programs and Incentives

A large landscape water conservation program with incentives for IWA's CII and irrigation customers could be an important component of its long-term conservation plan. IWA should strive to provide educational opportunities to these clients about the benefits and opportunities for reducing their outdoor water usage. An important aspect of this program will be surveys and water audits of landscaping water usage.

The cost for each CII survey has been estimated as twice that of a residential survey or \$220 per survey, which accounts for the time spent by IWA staff to perform surveys and track program implementation.

This program is still in the planning phase and has not yet been implemented. Implementation goals were established in the conservation master plan. IWA continues to seek partnerships and additional funding to implement and expand conservation programs including this DMM.

7.9.2.10 High Efficiency Clothes Washing Machine Financial Incentive Programs

A high-efficiency clothes washing machine (HECW) financial incentive program will contribute to the overall reduction in indoor water use by the residential customer class. A Coverage Goal (CG) system was developed to more easily determine coverage progress and allow agencies to obtain credit for promoting ultra-high efficiency machines. The annual CG is calculated as:

$$\text{CG} = \text{Total Dwelling Units} \times 0.0768$$

Total dwelling units (DUs) are estimated to be approximately 25,860 at implementation. The calculated coverage goal would be 1,986 HECWs installed over the 2.5 year program, or 794 units per year. IWA may want to consider developing a tiered incentives program with the largest incentives for washing machines with a water factor equal to or less than 6.0. Each replaced machine could save approximately 120,000 gallons of water over the life of the machine (estimated as 14 years).

The HECW Machine Financial Incentives Programs can be implemented by supplying rebates to customers for the purchase of approved HECW machines. A rebate of \$100/HECW is being considered at this time.

This program is still in the planning phase and has not yet been implemented. IWA continues to form partnerships and additional funding to expand conservation programs.

7.9.2.11 Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts

Conservation programs for IWA's CII customers could play a significant role in its long-term conservation plan. Under this DMM, IWA will need to identify and rank CII customers by their water use, develop an Ultra Low-Flow Toilet (ULFT) program, and either implement a CII water use survey and incentives program or establish and meet CII conservation performance targets.

If IWA chooses to pursue a CII Survey and Customer Incentives Program, then it should work to supply surveys to 10 percent of its CII customers within 10 years. However, if IWA pursues a CII Conservation Program, then that program should achieve a 10 percent reduction in the CII baseline water use within 10 years. Some utilities have achieved this by supplying one-time grants to CII customers for both indoor and outdoor water conserving measures. This program is still in the planning phase and has not yet been implemented. IWA continues to seek new partnerships and additional funding to expand conservation programs.

7.9.2.12 Residential Ultra Low Flush Toilet Replacement Programs

A residential ULFT replacement program seeks to replace high consuming toilets (greater than three gallons per flush) with the more efficient ULFTs that use 1.6 gallons or less per flush in both single-family and multifamily residences. At a minimum, the program should replace as many toilets as would be

replaced under a City ordinance that required ULFT retrofits on resale for all homes older than 1992. The program may achieve these water savings through financial incentives or rebates. Under the residential ULFT replacement program, some agencies provide rebates for the purchase of ULFT toilets while others actually supply and install the toilets themselves. IWA can consider either approach for implementation of this program. An estimated cost of \$150 per ULFT replaced is assumed for this DMM.

This program is still in the planning phase and has not yet been implemented. IWA continues to seek partnerships and additional funding to expand conservation programs.

7.9.3 Implementation

IWA's Conservation Program was initiated in 2008. In developing its water Conservation Program, IWA utilized many DMMs as guidelines. IWA continues to seek new partnerships and addition funding to expand conservation programs. IWA will continue to implement water conservation practices and enforce requirements of City ordinances to maintain lower than historic per capita water use.

7.9.4 Water Use Objectives (Future Requirements)

Updated water use objectives are being developed for water suppliers to meet the requirements of the CWC. The final water use objectives for IWA have not yet been determined. The DMMs described in this section are expected to align with IWA's efforts to comply with these objectives when they are finalized.

7.10 Plan Adoption, Submittal, and Implementation

This section addresses the CWC requirements for a public hearing, the process for adopting the RUWMP and IWA's WSCP, submitting the adopted plans, and plan implementation.

7.10.1 Inclusion of All 2020 Data

IWA is reporting on a calendar year basis. This plan includes water production and use data for all of calendar year 2020.

7.10.2 Notice of Public Hearing

The CWC requires several notifications regarding the preparation and adoption of the RUWMP and IWA's WSCP. The CWC states that cities and counties must be notified that the supplier will be reviewing the UWMP and considering amendments to the Plan. IWA sent a notification to cities and counties within its service area informing them of IWA's intent to update the UWMP. These notices are described in Chapter 2 of the RUWMP and are included in Appendix B. The cities and counties in IWA's service area are identified in Table 7-28.

IWA provided notice to the cities and counties of the public hearing, including the time and place and the location where the draft RUWMP and IWA's draft WSCP were available for review.

Table 7-28. DWR 10-1R Notification to Cities and Counties

City	60 Day Notice	Notice of Public Hearing
La Quinta	Yes	Yes
Indio	Yes	Yes
Coachella	Yes	Yes
County	60 Day Notice	Notice of Public Hearing
Riverside	Yes	Yes

IWA published notice in the newspaper of the public hearing on two occasions before the public hearing was held. Proof of publication of these notices is included in Appendix B.

The draft RUWMP and IWA’s WSCP were made available for public review on IWA’s web site and at IWA’s office.

7.10.3 Public Hearing and Adoption

IWA held a public hearing meeting for the RUWMP and IWA’s WSCP on June 16, 2021. The public hearing provided an opportunity for the public to give feedback on the plan before it was adopted.

IWA adopted the RUWMP and IWA’s WSCP by resolution following the public hearing. Copies of the resolutions are included in Appendix H.

7.10.4 Plan Submittal

IWA submitted standard tables electronically via DWR’s UWMP submittal website along with a copy of the final report. The RUWMP and WSCP were also submitted to the California State Library. The plans were made available to all cities and counties to which IWA supplies water.

7.10.5 Public Availability

The RUWMP and IWA’s WSCP will be available on the IWA website for public viewing within 30 days of filing a copy with DWR.

7.10.6 Notification to Public Utilities Commission

Because IWA is not regulated by the California Public Utilities Commission, this section is not applicable.

7.10.7 Amending an Adopted UWMP or Water Shortage Contingency Plan

If IWA identifies the need to amend the RUWMP or IWA’s WSCP, it will follow the same procedures for notifications, a public hearing, and adoption.

Chapter 8 Mission Springs Water District

8.1 Introduction

The Mission Springs Water District (MSWD or District) has participated in the Coachella Valley Regional UWMP to meet its reporting requirements for 2020. This chapter describes information specific to MSWD and its water use efficiency programs.

Updates to the California Water Code (CWC) for the 2020 reporting cycle are discussed in Chapter 1 of the RUWMP.

8.1.1 Chapter Organization

This chapter is organized into the sections recommended by the Guidebook prepared by the California Department of Water Resources (DWR).

- Sub-Chapter 1 provides an introduction to the chapter.
- Sub-Chapter 2 shows details about the preparation of this RUWMP.
- Sub-Chapter 3 presents information about the service area.
- Sub-Chapter 4 presents information about current and projected future water demands.
- Sub-Chapter 5 documents compliance with SB X7-7 through a reduction in per-capita water use.
- Sub-Chapter 6 presents the current and planned future water supplies.
- Sub-Chapter 7 assesses the reliability of supplies and presents a comparison of projected future supplies and demands.
- Sub-Chapter 8 discusses the Water Shortage Contingency Plan (WSCP) that will help guide actions in case of a future water shortage.
- Sub-Chapter 9 presents information about Demand Management Measures (DMMs) being implemented to encourage efficient water use.
- Sub-Chapter 10 presents information about the adoption and submittal process for this RUWMP and the WSCP.

8.1.2 UWMPs in Relation to Other Efforts

The related planning efforts by agencies in the Coachella Valley are described in Chapter 2 of the RUWMP.

8.1.3 UWMPs and Grant or Loan Eligibility

The CWC requires urban water suppliers to have a current UWMP, deemed sufficient at addressing the CWC requirements by DWR, on file with DWR in order for the urban water suppliers to be eligible for any water management grant or loan administered by DWR. In addition, the UWMP Act requires a retail water agency to meet its 2020 Compliance Urban Water Use Target and report compliance in the 2020 UWMP.

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

The participating agencies' approach to demonstrating reduced reliance on the Delta is discussed in Chapter 3 of the RUWMP.

Plan Preparation

This section provides information on MSWD’s process for developing the RUWMP, including efforts in coordination and outreach.

8.2.1 Plan Preparation

MSWD is participating in the Coachella Valley Regional UWMP to meet its reporting requirements under the UWMP Act.

8.2.2 Basis for Preparing a Plan

Per CWC 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.

MSWD is a public water supplier that meets the definition of an urban water supplier with over 13,000 municipal water service connections.

Information about MSWD’s Public Water System (PWS) is summarized in Table 8-1.

Table 8-1. DWR 2-1R Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 (AF)
3310008	Mission Springs Water District	12,783	8,103
3310078	West Palm Springs Village	256	88
3310081	Palm Springs Crest	174	77
Total		13,213	8,269

8.2.3 Regional Planning

MSWD is participating in the Coachella Valley Regional UWMP with five other water agencies, as described in Chapter 2 of the RUWMP.

8.2.4 Individual or Regional Planning and Compliance

MSWD is reporting compliance with SB X7-7 as an individual agency; MSWD did not participate in a Regional Alliance.

8.2.5 Fiscal or Calendar Year and Units of Measure

MSWD is a water retailer (as opposed to a water wholesaler). The RUWMP has been prepared using calendar years (as opposed to fiscal years) and has been prepared using acre-feet (AF) as the units of water volume measure.

8.2.6 Coordination and Outreach

MSWD has coordinated with other agencies in the development of this plan. This coordination is described in Chapter 2 of the RUWMP.

MSWD meets demands with its own groundwater supplies and does not purchase wholesale water from any wholesale supplier. Therefore no coordination with wholesale suppliers was necessary. MSWD did coordinate with Desert Water Agency (DWA) on plans for continued replenishment of the groundwater basin with imported water.

8.3 System Description

This section provides information about MSWD's service area, climate, and population.

8.3.1 General Description

MSWD was established in 1953 and was formerly known as Desert Hot Springs County Water District. The District's water service area consists of 135 square miles including the City of Desert Hot Springs, 10 smaller communities in Riverside County, and communities in the City of Palm Springs. The District's water supply source is 100 percent groundwater produced from District-owned and operated wells. The District provides water service to approximately 43,000 people in its water service area. The District also provides sewer service to approximately 26,000 people in Desert Hot Springs, Desert Crest Country Club and Dillon Mobile Home Park.

MSWD offices are located in Desert Hot Springs, California. MSWD water supply and distribution system includes three separate and distinct water supply and distribution systems with the largest of the three systems serving the community of Desert Hot Springs; the surrounding communities of West Garnet (located south of Interstate 10 and West of Indian Avenue); and North Palm Springs. The two smaller systems, Palm Springs Crest System and West Palm Springs Village System, are located approximately five miles west of Desert Hot Springs. These two communities are located on the north side of Interstate 10 (I-10) abutting the Morongo Indian Reservation.

MSWD currently receives 100 percent of its water supply from groundwater produced from subbasins within the Coachella Valley Groundwater Basin, which underlies the District's water service area. MSWD primarily produces groundwater from the Mission Creek Subbasin via eight active wells. To a lesser extent, the District also produces groundwater from the Indio Subbasin (including the Garnet Hill Subarea) via three active wells; and the San Geronio Pass Subbasin via two active wells.

The existing MSWD distribution system consists of three independent water distribution systems: 1) Desert Hot Springs and surrounding area system – encompasses the City of Desert Hot Springs, a portion of the City of Palm Springs and surrounding unincorporated areas of Riverside County including Desert Edge community, 2) Palm Springs Crest System, and 3) West Palm Springs Village System.

The existing Desert Hot Springs and surrounding area water distribution system serves up to 16 different pressure service zones through either a primary pressure zone or a reduced pressure service zone. In general, the MSWD standard pressure zones are reflective of existing storage tank overflow (or high water) elevations, i.e. the 913 Zone has a water storage tank high water elevation of 913 feet above mean sea level. As development of MSWD occurred, numerous storage tanks were constructed at varying elevations to provide adequate pressure throughout its service area.

8.3.2 Service Area Boundary Maps

The service area boundary is shown in Figure 8-1.

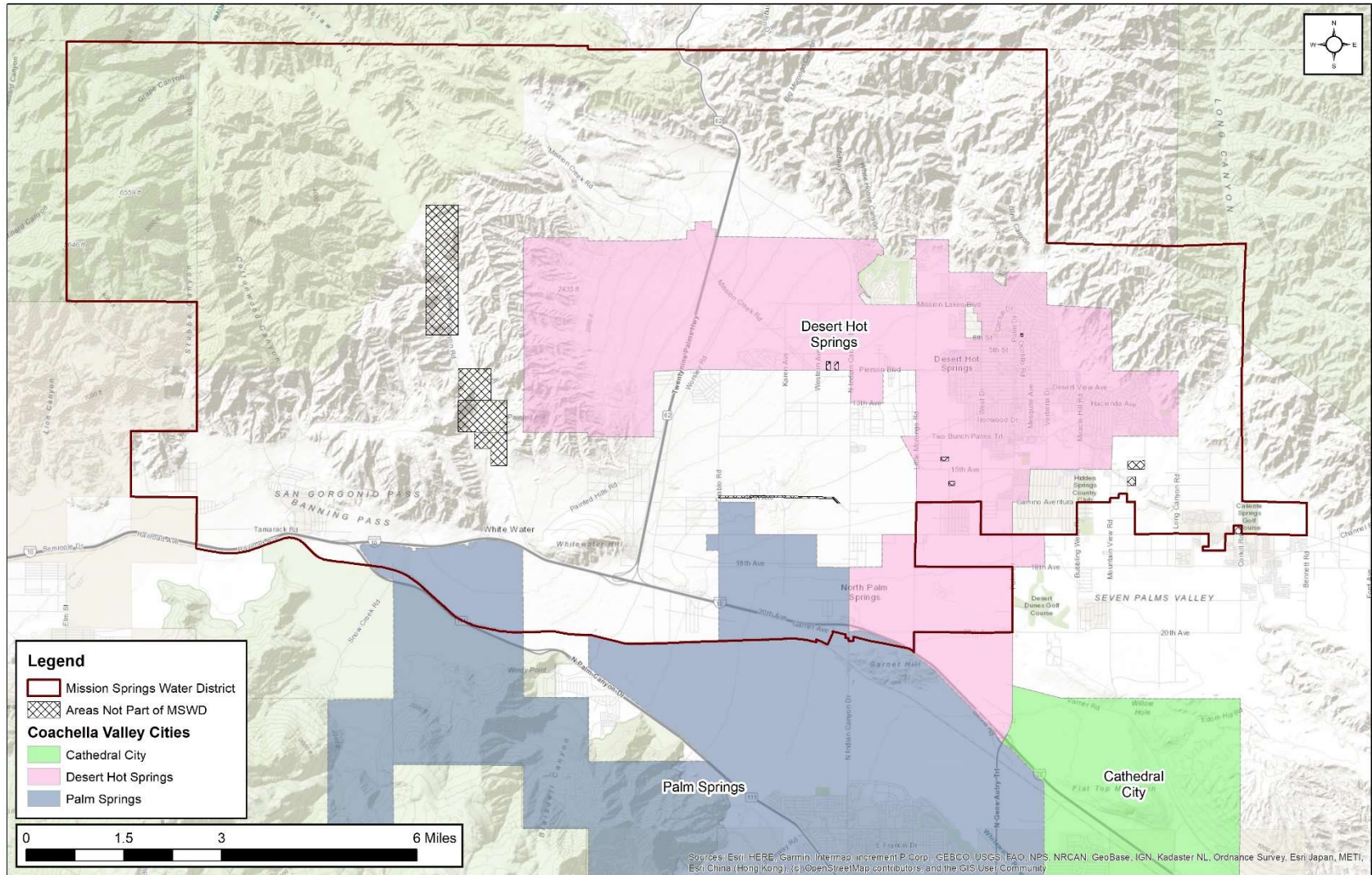


Figure 8-1. MSWD Service Area Boundary

8.3.3 Service Area Climate

The District has a desert climate with low rainfall and humidity and a large range between high and low temperatures. The average monthly evapotranspiration (ET_o), rainfall, and temperatures for the District service area are shown in Table 8-2 and are shown in Figure 8-2.

Table 8-2. Monthly Average Climate Data

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	72	75	82	87	93	103	106	106	101	90	80	65	88
Average Minimum Temperature (F)	42	45	52	58	63	70	76	75	69	59	49	39	58
Average Total Precipitation (in)	0.5	0.6	0.7	0.3	0.1	0.1	0.2	0.1	0.1	0.4	0.2	0.7	3.8
Evapotranspiration, ET _o (in)	2.7	3.6	6.0	7.7	9.2	9.8	9.7	9.1	7.2	5.2	3.3	2.3	75.7

Notes:

Data from California Irrigation Management Information System (CIMIS) Station 200, Indio 2. Data from May 2006 through December 2020

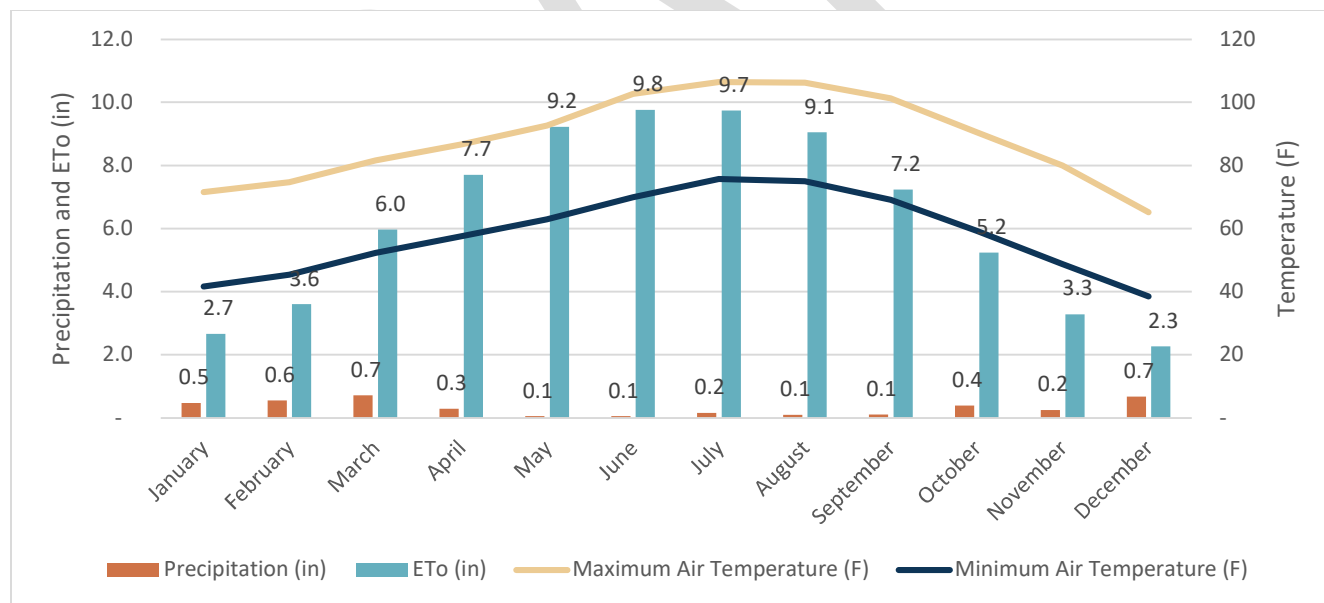


Figure 8-2. Monthly Average Climate Data

A discussion of the potential impacts of climate change on the region is included in Chapter 3 of the RUWMP.

8.3.4 Service Area Population and Demographics

The District's water service area encompasses 135 square miles including the City of Desert Hot Springs, 10 smaller communities in Riverside County, and communities in the City of Palm Springs. The City of Desert Hot Springs makes up approximately 17 percent of the District's water service area (23 square miles). A majority of the District's water service area population resides inside the City of Desert Hot Springs.

The DWR Population Tool was utilized to estimate the District's water service area population for 2020. DWR's population tool uses a geographic outline of MSWD's service area and census data to determine the population in 2010, and then the 2020 population is estimated by using the number of connections in 2010 and 2020.

Future population projections were developed using the regional growth forecast prepared by the Southern California Association of Governments (SCAG).

The current and projected future population are shown in Table 8-3.

Table 8-3. DWR 3-1R Current and Projected Population

Population Served	2020	2025	2030	2035	2040	2045
MSWD	38,287	49,081	54,414	59,747	66,064	72,380
Note: 2020 Population calculated using DWR population tool for SB X7-7 compliance. Alternative estimates are 43,517 in 2020.						

Approximately 95 percent of the District's service connections are for residential use, and of those approximately 95 percent are single-family residential connections.

Demographic data for the City of Desert Hot Springs is summarized in Table 8-4.

Table 8-4. City of Desert Hot Springs Demographic Data

Age Distribution		Race / Ethnicity Distribution		Income and Household Size		Household Income Distribution	
Age	Percent	Race/Ethnicity	Percent	Parameter	Amount	Income	Percent
19 years and under	27.7%	White	30.4%	Median household income	\$33,046	\$24,999 and under	38.4%
20-34 years	19.1%	Black	9.2%	Average household income	\$46,178	\$25,000-\$49,999	30.3%
35-54 years	27.2%	Native American	0.7%	Per capita income	\$18,076	\$50,000-\$74,999	14.3
55-64 years	12.4%	Asian / Pacific Islander	3.1%	Percent of Population Below Poverty Level	31.1%	\$75,000-\$99,999	8.0%
Over 65 years	13.6%	Hispanic	54.5%	Average Household Size	2.71	\$100,000-\$149,999	6.6%
		Other	2.1%			\$150,000 and above	2.4%
Notes							
Reference: American Community Survey 2014-2019 (United States Census Bureau, 2021)							

8.3.5 Land Uses within Service Area

MSWD coordinates with the City of Desert Hot Springs and Riverside County on issues related to land use planning.

The area of the City of Desert Hot Spring’s Sphere of Influence (City’s SOI) including the City and County-managed lands over which the City has an advisory role constitutes approximately 40 percent (56 square miles) of MSWD’s water service area. The City itself makes up approximately 17 percent of the District’s water service area (23 square miles).

Approximately 60 percent of the area within the City’s SOI (including the City) is (or is planned to be) residential land use, with approximately 50 percent of the residential land use categorized as low-density residential and residential estates. Approximately 23 percent of the land is categorized as open space. Approximately 17 percent of the land is categorized as commercial, industrial, or institutional (CII).

The City completed an update of its General Plan in May of 2020. The General Plan identifies policies and general categories of development envisioned for different areas within the City. In its regional growth forecast, SCAG also coordinated with each land use jurisdiction to coordinate growth projections with current and projected future land use.

8.4 Water Use Characterization

This section summarizes MSWD’s current and projected future water use.

8.4.1 Non-Potable Versus Potable Water Use

MSWD currently receives 100 percent of its water supply from groundwater production and does not purchase imported water from a water wholesaler, although it does coordinate with DWA on replenishment of the groundwater basin with imported water.

District groundwater meets all Federal and State primary and secondary water quality standards without treatment (other than chlorination for disinfection) with the exceptions that groundwater from Well No. 26A is treated at each well to meet the primary water quality standard for uranium.

8.4.2 Past, Current, and Projected Water Use by Sector

MSWD has summarized its water use for the past five years by customer sector. Water use is tracked by customer type, using MSWD’s billing system. Water production is tracked by recording groundwater production from the District’s wells.

The difference between water production and metered water deliveries (billed to customers) is defined as non-revenue water. Non-revenue water includes authorized non-billed use (such as fire fighting or flushing), and it includes losses from the system.

MSWD has completed annual water audits using the American Water Works Association (AWWA) Water Audit Software. The results are summarized in Table 8-5. The completed audits are included in Appendix G of the RUWMP.

Table 8-5. DWR 4-4R 12 Month Water Loss Audit Reporting

Report Period Start Date		Volume of Water Loss (AFY)
MM	YYYY	
01	2015	655
01	2016	717
01	2017	897
01	2018	823
01	2019	1,002

The water use for the past five years is summarized in Table 8-6.

Table 8-6. DWR 4-1R Actual Demands for Water (AFY)

Use Type	Level of Treatment When Delivered	2016	2017	2018	2019	2020
Single Family	Drinking Water	3,874	3,803	3,977	4,071	4,496
Multi-Family	Drinking Water	1,225	1,148	1,189	1,148	1,248
Commercial	Drinking Water	331	334	323	379	435
Industrial	Drinking Water	108	150	237	192	282
Institutional / Governmental	Drinking Water	163	197	205	161	170
Landscape	Drinking Water	844	871	982	999	933
Other	Drinking Water	720	899	925	1,879	705
Total		7,223	7,812	7,875	7,692	8,269

Note: Other represents Non-Revenue water, which includes losses.

MSWD is participating in the update of the Mission Creek Subbasin Alternate Plan Update being prepared to meet requirement of the Sustainable Groundwater Management Act (SGMA). The participating agencies coordinated efforts with demand projections being prepared for the Indio Subbasin Alternative Plan and the Mission Creek Subbasin Alternative Plan. The demand projection approach included several steps:

- The projections were based on the regional growth forecast prepared by the Southern California Association of Governments (SCAG) as part of their regional transportation plan. SCAG’s most recent transportation plan is referred to as Connect SoCal.¹¹ SCAG gathered input from cities and counties throughout Southern California about expected growth and development for the next 25 years and incorporated the land use designations in each jurisdiction’s General Plan. The SCAG analysis includes estimates of population, households, and employment in each Traffic Analysis Zone (TAZ) in their study area.¹²
- Additional analysis of vacancy rates was performed to estimated baseline and projected housing units for the study area.
- Future estimates of employment were used to drive future growth in Commercial, Industrial, and Institutional (CII) demands
- Five years of customer billing data were used to develop unit demand factors. These factors have units of gallons per housing unit for residential and landscape uses and gallons per employee for CII uses.
- Water losses were estimated using water loss audits
- Demands were adjusted for two types of conservation savings:
 - Indoor passive conservation savings from the natural replacement of indoor devices

¹¹ Information about Connect SoCal is available at <https://scag.ca.gov/connect-social>

¹² An overview of the demographic and growth forecast is available at https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf?1606001579.

- Outdoor conservation savings from the implementation of the 2015 Model Water Efficiency Landscape Ordinance (MWELo) for future developments.

MSWD’s projected future demands are shown in Table 8-7.

Table 8-7. DWR 4-2R Projected Demands for Water

Use Type	Projected Water Use (AFY)				
	2025	2030	2035	2040	2045
Single Family	4,743	5,143	5,543	6,066	6,588
Multi-Family	1,316	1,427	1,538	1,683	1,828
Commercial	459	498	537	587	638
Industrial	298	323	348	381	413
Institutional / Governmental	179	194	209	229	249
Landscape	984	1,067	1,150	1,258	1,366
Other	1,017	1,102	1,188	1,300	1,412
Total	8,996	9,754	10,513	11,504	12,495

Note: Other represents Non-Revenue water, which includes losses.

Demand projections prepared for this plan considered the incorporation of codes and standards. The draft Mission Creek Subbasin Alternative Plan Update included modeling of anticipated future water savings due to fixture replacements. The analysis included indoor savings related to toilets, showerheads, dishwashers, clothes washers, and urinals (categorized as indoor water use) as well as outdoor water use. Indoor conservation is mainly a result of government mandated water efficiency requirements for fixtures, defined as “passive savings”. The model considers these mandates and the average useful life and replacement rates for each type of fixture based on standard industry estimates and plumbing fixture saturation studies. It assumes that all new construction complies with the plumbing codes in effect at that time and that when a device is replaced, the new device is also in compliance with the current plumbing codes. Estimated frequency of use for each type of fixture as determined by the Water Research Foundation and American Water Works Association Research Foundation were multiplied by the number of housing units to produce the total indoor passive conservation savings.

Anticipated outdoor water use savings were based on the implementation of the California Model Water Efficiency Landscape Ordinance (MWELo) which is the standard for outdoor water conservation for the state. The resulting water savings from the MWELo are estimated using an Evapotranspiration Adjustment Factor (ETAF) which adjusts the reference ET for plant requirements and irrigation efficiency. No savings were assumed from special landscape areas, such as recreational areas, as these are allotted extra water use as well as existing landscapes as these savings are not considered passive since there are incentives under conservation programs.

The anticipated savings due to these measures are summarized in Table 8-8. These savings have been incorporated into the water demand projections presented in Table 8-7.

Table 8-8. Anticipated Water Savings Due to Conservation

	2020	2025	2030	2035	2040	2045
Indoor Passive Savings (AFY)	118	236	354	472	590	700

The DWR reporting framework accounts for recycled water separately from potable water. More discussion of the recycled water supplies and demands are presented in Section 8.6. Total projected gross water use, including both potable and recycled use, is shown in Table 8-9.

Table 8-9. DWR 4-3R Total Gross Water Use

	2020	2025	2030	2035	2040	2045
Potable and Raw Water (AFY) From DWR Table 4-1R and 4-2R	8,269	8,996	9,754	10,513	11,504	12,495
Recycled Water Demand (AFY) From DWR Table 6-4R	0	0	1,120	2,200	3,600	5,000
Total Water Use	8,269	8,996	10,874	12,713	15,104	17,495
Note: Recycled water demands are discussed in Section 8.6 and are included in Table 8-15.						

8.4.3 Worksheets and Reporting Tables

MSWD has completed the required UWMP submittal tables and included them in Appendix D of this RUWMP.

8.4.4 Water Use for Lower Income Households

For planning and funding purposes, the State Department of Housing and Community Development (HCD) categorizes households into five income groups based on the County Area Median Income (AMI):

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

Combined, extremely low, very low, and low income households are often referred to as lower income household.

State Housing Element law requires that a local jurisdiction accommodate a share of the region’s projected housing needs for the planning period. This share, called the Regional Housing Needs Allocation (RHNA), is important because State law mandates that a jurisdiction provide sufficient land to accommodate a variety of housing opportunities for all economic segments of the community. Compliance with this requirement is measured by the jurisdiction’s ability in providing adequate land with adequate density and appropriate development standards to accommodate the RHNA. The Southern California Association of Governments (SCAG), as the regional planning agency, is responsible for allocating the RHNA to individual jurisdictions within the region.

SCAG assigned a RHNA of 4,196 units to the City of Desert Hot Springs for the 2014- 2021 RHNA period.

The lower income households total 1,646 units for the City of Desert Hot Springs. The estimated water demand increase for these 1,646 lower income housing units is estimated at 1,055 AFY, which is included in the District's demand projections.

8.4.5 Climate Change Considerations

Potential impacts of climate change on water use in the region are discussed in Chapter 3 of the RUWMP.

8.5 SB X7-7 Baseline and Targets

This section describes MSWD's compliance with SB X7-7 and documents MSWD's reduction in per-capita water use below its 2020 Urban Water Use Target.

8.5.1 Wholesale Suppliers

MSWD is not a wholesale supplier, and therefore this section is not applicable.

8.5.2 SB X7-7 Forms and Tables

MSWD has completed the SB X7-7 2020 Compliance Form and included it in Appendix E.

8.5.3 Baseline and Target Calculations for 2020 UWMPs

MSWD calculated its baselines and targets for its 2015 UWMP and has not re-calculated its baselines or targets for the 2020 RUWMP.

8.5.4 Service Area Population and Gross Water Use

MSWD has calculated its 2020 service area population using the DWR Population Tool. MSWD uploaded a GIS boundary of its service area to the DWR Population Tool. The Tool used the census data for 2000 and 2010 to calculate population per residential service connection. The tool then used the number of connections to estimate the population in 2020.

MSWD's gross water use was determined from the annual production and storage records. Meter adjustments, exported water, distribution system storage, recycled water, and process water were not applicable to MSWD's distribution system.

8.5.5 2020 Compliance Daily Per Capita Water Use (GPCD)

MSWD's average use during the baseline period and confirmed 2020 target are shown in Table 8-10.

Table 8-10. DWR 5-1R Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline Use (GPCD)	Confirmed 2020 Target (GPCD)
10-15 Year	1997	2006	289.7	234.9
5 Year	2004	2008	291.2	
All values are in Gallons per Capita per Day (GPCD)				

MSWD’s compliance with the 2020 target is shown in Table 8-11.

Table 8-11. DWR 5-2R 2020 Compliance

Actual 2020 Use (GPCD)	Optional Adjustments to 2020 Use		2020 Confirmed Target GPCD	Supplier Achieved Targeted Reduction in 2020
	Total Adjustments	Adjusted 2020 Use (GPCD)		
189	0	189	234.9	Yes
All values are in Gallons per Capita per Day (GPCD)				

8.5.6 Regional Alliance

The District is not participating in a regional alliance and is complying with SB X7-7 as an individual retail agency.

8.6 Water Supply Characterization

This section describes and quantifies the sources of water available to MSWD.

8.6.1 Water Supply Analysis Overview

MSWD currently receives 100 percent of its water supply from the Coachella Valley groundwater basin via District owned and operated wells.

8.6.2 Supply Characterization

This discussion includes the types of water supply considered by DWR.

8.6.2.1 Purchased or Imported Water

MSWD does not use purchased or imported water. The region’s imported water supplies are discussed in Chapter 3.

8.6.2.2 Groundwater

MSWD currently receives 100 percent of its water supply from groundwater produced from subbasins within the Coachella Valley Groundwater Basin, which underlies the District’s water service area. All of the subbasins except for the Desert Hot Springs Subbasin can provide potable water. The Desert Hot Springs Subbasin is a “hot-water” basin that is highly mineralized with water temperatures exceeding 100 degrees Fahrenheit and is not used to supply potable water. However, this hot, highly mineralized water is important to the local economy as it supports numerous spa resorts and hotels in and around the City of Desert Hot Springs.

MSWD primarily produces groundwater from the Mission Creek Subbasin via eight active wells. To a lesser extent, the District also produces groundwater from the Indio Subbasin (including the Garnet Hill Subarea) via three active wells; and the San Gorgonio Pass Subbasin via two active wells.

In general, the existing groundwater quality from District wells is excellent. All urban water served by MSWD meets state and federal drinking water quality standards.

The Mission Creek Subbasin is located beneath both developed and undeveloped areas. Given the high permeability of the surface sediments and the presence of residential / commercial / industrial activities within the subbasin boundaries, there is a possibility that the underlying groundwater could be impacted by various activities currently occurring or proposed in the subbasin. While not all-inclusive, the following activities may pose the greatest threat to the existing groundwater quality in the subbasin:

- Septic systems
- Recharge of imported water
- Abandoned/inactive wells
- Accidental commercial/industrial discharges

MSWD is actively pursuing a program to properly place residences/businesses in the district on the MSWD water supply system and promoting the proper abandonment of unused/inactive wells. In addition, MSWD is converting residences/businesses currently on septic systems to the MSWD sewer collection and treatment system.

Historical groundwater production is shown in Table 8-12.

Table 8-12. DWR 6-1R Groundwater Volume Pumped (AFY)

Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Mission Creek Subbasin	6,792	7,207	7,568	7,273	7,833
Alluvial Basin	San Gorgonio Pass	145	156	153	153	165
Alluvial Basin	Garnet Hill Subarea	285	449	154	266	270
Total		7,223	7,812	7,875	7,692	8,269

8.6.2.3 Surface Water

The District does not use, or plan to use, self-supplied surface water as part of its water supply.

8.6.2.4 Stormwater

The District is currently not using stormwater to meet local water supply demands. At this time, there are no plans to utilize stormwater, but that could change in the future.

8.6.2.5 Wastewater and Recycled Water

The existing wastewater collection system for the water service area, which is operated and maintained by MSWD, consists of a network of approximately 45 miles of sewers, which are concentrated in the central portion of the study area where the majority of the populace and businesses reside. The Desert Crest Country Club community first received sewer service in the early 1960s with the outlying tracts established later in the early 1970s. Most of the MSWD sewer pipelines were constructed in the early 1970s and include lines along Ocotillo Road, Palm Drive, and Mission Lakes Boulevard. In the early 1980s, improvements to the pipeline system were added to tracts west of West Drive.

MSWD has an ongoing program to connect existing residences currently on septic systems to sewer collectors that have been constructed or are in the process of being constructed. Since 2005, 3,520 parcels have been converted from septic to sewer service for a total of 7,700 parcels.

MSWD operates two wastewater treatment plants. The Horton Wastewater Treatment Plant (Horton WWTP), located on Verbena Drive about a half mile south of Two Bunch Palms Trail, has a capacity of 2.3 million gallons per day (MGD). The plant uses an extended aeration process for treatment and disposes of the secondary wastewater, which is not disinfected, in adjacent percolation/evaporation ponds. The sludge generated from the treatment process is run through a dewatering sludge filter press and then trucked offsite to proper disposal areas. The average daily flow metered to the plant in 2020 was 2.0 MGD.

The Desert Crest Wastewater Treatment Plant, located about a half mile southeast of the intersection of Dillion Road and Long Canyon Road, has a capacity of 0.18 MGD and serves a country club development and mobile home park. The facility operates similarly to the Horton WWTP using an aeration basin for treatment and disposes of the secondary wastewater, which is not disinfected, by way of percolation/evaporation ponds. The sludge generated from the treatment process is dried in on-site beds and then trucked offsite to proper disposal areas. The average daily flow to the plant in 2020 was metered at 0.05 MGD.

Both District wastewater treatment plants uses an extended aeration process for treatment and dispose of the secondary wastewater, which is not disinfected, in adjacent percolation/evaporation ponds located within the plant on the southwest (potable water) side of the Mission Creek Fault. In addition, effluent is used for irrigation and maintenance at the treatment plants.

Information about wastewater collected within the District's service area is provided in Table 8-13. Information about wastewater treated and discharged in the District's service area is provided in Table 8-14.

Table 8-13. DWR 6-2R Wastewater Collected within Service Area in 2020

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated	Wastewater Volume Collected from UWMP Service Area in 2020 (AFY)	Name of Wastewater Agency Receiving Collected Wastewater	Wastewater Treatment Plant Name	Wastewater Treatment Plant Located within UWMP Area	WWTP Operation Contracted to a Third Party
MSWD	Metered	2,244	MSWD	Alan L. Horton	Yes	No
MSWD	Metered	51	MSWD	Desert Crest	Yes	No
Total		2,295				

Table 8-14. DWR 6-3R Wastewater Treatment and Discharge within Service Area in 2020

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number	Method of Disposal	Plant Treats Wastewater Generated Outside the Service Area	Treatment Level	2020 Volumes (AFY)				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Alan L. Horton		Percolation ponds	7A330109012	Percolation ponds	No	Secondary, undisinfected	2,244	2,244	0	0	0
Desert Crest		Percolation ponds	7A330109021	Percolation ponds	No	Secondary, undisinfected	51	51	0	0	0
Total							2,295	2,295	0	0	0

MSWD's 2004 Water Conservation Master Plan outlines various planned and implemented activities to ensure water use efficiency throughout the District's service area. Under System Reliability Initiatives, Initiative No. 2 calls for total management of water resources to ultimately include developing recycled water for appropriate beneficial uses. The District's Water Efficient Landscaping Guidelines identifies the installation of recycled water irrigation systems (dual distribution systems) as required to allow for the future use of recycled water, unless a written exemption has been granted.

The District prepared a Recycled Water Program Development Feasibility Study in 2018 in which treatment and distribution alternatives and recycled water demands were identified. It was determined that recycled water infrastructure could feasibly be implemented for groundwater recharge, and, subsequently, to supply existing and future irrigation demands and offset a portion of potable water demands. Recycled water can be used for groundwater basin replenishment and favorably impacts water balance calculations.

Approximately 30 percent of the potable water demand (after water losses) is typically conveyed to the District's wastewater collection system and ultimately to the Horton WWTP and Desert Crest WWTP for treatment, as there are still many customers on septic systems. As the District continues its program to convert existing septic systems to the wastewater collection system and connects to new customers, the percentage is envisioned to increase to approximately 55 percent by 2040. The 55 percent projection for wastewater generation (interior water use) from potable water demand is based on recent studies in Southern California (approximately 45 percent) and the projection of increased exterior landscape irrigation conservation in the future.

Due to the success of its septic to sewer program, , the District is constructing the MSWD Regional Water Reclamation Facility (RWRF) to meet increasing wastewater demands. In its initial phase, the RWRF will use an sequence batch reactor process for treatment and dispose of the secondary wastewater, which is not disinfected, in adjacent percolation/evaporation ponds located within the plant over the Garnet Hill Subarea. The District plans to produce recycled water meeting Title 22 standards with tertiary treatment facilities in the subsequent phase. The primary recycled water demands are foreseen to be replenishment of the Mission Creek Subbasin and public green areas, golf courses and playing fields that were identified as part of the 2018 study. Consistent with recycled water demands that have been identified and estimated system wastewater flows, it is envisioned that the recycled water system including the RWRF will be expanded to accommodate a system recycled water system demand of 5,000 AFY by 2045.

Estimates of future recycled water use are shown in Table 8-15. The District's projection from its 2015 UWMP is shown in Table 8-16. The projection from the 2015 UWMP was not met because the regional WWTP project has progressed more slowly than originally planned.

Table 8-15. DWR 6-4R Recycled Water Within Service Area (AFY)

Name of Supplier Producing (Treating) the Recycled Water			MSWD							
Name of Supplier Operating the Recycled Water Distribution System			MSWD							
Supplemental Volume of Water Added in 2020			0							
Source of 2020 Supplemental Water			Not applicable (future planned use)							
Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
Groundwater Recharge			None	Tertiary		0	1,120	2,200	3,600	5,000
Total					0	0	1,120	2,200	3,600	5,000

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Table 8-16. DWR 6-5R Recycled Water Use Projection Compared to Actual

Use Type	2015 Projection for 2020 (AFY)	2020 Actual Use (AFY)
Landscape Irrigation (excludes golf courses)	300	0
Golf Course Irrigation	820	0
Total	1,120	0

Potential methods to expand recycled water use are shown in Table 8-17.

Table 8-17. DWR 6-6R Methods to Expand Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase of Recycled Water Use (AFY)
Construct Plant & Build RW Distribution	Expand RWRF with tertiary treatment and construct distribution infrastructure	2030	1,120
Expand Plant and Build RW Distribution	Expand RWRF Capacity and construct distribution infrastructure	2035	1,080
Expand Plant and Build RW Distribution	Expand RWRF Capacity and construct distribution infrastructure	2040	1,400
Expand Plant and Build RW Distribution	Expand RWRF Capacity and construct distribution infrastructure	2045	1,400
Total			5,000

8.6.2.6 Desalinated Water Opportunities

MSWD does not anticipate the future use of desalinated water within its service area, as the backbone facilities and infrastructure needed for desalination are not economically feasible.

8.6.2.7 Water Exchanges and Transfers

The District has not entered into any agreements for the transfer or exchange of water. However, the District cooperates with DWA for the Desert Water Agency/Coachella Valley Water District (DWCV) SWP Table A Transfer and the DWCV Advance Delivery Program.

8.6.2.8 Future Water Projects

MSWD has installed approximately 65,700 linear feet of sewer since 2010 and has abated approximately 1,275 septic tanks. The District is continuing this program to connect additional parcels to the collection system.

To produce recycled water meeting Title 22 standards, the District is constructing the Regional Water Reclamation Facility and plans to add tertiary treatment facilities in a subsequent phase. Recycled water

system transmission and distribution system piping and other infrastructure will be constructed. This project is included as an expected future water supply in Table 8-18.

Table 8-18. DWR 6-7R Expected Future Water Supply Projects or Programs

Name of Future Projects or Programs	Joint Project with Other Suppliers	Agency Name	Description	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier (AFY)
Regional Water Reclamation Facility	No	MSWD	Recycled water for non-potable use	2030	Average Year	1,120

8.6.2.9 Summary of Existing and Planned Sources of Water

MSWD currently receives 100 percent of its water supply from groundwater production and does not purchase imported water from a water wholesaler. However, CVWD and DWA are remediating the overdraft condition of the groundwater in the Upper Coachella Valley by replenishment with Colorado River and State Water Project (SWP) Exchange water from Metropolitan. District groundwater meets all Federal and State primary and secondary water quality standards without treatment (other than chlorination for disinfection) with the exceptions that groundwater from Well No. 26A is treated at each well site to meet the primary water quality standard for uranium.

The construction of recycled water infrastructure including tertiary treatment facilities at the planned RWRf is projected to accommodate future deliveries of recycled water.

The actual supplies used by MSWD in 2020 are summarized in Table 8-19. MSWD’s projected supplies through 2045 are summarized in Table 8-20.

Table 8-19. DWR 6-8R Actual Water Supplies

Water Supply	Additional Detail on Water Supply	2020	
		Actual Volume (AFY)	Water Quality
Groundwater (not desalinated)	Mission Creek Subbasin	7,833	Drinking Water
Groundwater (not desalinated)	San Gorgonio Pass Subbasin	165	Drinking Water
Groundwater (not desalinated)	Garnet Hill Subarea	270	Drinking Water
Total		8,269	

Table 8-20. DWR 6-9R Projected Water Supplies (AFY)

Water Supply	Additional Detail on Water Supply	2025	2030	2035	2040	2045
Groundwater (not desalinated)	All Subbasins	8,996	9,754	10,513	11,504	12,495
Recycled Water		0	1,210	2,200	3,600	5,000
Total		8,996	10,874	12,713	15,104	17,495

Note: Recycled water will be used for groundwater recharge and will not be a new demand. It is presented as a supply and a demand for consistency with the DWR reporting framework.

8.6.2.10 Special Conditions

The potential impacts of climate change on regional water supplies are discussed in Chapter 3 of the RUWMP.

8.6.3 Submittal Table Using Optional Planning Tool

Because MSWD’s supply availability does not vary seasonally during a typical year, MSWD has not completed the optional DWR planning tool.

8.6.4 Energy Use

MSWD has used available energy data to estimate the energy intensity of its water operations. In addition, MSWD completed a 1.0 mega-watt solar facility in 2019 that offsets approximately 35% of its energy consumption. The data are summarized in Table 8-21.

Table 8-21. DWR O-1A Energy Intensity Reporting

Table O-1A: Recommended Energy Reporting - Water Supply Process Approach							
Enter Start Date for Reporting Period	1/1/2019	Urban Water Supplier Operational Control					
End Date	12/31/2019						
Is upstream embedded in the values reported?	No	Extract and Divert	Place Into Storage	Distribution	Sum of All Water Management Processes	Non-Consequential Hydropower	
<i>Water Volume Units Used</i>	AF				Total Utility	Hydro-power	Net Utility
<i>Volume of Water Entering Process (volume unit)</i>		7,692	7,692	7,692	7,692	0	7,692
<i>Energy Consumed (kWh)</i>		7,033,446	1,097,973	67,046	8,198,465	0	8,198,465
<i>Energy Intensity (kWh/volume)</i>		914.4	142.7	8.7	1065.8	0.0	1065.8
Quantity of Self-Generated Renewable Energy							
2,100,000	kWh						
Data Quality (<i>Estimate, Metered Data, Combination of Estimates and Metered Data</i>)							
Metered Data							
Data Quality Narrative							
Energy use data was obtained from electricity consumption and production records maintained by the agency.							
Narrative							
The agency uses energy for groundwater production from wells, pumping at booster stations from lower pressure zones to higher pressure zones, and treatment processes. The agency produces energy at a 1.0 MW solar facility.							

8.7 Water Service Reliability and Drought Risk Assessment

Reliability is a measure of water service systems expected success in managing water shortages. In addition to climate, other factors that can cause water supply shortages are natural disaster, such as earthquakes, chemical spills, energy outages and water quality issues.

8.7.1 Reliability Overview

The California Urban Water Management Planning Act (Act) requires urban water suppliers to assess water supply reliability that compares total projected water use with the expected water supply over the next 20-

25 years in five-year increments. The Act also requires an assessment for a single dry year and multiple dry years. This section presents the reliability assessment for MSWD’s service area.

8.7.2 Water Service Reliability Assessment

The only current direct water source to MSWD is local groundwater. The reliability of the District’s water supply is dependent on the reliability of groundwater supplies, supplemented by imported surface water used for groundwater replenishment and the planned implementation of recycled water supply.

Further discussion of constraints on local water resources is included in Chapter 3 of the RUWMP.

Per UWMP requirements, MSWD has evaluated reliability for an average year, single dry year, and multiple dry year periods. The average year represents a year or an averaged range of years that most closely represents the typical water supply available. The UWMP Act uses the term “normal” conditions. MSWD uses the long-term average supply amounts, as presented herein, to represent average year conditions.

The single dry year is the year that represents the lowest water supply available. For this UWMP, 2014 represents that the single dry year as a worst case with strict water conservation measures in place. With regards to SWP water, only 5 percent of Table A water allocation were delivered in 2014.

The multiple dry year period is the period that represents the lowest average water supply availability for a consecutive multi year period (five years or more). This is generally considered to be the lowest average runoff for a consecutive multiple year period (five years or more) for a watershed since 1903. This UWMP uses 2012 through 2016 as the multiple dry year period.

MSWD’s ability to meet demands during the type of year scenarios described above is determined by an analysis of the available water supplies within MSWD’s water service area in each scenario. Considering the groundwater basin management efforts presented throughout this RUWMP, the historical groundwater supply availability during these scenarios is assumed to be fully reliable and an accurate assumption for future reliability.

A summary of the base years for each condition is shown in Table 8-22.

Table 8-22. DWR 7-1R Basis of Water Year Data

Year Type	Base Year	Available Supply if Year Type Repeats
		Percent of Average Supply
Average Year	2020	100%
Single-Dry Year	2014	100%
Consecutive Dry Years 1st Year	2012	100%
Consecutive Dry Years 2nd Year	2013	100%
Consecutive Dry Years 3rd Year	2014	100%
Consecutive Dry Years 4th Year	2015	100%
Consecutive Dry Years 5th Year	2016	100%

Projected normal-year average annual District supplies and demands are shown in Table 8-23.

Table 8-23. DWR 7-2R Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY) From DWR Table 6-9R	8,996	10,874	12,713	15,104	17,495
Demand Totals (AFY) From DWR Table 4-3R	8,996	10,874	12,713	15,104	17,495
Difference	0	0	0	0	0
Note: Recycled water used for groundwater recharge is presented as a supply and a demand for consistency with DWR reporting framework.					
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

Projected single-dry-year average-annual District supplies and demands are shown in Table 8-24.

Table 8-24. DWR 7-3R Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY)	8,996	10,874	12,713	15,104	17,495
Demand Totals (AFY)	8,996	10,874	12,713	15,104	17,495
Difference	0	0	0	0	0
Note: Recycled water used for groundwater recharge is presented as a supply and a demand for consistency with DWR reporting framework.					
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

Projected multiple dry-year average-annual District supplies and demands are shown in Table 8-25.

Table 8-25. DWR 7-4R Multiple Dry Years Supply and Demand Comparison

		2025	2030	2035	2040	2045
First Year	Supply Totals (AFY)	8,996	10,874	12,713	15,104	17,495
	Demand Totals (AFY)	8,996	10,874	12,713	15,104	17,495
Difference		0	0	0	0	0
Second Year	Supply Totals (AFY)	8,996	10,874	12,713	15,104	17,495
	Demand Totals (AFY)	8,996	10,874	12,713	15,104	17,495
Difference		0	0	0	0	0
Third Year	Supply Totals (AFY)	8,996	10,874	12,713	15,104	17,495
	Demand Totals (AFY)	8,996	10,874	12,713	15,104	17,495
Difference		0	0	0	0	0
Fourth Year	Supply Totals (AFY)	8,996	10,874	12,713	15,104	17,495
	Demand Totals (AFY)	8,996	10,874	12,713	15,104	17,495
Difference		0	0	0	0	0
Fifth Year	Supply Totals (AFY)	8,996	10,874	12,713	15,104	17,495
	Demand Totals (AFY)	8,996	10,874	12,713	15,104	17,495
Difference		0	0	0	0	0
Note: Recycled water used for groundwater recharge is presented as a supply and a demand for consistency with DWR reporting framework.						
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.						

8.7.3 Drought Risk Assessment

A new requirement for the 2020 UWMP is a five-year Drought Risk Assessment (DRA). The DRA is based on projections of demand and available supply for the next five years.

Demands are expected to increase to the projected demands for 2025. It is expected that conservation messaging and programs will prevent any significant increase in demands from existing customers due to dry conditions. The groundwater supply is reliable for a five-year dry period as the volume in storage can be drawn down during a dry period.

The results of the DRA are summarized in Table 8-26.

Table 8-26. DWR 7-5 Five-Year Drought Risk Assessment

2021	Gross Water Use (AFY)	8,414
	Total Supplies (AFY)	8,414
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2022	Gross Water Use (AFY)	8,560
	Total Supplies (AFY)	8,560
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2023	Gross Water Use (AFY)	8,705
	Total Supplies (AFY)	8,705
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2024	Gross Water Use (AFY)	8,851
	Total Supplies (AFY)	8,851
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
2025	Gross Water Use (AFY)	8,996
	Total Supplies (AFY)	8,996
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%
<p>Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.</p>		

8.8 Water Shortage Contingency Plan

MSWD has developed a Water Shortage Contingency Plan (WSCP) to help manage potential future water shortages. The WSCP is being adopted separately from the RUWMP and may be modified as needed based on changing conditions. The WSCP is an attachment to this RUWMP.

8.9 Demand Management Measures

The goal of the Demand Management Measures (DMM) section is to provide a comprehensive description of the water conservation programs that the District has implemented, is currently implementing, and plans to implement in order to meet its urban water use reduction targets.

8.9.1 Demand Management Measures for Wholesale Suppliers

MSWD is not a wholesale supplier, and therefore this section is not applicable.

8.9.2 Existing Demand Management Measures for Retail

The District has made the State-mandated DMMs a key element in the overall water resource management strategy. The District is dedicated to implementing water conservation measures, as demonstrated in the District's adopted (September 2004) Water Conservation Master Plan. The Water Conservation Master Plan defines a series of sensible water conservation activities that complement the unique water resource characteristics of the District's service area. The Plan represents a qualitative effort at identifying and screening potential conservation initiatives appropriate for implementation in the District's service area. The data will assist the District in determining which initiatives should be continued to meet long-term conservation objectives.

As part of the Water Conservation Master Plan, the District identified factors affecting water conservation within the District. Significant factors are impacting water use within the District and include the following: Limited availability of water as a resource in Coachella Valley; the District's 100 percent dependency on groundwater as a water source; lack of other potable water sources and limited emergency interconnections; assessments to DWA for future imported water supply; continued new residential development in the City of Desert Hot Springs; risk of future degradation of groundwater supplies from septic systems, and commercial and industrial development; and the need to implement costly new sources of water (reclamation/conjunctive use, etc.).

The water conservation principles identified in the District's Water Conservation Master Plan were outlined and include detailed tasks. Overall, the District aims to employ the following principles:

- Clarify and summarize the District's conservation programs, reflecting conservation commitments made through the UWMP and other programs.
- Ensure that the conservation measures adopted by the District treat all customers fairly and equitably.
- Do not create undue pressure on revenue stability resulting in water costs exceeding local socio-economic conditions.
- Identify and establish measurable conservation targets to be accomplished by the District within a reasonable period of time.
- Develop sensible approaches for practical, cost-effective and efficient conservation programs which anticipate and serve the long-term needs of District customers.
- Facilitate the District's ability to provide a dependable, reliable supply of water.

The District also developed a conceptual framework for the proposed conservation planning process throughout the service area. Four phases are envisioned as part of the process, including the formulation of conservation principles, program refinement, program implementation and program evaluation. The Plan's Conservation Action Plan seeks to implement the conceptual framework in a "dual approach," whereby regulatory and management practices are jointly utilized. In the Conservation Action Plan, the

process for establishing measurable conservation targets is discussed. Three distinct components for the process are identified as the following:

- Establishment of measurable targets,
- Identifying worthwhile conservation measures, and
- Evaluating the effects of conservation activities and attainment of goals

The District's implementation of the demand management and water conservation measures are discussed below.

8.9.2.1 Water Waste Prevention Ordinances

In 2004, the District adopted two major conservation policy statements: a water conservation master plan and water efficient landscaping guidelines. The Water Conservation Master Plan identifies several key areas in which the District will pursue more efficient water use practices, namely: efficient landscaping guidelines; efficient landscaping requirements for new development; and xeriscape demonstration garden; efficient landscaping incentives; conservation education programs in schools, community and bimonthly billing information; tiered water pricing that encourages conservation; updated water shortage ordinance; water audits for the largest users; and rebates for water efficient plumbing fixtures.

8.9.2.2 Metering

The District maintains water meters on all residential, commercial, industrial and municipal connections to the District's water distribution system.

The District has an aggressive meter replacement program. Meters are re-built or replaced on a multi-year cycle to ensure accuracy and proper functioning. The District's water system is fully metered. Therefore, the District completes annual checks on the accuracy and operation of production meters by either recalibrating and reinstalling meters, or by replacing meters that do not fall within the required operating range of AWWA standards. Monthly non-revenue water is accounted for. In 2020, the District completed a system-wide upgrade to advanced metering infrastructure (AMI), which allows for the direct transmission of water use data between the point of consumption and the utility. As such, AMI provides a higher level of accuracy, eliminates the need to manually read water meters, improves overall efficiency of operations, and allows for the identification of potential leaks.

8.9.2.3 Conservation Pricing

The District has a tiered rate structure for water service within its service area. The tiered rate structure is intended to discourage high water use. The District may also enact a drought surcharge, as required by Statewide drought measures. For example, during the 2016 California Drought, the District implemented a temporary \$0.05 per hundred cubic feet drought surcharge, consistent with State drought requirements. Most of the District's water customers also receive sewer service from District. The District imposes rates for sewer service based on maximum potential water usage, billed at a uniform rate for residential customers. Commercial sewer service fees are based on water usage and also promote water conservation.

8.9.2.4 Public Education and Outreach

The District maintains a website titled MSWD.org which provides information regarding:

- Methods to reduce water use;
- Watering restrictions;
- A dedicated conservation page;
- A water efficient planting database;
- An evaporative cooler maintenance program and primer;
- Fines and surcharges associated with violation of watering restrictions;
- Water rebates for installing certain water saving devices and turf removal; and
- Other frequently asked questions regarding water use and conservation

Moreover, the District has partnered with SCE and SCGC in school education outreach programs that provide information to children to learn the importance of water conservation.

The Groundwater Guardian Program is a community educational program developed by The Groundwater Foundation, a private, non-profit educational organization recognized internationally, in Lincoln, Nebraska. "Designation as a Groundwater Guardian Community is presented by The Groundwater Foundation to communities which demonstrate an ongoing participatory approach to protecting groundwater resources." "For continuing designation as a Groundwater Guardian, a community must submit an Annual Entry Form and proposed ROA (Result Oriented Activities) Plan(s) by February each year; continue ongoing activities; and submit an Annual Report in August each year." For more information about The Groundwater Foundation and/or the Groundwater Guardian Program see www.groundwater.org.

The Desert Hot Springs community has three Groundwater Guardian Teams and a Groundwater Guardian Affiliate:

- Desert Hot Springs Groundwater Guardian Team (Community - 1st Designated in 1995)
- Mission Springs Water District (Affiliate - 1st Designated in 1997)
- Desert Hot Springs High School (nation's 1st Groundwater Guardian Campus Team - 1st Designated in 2000)
- Desert Springs Middle School (Groundwater Guardian Campus Team - 1st Designated in 2004)

8.9.2.5 Programs to Assess and Manage Distribution System Real Losses

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

The District conducts water audits and leak detection through various District activities focused on finding and correcting water losses. Field crews visually survey the system as they travel throughout the District's service area on a daily basis. The District's telemetry system, and newly implemented AMI system, also enhances the ability to locate and correct large leaks expeditiously. Leak monitoring is accomplished by all operations field personnel. In the event of a leak, prompt response and investigation are communicated to the District by customers and other entities. Leak and other system losses (fire flows) are calculated monthly and recorded in a database.

The District demonstrates to all customers how to identify toilet leaks using dye tablets. At public outreach events, the District provides the dye tablets at no charge and offers a pamphlet on how to use them. The District encourages landlords to make them available to tenants. Finally, the availability of the free tablets is advertised on the District website, stating that customers may come into the District lobby and pick up tablets at no charge. The District also offers Indoor Water Conservation kits at no charge to customers. The kits include faucet and kitchen aerators, low-flow shower head, leak detection tablets, and toilet tank, toilet fill cycle divertor. This has been advertised on the District quarterly newsletter as well as the website. Customers are encouraged to reach out to the District and the District mails one out to them at no additional charge.

The District works diligently to confirm that the appropriate parties are billed for water loss resulting from damaged fire hydrants, air-vacuums, blow offs, dig-ins, etc. In addition, monthly monitoring of "unaccounted-for" water losses assists in identifying leaks. Average unaccounted-for water losses are currently at approximately 13.5 percent for the District.

To evaluate the effectiveness of these conservation measures, the District finance staff will continue to review the data records to confirm that unaccounted-for water remains low and consistent. Because of the District's proactive measures, the unaccounted-for water losses are projected to be approximately 13.5 percent. Industry guidelines have established a standard rate of water savings based on the repair of a distribution line: a 1-inch crack in a distribution main at 100 pounds per square inch (psi) can leak 57 gallons per minute. Cost and savings depend on the age of infrastructure for the water system.

The District implements programs on leak detection and repair, metering, meter replacement, system flushing, reservoir cleaning and maintenance, valve maintenance and mapping. The District continued

reviewing distribution system operational procedures and maintenance practices with appropriate field and administrative staff, as detailed in the 2004 Water Conservation Master Plan. These measures will ensure system reliability. The hydrant flushing program will be reviewed for its scope and timing, as well as to determine how much water is lost during flushing.

The Desert Willow waterline replacement project included 8,200 linear feet of 8-inch ductile iron pipe which will replace aging 8-inch PVC water lines, and 153 service line replacements. In 2010 MSWD saw approximately 800 service line leak which triggered a service line replacement program. On average MSWD budgeted \$100,000-\$120,000 annually to replace poly service lines. In 2020, MSWD was seeing approximate 230 service line leaks annually. Over the past eight years, MSWD has also implemented seismic valve controls on the Districts reservoirs to mitigate water loss during a sizable earthquake event. MSWD also implemented additional water loss tracking at well sites with the installation of flow meters on the pump to waste lines for each well. Most wells will also discharge to drywells or ponds onsite allowing water to percolate back into the groundwater aquifer in lieu of running off the well sites.

In 2019, MSWD began a system wide advanced metering infrastructure (AMI) program. Since deploying the AMI system, the District has seen a substantial decrease in calls to deploy a technician to the property to check the meter for high bill calls or the check reads as the District has daily/hourly flow data available through the Neptune 360 dashboard. The system allows District staff to resolve identify issues related to high consumption and resolve them quickly with customers.

8.9.2.6 Water Conservation Program Coordination and Staffing Support

The District has designated the Programs and Public Affairs Associate responsible for implementing both the conservation master plan as well as monitoring progress in fulfilling DMMs and a state conservation order.

The District continues to be involved in water conservation programs and coordinates with the four other water agencies of the Coachella Valley through the Coachella Valley Regional Water Management Group and CV Water Counts (www.cvwatercounts.com) regional conservation group.

8.9.2.7 Other Demand Management Measures

The District in concert with the SCE, and SCGC has developed a number of consumption reduction/conservation program methods for residential, landscape, and commercial/ industrial/institutional customers that include:

- Water Use Surveys/Audits
- Rebates or Giveaways of Plumbing Fixtures and Devices
- Rebate Programs including:
 - Turf conversion
 - High Efficiency Toilet rebates
- Leak detection and monitoring program
- Evaporative cooler maintenance and assessment program

Large landscape irrigation surveys are offered to cost effectively achieve quantifiable water savings. The audits are performed in conjunction with the District's Efficient Landscaping Guidelines, adopted by the District board on December 20, 2004. The guidelines establish effective water efficient landscape requirements for newly installed and rehabilitated landscapes, as well as promote water conservation through climate appropriate plant material and efficient irrigation practices.

Section 0.00.040 of the District's Landscaping Guidelines outlines provisions for landscape water audits. Under the Guidelines, all landscaped areas which exceed 1.0 acre (43,560 square feet), including golf courses, green belts, common areas, multifamily housing, schools, businesses, public works, parks, and cemeteries, may be subject to a landscape irrigation audit at the discretion of the District if the District determines that the annual maximum applied water allowance has been exceeded for a minimum of 2 consecutive years. At a minimum, the audit will be conducted by a certified landscape irrigation auditor and shall be in accordance with the California Landscape Irrigation Auditor Handbook, the entire document which is hereby incorporated by reference.

The Guidelines also require an irrigation design plan, which includes the installation of separate landscape water meters for all projects except for single-family homes or any project with a landscaped area of less than 2,500 square feet. Automatic control systems shall be required for all irrigation systems and must be able to accommodate all aspects of the design. Mechanical irrigation controllers are prohibited. Plants that require different amounts of water shall be irrigated by separate valves. If one valve is used for a given area, only plants with similar water use shall be used in that area. Anti-drain valves shall be installed in strategic points to prevent low-head drainage. Sprinkler heads shall have application rates appropriate to the plant water use requirements within each control valve circuit. Scheduling aids, including soil moisture sensing devices and ET controllers, are required and recommended, respectively. Emitters shall have applications rates appropriate to the plant water use requirements within each control valve circuit.

Since early 2002, the District has been an active participant along with various Coachella Valley area public agencies and private sector organizations to develop a standardized landscape ordinance appropriate to the arid desert climate. The resulting Coachella Valley-Wide Water Efficient Landscape Ordinance (Ordinance No. 1302 adopted by CVWD on March 25, 2003) is designed to ensure consistency of landscape water efficiency standards, and applies to new and rehabilitated landscapes within the Valley. A key feature of the Ordinance is a 25 percent reduction in landscape water use. This savings is achieved by changing the plant water-use coefficient factor in the formula originally established by AB 325 from 0.8 to 0.6. With this ordinance, new landscaping for any parcel in the Coachella Valley can use no more than 60 percent of the water required for an equivalent sized parcel completely planted in grass.

The City of Desert Hot Springs adopted the District's Efficient Landscaping Guidelines, and incorporated them into its Ordinance No. 2005-02, which establishes a Water Efficient Landscaping Ordinance within the City's boundaries. The Ordinance was updated and revised in 2009 and subsequently readopted again by the City. The City's Ordinance directly follows the District's Ordinance as applicable to the City's jurisdiction. In other jurisdictions served by the District, the Riverside County Planning Department and the City of Palm Springs require compliance with the District's Landscaping Guidelines as a condition of new building permits and/or certificates for occupancy.

The adoption of the District's Guidelines by the City of Desert Hot Springs, and its consistency with CVWD and City's water conservation measures, demonstrates the District's commitment to regional collaboration and support for the implementation of large landscape conservation programs.

The District's Water Conservation Master Plan sets forth an initiative to require water efficient practices in landscape plans and irrigation systems of all new or substantially rehabilitated residential and commercial development projects.

In late 2003, the District assumed a leadership role in landscape water conservation by partnering with a local builder to develop a series of cost-effective and aesthetically pleasing landscape design options for the builder's new residential tract. The landscape solutions emphasized the use of native desert and other water-conserving plants, in concert with water efficient irrigation systems. A key goal of this joint venture was to satisfy the maximum applied water allowance budget established by the Coachella Valley-Wide Water Efficient Landscape Ordinance. The landscape designs jointly developed between the District and the builder also reflect several factors important to homeowners, including the style of landscaping, the maintenance demands and water use of a particular design option, and cost. This collaborative effort has resulted in over 30 percent of the homes in Phase 1 of the project featuring water wise landscaping. The District's leadership and innovation was recognized by the water community when the Association of California Water Agencies (ACWA) presented the District with the Theodore Roosevelt Environmental Award in 2004 for the Lifestyle Landscaping Program.

The District was part of the Riverside County Conservation Task Force to create the Riverside County Water Use Efficiency Ordinance. The District was an active member of the Task Force to encourage approval and adoption of the ordinance among stakeholders, including County Supervisors, planning agencies, cities, and water districts. To date, a water budget approach has been recommended to allow customers flexibility and does not dictate design implementation. In addition, the Task Force evaluated the use and inclusion of Weather Based Irrigation Controllers (WBIC), enforcement of the Ordinance, support from stakeholders, and emphasis on education as key components of the implementation. The Task Force developed the Model (draft) Ordinance in 2008/09 with compliance by local cities by January 1, 2010.

The District provides resources to assist residents in planning and implementing a desert- friendly landscape. Residents within the District service area are provided with the steps for water conservation measures in their homes and businesses under the following three categories of land uses: Residential Landscape Makeover, Landscape Planning (in-fill projects which require a building permit), and Landscape Planning (tract projects). The steps for each category are summarized below.

The District continues to recommend water-wise and desert-friendly plant materials in homes and businesses. Desert-friendly landscape styles include the following: Arid, Semi-Arid, and Lush & Efficient. Arid landscapes include slower growing, low water use plant materials and often incorporate decorative rock or mulch into the landscape design. A 2000-square foot, Arid landscape design will use about 29,000 gallons of water per year. Semi-Arid landscapes use plant materials similar to Arid, but may also include a limited turf area for pets and children, if needed.

The Semi-Arid style may include a mix of low and medium water-use plants. A 2000 square foot, Semi-Arid landscape will use about 38,000 gallons of water per year. Lush & Efficient landscapes may incorporate high water use plants or a larger amount of grass. Careful, ongoing maintenance of the irrigation system is a must, as well as shaping the turf areas to conform to sprinkler patterns and avoid runoff. A 2000 square foot, Lush & Efficient landscape will use about 56,000 gallons of water per year. A turf lawn requires heavy maintenance and uses about three times more water than the Semi-Arid landscape. Turf lawns also look out of place, and do not blend in with the desert's natural beauty. A 2,000 square foot turf landscape will use about 96,000 gallons of water per year.

The District also refers its service area residents to the following links for further information:

- The New Mexico Office of the State Engineer 5-step guide to creating a water-wise landscape, called "Xeriscape 101: A Step-by-Step Guide to Creating a Water-Wise Yard." <http://www.ose.state.nm.us/water-info/conservation/xeriscape-101.html>.
- Gallery of California Heritage Gardens: http://www.bewaterwise.com/Gardensoft/garden_gallery.aspx
- CVWD's guide, "*Lush & Efficient: Gardening in the Coachella Valley*," contains information on topics such as "The Ingredients of a Desert Garden," "Grouping Plants by Sun and Water Needs," and "How Much and When to Water." It also includes a month-to-month gardening calendar for the Coachella Valley and a vast plant database. "Lush & Efficient" can be ordered from CVWD or you can browse the online version at: <http://cvwd.org/lush&eff.htm>.
- The Southern Nevada Water Authority has useful information on general landscape tips at: http://www.snwa.com/html/ws_landscape_tips.html
- The Alliance for Water Awareness and Conservation (AWAC) provides featured plant updates at: <http://www.hdawac.org/>
- The Water Education Water Awareness Committee (WEWAC) provides monthly plant features at: <http://www.usewaterwisely.com/potm.cfm>
- MSWD Mission: conservation - Plant Guide provides a custom search tool for water efficient plants and provides calculation on water use and other helpful information for turf replacement and new landscaping, at: <http://topratedms.azurewebsites.net/>

On its website, the District also provides a water budget calculator to assist residents in figuring out what their water allowance is and how the landscape alternatives fit into the allowance. The District provides detailed instruction on how to use the calculator, including determining square footage of landscape and annual maximum water allowance for landscape. Based on the calculations, a type of irrigation will be suggested, for example, drip irrigation (non-turf), and the recommended area in which to use spray irrigation.

The District then provides a step by step process for selecting the types of plants that will meet the recommended irrigation methods and landscape size. The water use calculator estimates the amount of water that the selected landscape and plant materials will use on an annual basis. Next, the District provides recommendations on design and installation of an efficient irrigation system. The District encourages public consultation of the District staff as a source of information.

8.9.3 Implementation

The majority of the water conservation programs implemented within the District's service area have been conducted in coordination with the Southern California Gas Company. The following represents the District's best understanding of the nature and extent of these programs over the past five years.

The Mission Springs LivingWise® Program, a school-based energy efficiency education program, is designed to generate immediate and long-term resource savings by bringing interactive, real-world education home to students and their families.

MSWD, amongst other Coachella Valley water agencies, are part of CV Water Counts, a nonprofit collaborative that was formed to focus on water conservation, through awareness and education programs for Coachella Valley residents, businesses and government. In February 2020, CV Water Counts reported that since June 2015, the Coachella Valley has saved more than 50 billion gallons of water.

Additionally, in 2015-2016 MSWD implemented a Turf Rebate Program to incentivize the removal of high water consuming turf grass (and/or significant groundcover plant materials that are similar in water demand) and replaced it with desert-friendly, water-efficient landscaping. The program was available to all MSWD customers; including a residential component for single family homes, a commercial component that included for-profit and non-profit businesses and multi-family housing, and a public-properties component included all municipal properties and those considered public, such as parks, medians, government buildings, schools and similar properties. The intent was to replace turf with aesthetically pleasing desert landscaping and reduce water consumption and water runoff as well as increase education about water conservation and desert friendly landscaping. Residents could earn up to \$3,000 in rebate per project and commercial property owners could receive up to \$10,000 per project. Each project would receive \$2 per square foot of turf removed and were required to pay a minimum of 35% of the project expenses. As demand is again increasing for such a program, MSWD is opening it back up in Spring 2021.

Also in 2016, MSWD implemented a Plumbing Retrofit Rebate Program for the sole purpose of reducing domestic water consumption through incentivizing the installation of water efficient plumbing fixtures, such as replacing toilets that used at least 3 gallons per flush and replacing shower heads and faucet aerators with "WaterSense" approved fixtures. The plumbing program was open to residential, multi-family and commercial customers. Beginning in 2020, MSWD has opened up the Plumbing Retrofit Rebate Program to provide customers with a greater opportunity to participate in efficient water use.

Lastly, MSWD also completed an Evaporative Cooler and Maintenance Program in 2016 to further combat water waste. Evaporative coolers can use between 3 and 15 gallons per hour and the program was aimed at providing maintenance to existing systems and disseminating information to residents on efficient use.

A summary of MSWD conservation DMMs for the years 2016 through 2020 is shown in Table 8-27.

Table 8-27. Summary of DMM Implementation (2016 – 2020)

Conservation Area / Type	2016	2017	2018	2019	2020
	Quantity	Quantity	Quantity	Quantity	Quantity
Number of landscape audits	-	-	-	-	-
Water Wise Residential Plumbing Retrofit Kits (No. Distributed)	-	-	-	-	-
Toilet Rebates (# completed)	100	-	-	-	11
Water Cooler Audits/Maintenance (# completed)	14	-	-	-	-
Turf Replacement Program (# completed)	76	-	-	-	-

Conservation Area / Type	2016	2017	2018	2019	2020
Residential Turf Replacement Program (sf completed)	82,025	-	-	-	-
CII Turf Replacement Program (sf completed)	47,279	-	-	-	-
Turf Replacement Program (\$ Paid)	187,952	-	-	-	-
Turf Replacement Program (\$ Pending)	0	-	-	-	-

8.9.3.1 Public Education and Outreach

The extent of the District’s involvement in programs for public education and outreach has not been quantified. As the program matures and the program is further developed, the District will have a better understanding of the extent of the overall program.

The District runs a continual advertising campaign focusing on conservation. These advertisements appear in both regular as well as periodic publications. Public education and outreach also extend to social media outlets such as Facebook, Nextdoor, Instagram, Twitter, LinkedIn and the CV Water Counts website and social media outlets.

The Desert Hot Springs community has three Groundwater Guardian Teams and a Groundwater Guardian Affiliate. Designation as a Groundwater Guardian Community is presented by The Groundwater Foundation to communities which demonstrate an ongoing participatory approach to protecting groundwater resources.

8.9.3.2 Programs to Assess and Manage Distribution System Real Loss

As previously stated, the District conducts monthly monitoring of all water services. In addition, daily inspection of all facilities such as pump stations, wells, reservoirs, valve vaults, etc., is completed. On an annual basis, visual inspection of all easements and pipeline alignments is accomplished.

A budgeted service line replacement program has been ongoing since 2010.

The extent of the District’s involvement in programs to assess and manage distribution losses has not been quantified. As the program matures and the program is developed, the District will have a better understanding of the extent of the overall program.

8.9.4 Implementation to Achieve Water Use Targets

Through the implementation of District water conservation ordinances and measures, total per-capita District water use has significantly dropped from 308.1 GPCD in 2005 to 216.0 GPCD in 2010 to 172.1 GPCD in 2015 (a reduction of 44.1% since 2005). Residential per-capita District water use has also significantly dropped from 189.8 GPCD in 2005 to 160.4 GPCD in 2010 to 121.1 GPCD in 2015 (a reduction of 36.2% since 2005). MSWD has surpassed the required 20% reduction for 2020.

Many of the water conservation measures already implemented and being implemented by District customers such as turf removal, conversion to drought resistance landscapes, turf replacement, conversion to more efficient irrigation systems and ET-based irrigation controllers, retrofits to toilets and plumbing fixtures, implementation of weather-based irrigation controllers, AMI meters, etc. will have permanent effects on water use (reduction) in the future.

Lower per-capita water use is projected for new housing development (relative to existing housing and development) due to new building codes and landscape ordinances. California’s newly adopted green building code will have a direct impact on home building and water conservation in the State. The new code aims to cut indoor water consumption by at least 20%, primarily through more efficient indoor water

fixtures. For a three-bedroom house, the saving is estimated to be about 10,000 gallons of water per year, on average.

The California Green Building program also includes outdoor water conservation by reducing the area devoted to high-irrigation lawns and plants, emphasizing natural drought-tolerant plantings, and installing irrigation controls that respond to local weather conditions. This is consistent with the District’s 2009 Water Efficient Landscaping Guidelines and the Model Water Efficient Landscape Ordinance (MWELO), which was adopted by the State on July 15, 2015 and was adopted by the City of Desert Hot Springs.

8.9.5 Water Use Objectives (Future Requirements)

Updated water use objectives are being developed for water suppliers to meet the requirements of the CWC. The final water use objectives for MSWD have not yet been determined. The DMMs described in this section are expected to align with MSWD’s efforts to comply with these objectives when they are finalized.

8.10 Plan Adoption, Submittal, and Implementation

This section includes a discussion of MSWD’s process for adopting, submitting, and implementing the RUWMP and MSWD’s WSCP.

8.10.1 Inclusion of All 2020 Data

The District is reporting on a calendar year basis. This report includes completed data for calendar year 2020.

8.10.2 Notice of Public Hearing

There are two audiences to be noticed for the public hearing; cities and counties, and the public.

MSWD supplies water to the City of Desert Hot Springs and to the unincorporated area of Riverside County. Notices were provided to these entities as shown in Table 8-28.

The City of Desert Hot Springs and Riverside County were notified that MSWD will be reviewing the UWMP and considering amendments to the Plan. This notice was sent at least 60 days prior to the public hearing. The District provided notice of the time and place of the public hearing by publishing such notice in a local newspaper at least two weeks and one week prior to the date of the public hearing, respectively. A copy of the 60-day notice letters is included in Appendix B.

Table 8-28. DWR 10-1R Notification to Cities and Counties

City	60 Day Notice	Notice of Public Hearing
Desert Hot Springs	Yes	Yes
Palm Springs	Yes	Yes
County	60 Day Notice	Notice of Public Hearing
Riverside	Yes	Yes

The District’s public notice of the public hearing was published in the newspaper on two occasions before the public hearing. Copies of the proof of publications are included in Appendix B.

8.10.3 Public Hearing and Adoption

The District held a public hearing on June 21, 2021 to hear public comment and consider adopting this RUWMP and MSWD's WSCP. As part of the public hearing, the District provided information on its baseline values, water use targets, and implementation plan required in the Water Conservation Act of 2009.

The public hearing on the UWMP took place before the adoption of the UWMP, which allowed the District the opportunity to modify the UWMP in response to public input before adoption.

The District adopt the RUWMP and MSWD's WSCP before submitting them to DWR. A copy of the District's adoption resolution is included in Appendix H.

8.10.4 Plan Submittal

The RUWMP and MSWD's WSCP will be submitted to DWR within 30 days of adoption and by July 1, 2021. UWMP submittal will be done electronically through WUEdata, an online submittal tool.

Not later than 30 days after adoption, the District will submit a CD or hardcopy of the adopted UWMP to the California State Library.

8.10.5 Public Availability

Not later than 30 days after filing a copy of the RUWMP and MSWD's WSCP with DWR, the District will make the plans available for public review during normal business hours by placing a copy of the UWMP at the front desk of the District's office, and by posting the UWMP on the District's website for public viewing.

8.10.6 Notification to Public Utilities Commission

MSWD is not regulated by the California Public Utilities Commission, and therefore this section is not applicable.

8.10.7 Amending an Adopted UWMP or Water Shortage Contingency Plan

If the District amends the adopted RUWMP or MSWD's WSCP, each of the steps for notification, public hearing, adoption, and submittal will also be followed for the amended plan.

Chapter 9 Myoma Dunes Mutual Water Company

9.1 Introduction

The Myoma Dunes Mutual Water Company (MDMWC) has participated in the Coachella Valley Regional UWMP to meet its reporting requirements for 2020. This chapter describes information specific to MDMWC and its water use efficiency programs.

Updates to the California Water Code (CWC) for the 2020 reporting cycle are discussed in Chapter 1 of the RUWMP.

9.1.1 Chapter Organization

This chapter is organized into the sections recommended by the Guidebook prepared by the California Department of Water Resources (DWR).

- Sub-Chapter 1 provides an introduction to the chapter.
- Sub-Chapter 2 shows details about the preparation of this RUWMP.
- Sub-Chapter 3 presents information about the service area.
- Sub-Chapter 4 presents information about current and projected future water demands.
- Sub-Chapter 5 documents compliance with SB X7-7 through a reduction in per-capita water use.
- Sub-Chapter 6 presents the current and planned future water supplies.
- Sub-Chapter 7 assesses the reliability of supplies and presents a comparison of projected future supplies and demands.
- Sub-Chapter 8 discusses the Water Shortage Contingency Plan (WSCP) that will help guide actions in case of a future water shortage.
- Sub-Chapter 9 presents information about Demand Management Measures (DMMs) being implemented to encourage efficient water use.
- Sub-Chapter 10 presents information about the adoption and submittal process for this RUWMP and the WSCP.

9.1.2 UWMPs in Relation to Other Efforts

The related planning efforts by agencies in the Coachella Valley are described in Chapter 2 of the RUWMP.

9.1.3 UWMPs and Grant or Loan Eligibility

The CWC requires urban water suppliers to have a current UWMP, deemed sufficient at addressing the CWC requirements by DWR, on file with DWR in order for the urban water suppliers to be eligible for any water management grant or loan administered by DWR. In addition, the UWMP Act requires a retail water agency to meet its 2020 Compliance Urban Water Use Target and report compliance in the 2020 UWMP.

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

The participating agencies' approach to demonstrating reduced reliance on the Delta is described in Chapter 3 of the RUWMP.

9.2 Plan Preparation

This section provides information on MDMWC’s process for developing this RUWMP, including efforts in coordination and outreach.

9.2.1 Plan Preparation

Because MDMWC supplies over 3,000 acre-feet per year (AFY) of water for retail purposes, it is considered an “urban retail water supplier” according to the CWC, and therefore must prepare a 2020 UWMP.

9.2.2 Basis for Preparing a Plan

MDMWC operates one Public Water System (PWS) as defined by the California Health and Safety Code. Public Water Systems are regulated by the State Water Resources Control Board (SWRCB, or Board), Division of Drinking Water (DDW). MDMWC’s PWS information is shown in Table 9-1.

Table 9-1. DWR 2-1R Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 (AF)
3310051	Myoma Dunes Mutual Water Company	2,567	3,987
Total		2,567	3,987

9.2.3 Regional Planning

MDMWC is participating in the Coachella Valley Regional UWMP with five other water agencies, as described in Chapter 2 of the RUWMP.

9.2.4 Individual or Regional Planning and Compliance

MDMWC is reporting on SB X7-7 compliance as an individual agency; a regional alliance was not used.

9.2.5 Fiscal or Calendar Year and Units of Measure

MDMWC does not sell wholesale water and is a retail agency. This report was prepared using calendar years and acre-feet as a measure of water.

9.2.6 Coordination and Outreach

MDMWC has coordinated with other agencies in the development of this plan. This coordination is described in Chapter 2 of the RUWMP. MDMWC does not rely upon water supply from a wholesale agency, as supply is provided exclusively from MDMWC groundwater wells.

9.3 System Description

This section includes a description of MDMWC's service area, climate, and population projections.

9.3.1 General Description

The Myoma Dunes Mutual Water Company (MDMWC) is a retail urban water supplier that was established in 1953 to provide potable water service to the community of Bermuda Dunes. MDMWC has grown over the years, seeing housing booms in the mid-1980s, late 1990s, and mid-2000s, and it now provides service to more than 2,500 customers in the Bermuda Dunes area. MDMWC is a mutual water company that is governed by a four-member Board of Directors.

MDMWC's service area is located within the Coachella Valley in Southern California. MDMWC's service area is approximately 2.6 square miles, generally bounded by the I-10 Freeway to the north, Washington Street to the west, Fred Waring Drive to the south, and Jefferson Street to the east. There is a small area of homes in the center of the MDMWC service area that is served by Coachella Valley Water District (CVWD).

The service area is predominantly comprised of single-family residential demands, with outdoor water use being a major component of this demand category. The service area also includes multi-family residential, commercial, and landscape irrigation demands. Currently, the Bermuda Dunes Country Club (BDCC) and Bermuda Dunes Airport irrigation demands are met with their own private wells, not MDMWC potable water. The service area is near build-out, with some small pockets of potential development, more so towards the northern and western edges of the service area.

MDMWC serves its customers through a network of pressurized water distribution facilities. Myoma's water supply source consists solely of groundwater from the Indio Subbasin. Water is extracted via five active groundwater wells with a total nominal production capacity of 10,300 gallons per minute (gpm). Two of the wells pump directly into two respective one-million gallon reservoirs, which serve as forebays to the distribution system. Two booster stations with nominal capacities totaling 7,500 gallons per minute deliver water from the forebays into the distribution system. The other three wells pump directly into the distribution system. The distribution system consists of a single pressure zone that is operated at pressures from approximately 70 to 100 pounds per square inch (psi). Current treatment consists of wellhead chlorine injection. MDMWC is not interconnected with any other water purveyor and is completely reliant upon its own groundwater well supply and storage.

9.3.2 Service Area Boundary Maps

MDMWC's service area boundary is shown in Figure 9-1. MDMWC only provides potable water service, and therefore, has a single service area boundary. No changes have been made to the service area since the beginning of the baseline period (1995) through 2020.

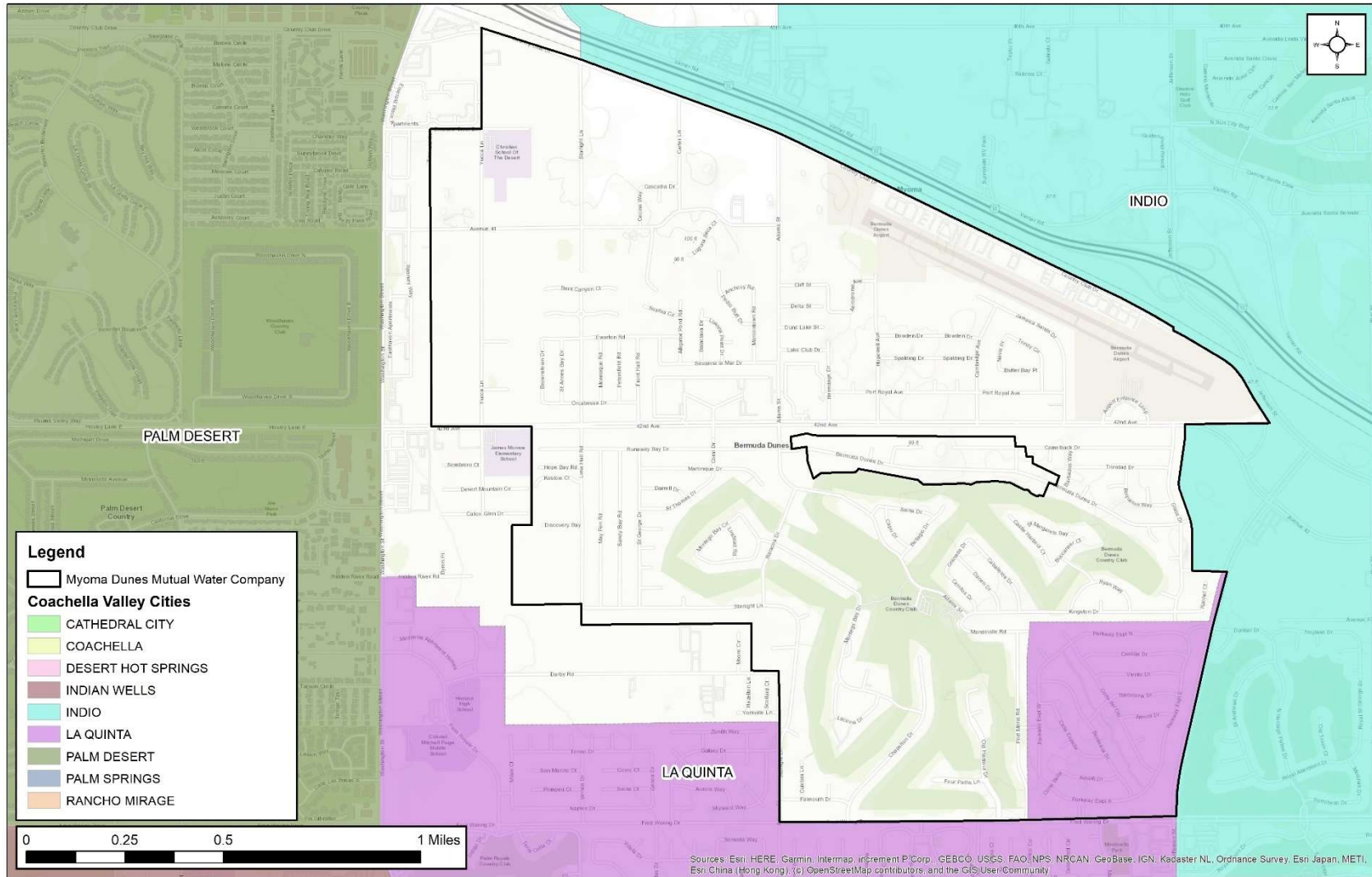


Figure 9-1. MDMWC Service Area Boundary

9.3.3 Service Area Climate

The Coachella Valley has a unique climate due to it being situated between two mountain ranges, characterized as arid with year-round warm temperatures and relatively high winds. Precipitation is minimal, typically occurring during the winter months.

Monthly climate data are summarized in Table 9-2 and are shown in Figure 9-2.

Table 9-2. Monthly Average Climate Data

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	72	75	82	87	93	103	106	106	101	90	80	65	88
Average Minimum Temperature (F)	42	45	52	58	63	70	76	75	69	59	49	39	58
Average Total Precipitation (in)	0.5	0.6	0.7	0.3	0.1	0.1	0.2	0.1	0.1	0.4	0.2	0.7	3.8
Evapotranspiration, ETo (in)	2.7	3.6	6.0	7.7	9.2	9.8	9.7	9.1	7.2	5.2	3.3	2.3	75.7

Notes:
Data from California Irrigation Management Information System (CIMIS) Station 200, Indio 2. Data from May 2006 through December 2020

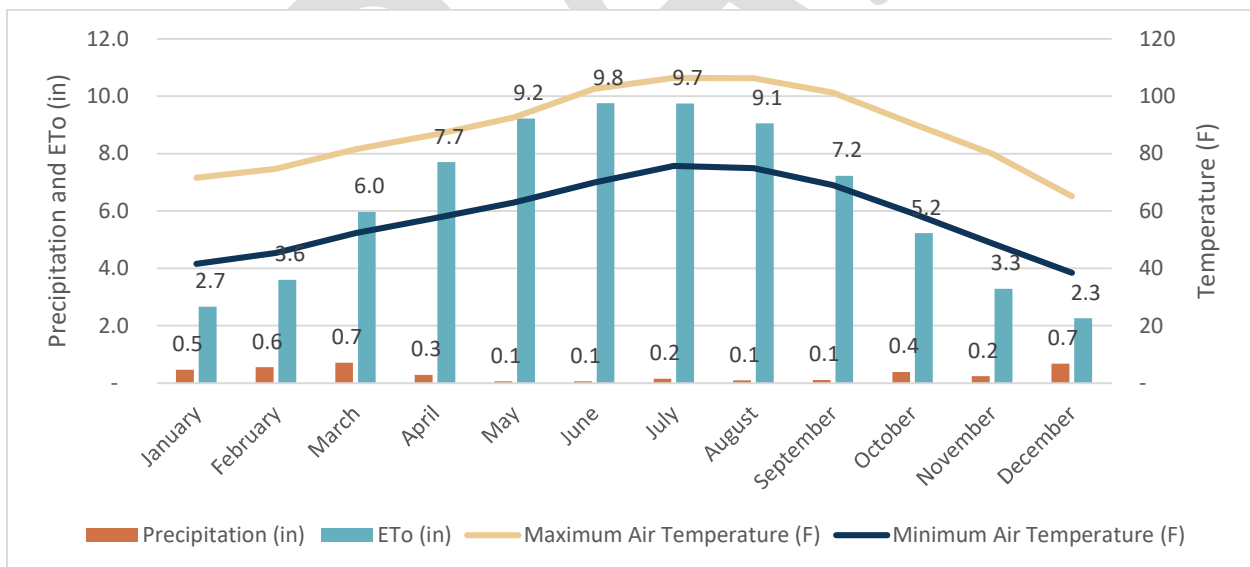


Figure 9-2. Monthly Average Climate Data

A discussion of the potential impacts of climate change on the region is included in Chapter 3 of the RUWMP.

9.3.4 Service Area Population and Demographics

MDMWC serves the majority of Bermuda Dunes, which is a Census-Designated Place (CDP) in Riverside County, and a small portion of the City of La Quinta. Because MDMWC’s service area is not substantially the same as a city or CDP, the DWR Population Tool methodology has been used for estimating MDMWC’s current and historical service area population. DWR’s Population Tool utilizes U.S. Census data and an electronic map of MDMWC’s service area to obtain population data for census years. Using the number of service connections, the tool calculates the population for the non-census years.

Estimates of future population within the MDMWC service area were made using projections prepared by the Southern California Association of Governments (SCAG).

Current and projected populations within MDMWC’s service area are presented in Table 9-3.

Table 9-3. DWR 3-1R Current and Projected Population

Population Served	2020	2025	2030	2035	2040	2045
MDMWC	7,167	7,780	8,070	8,360	8,421	8,482

The Coachella Valley region has a large seasonal population, with the majority of the influx typically occurring during the months of November to April. This seasonal population can be generally attributed to persons that wish to enjoy the mild winters of the Coachella Valley, as well as other recreational and tourist attractions.

In terms of water demand impacts, seasonal residents may not be counted toward census population, but often still use water throughout the year for landscape irrigation. This phenomenon can result in higher than typical per capita water usage. According to the 2014-2019 American Community Survey (ACS) 5-Year Estimates, of the 2,816 housing units in the Bermuda Dunes CDP, 1,014 of these (36 percent) were vacant, and 844 of these vacant units (83 percent) were used for seasonal, recreational, or occasional use. For the City of La Quinta, of the 25,990 housing units, 10,042 (39 percent) were vacant, with 9,426 (94 percent) used for seasonal, recreational, or occasional use.

A summary of the demographics of the Bermuda Dunes CDP and the City of La Quinta is presented in Table 9-4 and Table 9-5. Note that these values are not directly representative of MDMWC’s as its water service boundary does not directly coincide with the CDP or City boundaries.

Table 9-4. Bermuda Dunes CDP Demographic Data

Age Distribution		Race / Ethnicity Distribution		Income and Household Size		Household Income Distribution	
Age	Percent	Race/Ethnicity	Percent	Parameter	Amount	Income	Percent
19 years and under	25.2%	White	58.5%	Median household income	\$59,860	\$24,999 and under	18.0%
20-34 years	18.0%	Black	1.8%	Average household income	\$77,829	\$25,000-\$49,999	23.2%
35-54 years	25.8%	Native American	0.0%	Per capita income	\$33,786	\$50,000-\$74,999	16.7%
55-64 years	12.6%	Asian / Pacific Islander	3.5%	Percent of Population Below Poverty Level	12.4%	\$75,000-\$99,999	15.9%
Over 65 years	18.6%	Hispanic	33.8%	Average Household Size	2.38	\$100,000-\$149,999	13.2%
		Other	2.5%			\$150,000 and above	13.1%
<p>Notes:</p> <p>Totals may not equal 100% due to rounding errors.</p> <p>Reference: American Community Survey 2014-2019 (United States Census Bureau, 2021)</p>							

Table 9-5. City of La Quinta Demographic Data

Age Distribution		Race / Ethnicity Distribution		Income and Household Size		Household Income Distribution	
Age	Percent	Race/Ethnicity	Percent	Parameter	Amount	Income	Percent
19 years and under	22.2%	White	57.3%	Median household income	\$77,839	\$24,999 and under	13.3%
20-34 years	14.0%	Black	1.7%	Average household income	\$120,884	\$25,000-\$49,999	19.9%
35-54 years	22.4%	Native American	0.1%	Per capita income	\$48,186	\$50,000-\$74,999	15.3%
55-64 years	15.5%	Asian / Pacific Islander	3.5%	Percent of Population Below Poverty Level	11.2%	\$75,000-\$99,999	11.4%
Over 65 years	25.9%	Hispanic	34.7%	Average Household Size	2.57	\$100,000-\$149,999	17.3%
		Other	2.7%			\$150,000 and above	22.7%

Notes:
 Totals may not equal 100% due to rounding errors.
 Reference: American Community Survey 2014-2019 (United States Census Bureau, 2021)

9.3.5 Land Uses within Service Area

Land use jurisdictions with MDMWC’s service area include the City of La Quinta and Riverside County. During its preparation of regional growth projections, SCAG gathered input and coordinated outreach with both jurisdictions. MDMWC has coordinated with these agencies to align its growth projections with local plans.

9.4 Water Use Characterization

This section describes current and projected future water use within the MDMWC service area. Although the MDMWC service area is substantially built-out, there are still many complex factors that impact water use projections such as weather, demand restrictions, housing trends, and landscaping conversions.

9.4.1 Non-Potable Versus Potable Water Use

MDMWC currently serves only potable water to its customers.

9.4.2 Past, Current, and Projected Water Use by Sector

Water use for the past five calendar years has been categorized by sector in accordance with the sectors accepted by the Water Use Efficiency (WUE) data online submittal tool. MDMWC’s metering categories generally coincide with the WUE sectors. MDMWC only supplies drinking water from groundwater wells for retail consumption. MDMWC does not supply raw water or recycled water.

The water use sectors in the MDMWC service area are summarized in Table 9-6.

Table 9-6. Water Use Sectors

Sector	Description
Single-Family Residential	A single-family dwelling unit. A lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling.
Multi-Family Residential	Multiple dwelling units contained within one building or several buildings in a single complex.
Commercial	A water user that provides or distributes a product or service.
Landscape	Water connections supplying water solely for landscape irrigation. Such landscapes may be associated with multi-family, commercial, industrial, or institutional/governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation.
Distribution System Losses	Reporting of system losses is required by the CWC in the 2020 UWMPs.
Other	Other metered water use that is not assigned a specific billing category, such as metered construction use, etc.

Distribution system water losses include real and apparent losses. Real losses are the physical water losses from the water distribution system as well as storage facilities, up to the point of customer consumption. Apparent losses (also known as “paper losses”) include losses due to water theft, metering inaccuracies, or data errors. Combined, these two components make up total water losses.

MDMWC water losses for the past five years been estimated using the American Water Works Association (AWWA) Method, covered in AWWA M36 – Water Audits and Loss Control Programs, utilizing the AWWA Water Audit Software (WAS). The results are summarized in Table 9-7, and the completed audits are included in Appendix G of the RUWMP.

Table 9-7. DWR 4-4R 12 Month Water Loss Audit Reporting

Report Period Start Date		Volume of Water Loss (AFY)
MM	YYYY	
01	2015	288
01	2016	290
01	2017	237
01	2018	367
01	2019	271

Water use for the past five years is shown in Table 9-8.

Table 9-8. DWR 4-1R Actual Demands for Water (AFY)

Use Type	Additional Description	Level of Treatment When Delivered	2016	2017	2018	2019	2020
Single Family		Drinking Water	2,145	2,218	2,375	2,315	2,474
Multi-Family		Drinking Water	75	75	79	77	317
Commercial		Drinking Water	497	557	562	572	374
Landscape		Drinking Water	244	243	263	242	274
Other	Hydrants, Non-Billed, Fire Protection	Drinking Water	1	6	3	1	132
Other	Non-Revenue	Drinking Water	336	302	438	407	416
Total			3,297	3,402	3,719	3,613	3,987

Local agencies are currently participating in the update of the Indio Subbasin Alternate Plan Update being prepared to meet requirement of the Sustainable Groundwater Management Act (SGMA). The participating agencies coordinated efforts with demand projections being prepared for the Indio Subbasin Alternative Plan and the Mission Creek Subbasin Alternative Plan. The demand projection approach included several steps:

- The projections were based on the regional growth forecast prepared by the Southern California Association of Governments (SCAG) as part of their regional transportation plan. SCAG’s most recent transportation plan is referred to as Connect SoCal.¹³ SCAG gathered input from cities and counties throughout Southern California about expected growth and development for the next 25 years and incorporated the land use designations in each jurisdiction’s General Plan. The SCAG analysis includes estimates of population, households, and employment in each Traffic Analysis Zone (TAZ) in their study area¹⁴.
- Additional analysis of vacancy rates was performed to estimated baseline and projected housing units for the study area, including housing units used by seasonal residents and other part-time uses.
- Future estimates of employment were used to drive future growth in Commercial, Industrial, and Institutional (CII) demands
- Five years of customer billing data were used to develop unit demand factors. These factors have units of gallons per housing unit for residential and landscape uses and gallons per employee for CII uses.
- Water losses were estimated using water loss audits.
- Demands were adjusted for two types of conservation savings:
 - Indoor passive conservation savings from the natural replacement of indoor devices

¹³ More information is available at <https://scag.ca.gov/connect-social>

¹⁴ An overview of the demographic and growth forecast is available at https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial_demographics-and-growth-forecast.pdf?1606001579

- Outdoor conservation savings from the implementation of the 2015 Model Water Efficiency Landscape Ordinance (MWELo) for future developments.

The projected water use is shown in Table 9-9.

Table 9-9. DWR 4-2R Projected Demands for Water (AFY)

Use Type	Additional Description	Projected Water Use				
		2025	2030	2035	2040	2045
Single Family		2,716	2,817	2,918	2,939	2,961
Multi-Family		348	361	374	377	380
Commercial / Industrial / Institutional		410	426	441	444	447
Landscape		300	312	323	325	327
Other		145	150	156	157	158
Losses		457	474	491	494	498
Total		4,376	4,539	4,702	4,737	4,771

Demand projections prepared for this plan considered the incorporation of codes and standards. The draft Indio Subbasin Alternative Plan Update included modeling of anticipated future water savings due to fixture replacements. The analysis included indoor savings related to toilets, showerheads, dishwashers, clothes washers, and urinals (categorized as indoor water use) as well as outdoor water use. Indoor conservation is mainly a result of government mandated water efficiency requirements for fixtures, defined as “passive savings”. The model considers these mandates and the average useful life and replacement rates for each type of fixture based on standard industry estimates and plumbing fixture saturation studies. It assumes that all new construction complies with the plumbing codes in effect at that time and that when a device is replaced, the new device is also in compliance with the current plumbing codes. Estimated frequency of use for each type of fixture as determined by the Water Research Foundation and American Water Works Association Research Foundation were multiplied by the number of housing units to produce the total indoor passive conservation savings.

Anticipated outdoor water use savings were based on the implementation of the California Model Water Efficiency Landscape Ordinance (MWELo) which is the standard for outdoor water conservation for the state. The resulting water savings from the MWELo are estimated using an Evapotranspiration Adjustment Factor (ETAF) which adjusts the reference ET for plant requirements and irrigation efficiency. No savings were assumed from special landscape areas, such as recreational areas, as these are allotted extra water use as well as existing landscapes as these savings are not considered passive since there are incentives under conservation programs.

The anticipated savings due to these measures are summarized in Table 9-10. These savings have been incorporated into the demand projections presented in Table 9-9.

Table 9-10. Anticipated Savings Due to Conservation

Use Type	Additional Description	Projected Water Savings (AFY)				
		2025	2030	2035	2040	2045
Indoor Passive Savings		39	52	61	66	69
Outdoor Passive Savings		95	128	159	179	195
Total		134	180	220	245	264

Total water demands are listed in Table 9-11.

Table 9-11. DWR 4-3R Total Gross Water Use (AF)

	2020	2025	2030	2035	2040	2045
Potable and Raw Water From DWR Table 4-1R and 4-2R	3,987	4,376	4,539	4,702	4,737	4,771
Recycled Water Demand* From DWR Table 6-4R	0	0	0	0	0	0
Total Water Use	3,987	4,376	4,539	4,702	4,737	4,771

9.4.3 Worksheets and Reporting Tables

MDMWC has completed the required UWMP submittal tables and included them in Appendix D of this RUWMP.

9.4.4 Water Use for Lower Income Households

The portion of MDMWC’s service area north of Avenue 42 is considered low income housing based on the DWR’s Disadvantaged Communities (DAC) mapping tool. A DAC is a community with an annual median household income (MHI) that is less than 80 percent of the Statewide annual MHI.

Using geographic meter records, the number of connections and water use within the DAC was determined. The connections for lower income households were estimated to be approximately 25 percent of the total residential connections in the service area. MDMWC estimates that approximately 25 percent of its demand is delivered to lower income households. This percentage is expected to remain approximately constant for future years. This demand has been included in the demand projections presented in this report.

9.4.5 Climate Change Considerations

The agencies participating in the Regional UWMP have prepared an assessment of potential climate change impacts on demand. This information is presented in Chapter 3 of the RUWMP.

9.5 SB X7-7 Baseline and Targets

MDMWC's methods for calculating baseline and target water consumption values are described in this section. This section also documents MDMWC's compliance with its 2020 Urban Water Use Target.

9.5.1 Wholesale Suppliers

MDMWC is not a wholesale supplier, and therefore this section is not applicable.

9.5.2 SB X7-7 Forms and Tables

MDMWC has completed the SB X7-7 2020 Compliance Form and included it in Appendix E.

9.5.3 Baseline and Target Calculations for 2020 UWMPs

MDMWC calculated its baselines and targets for its 2015 UWMP, and MDMWC has not re-calculated its baselines or targets for the 2020 RUWMP.

9.5.4 Service Area Population and Gross Water Use

MDMWC serves the majority of the Bermuda Dunes CDP and a small portion of the City of La Quinta. Because MDMWC's service area is not substantially the same as a city or CDP ("substantially the same" defined as service area boundaries corresponding by 95 percent or more with the boundaries of a city or CDP during the baseline period), the DWR Population Tool methodology has been used for estimating MDMWC's service area population. DWR's Population Tool utilizes U.S. Census data and an electronic map of MDMWC's service area to obtain population data for census years. Using the number of service connections, the tool calculates the population for the non-census years.

MDMWC's gross water use was determined from production records. One hundred percent of MDMWC's supply entering the distribution system is provided by groundwater wells owned and operated by MDMWC. All groundwater wells pump from the Indio Subbasin. As MDMWC does not utilize recycled water, does not place water into long term storage, does not convey water to another urban supplier, does not deliver water for agricultural uses, and does not deliver water to industrial users, no deductions to gross water use have been made.

9.5.5 2020 Compliance Daily Per Capita Water Use (GPCD)

Per capita water use has been historically high in the MDMWC service area, which may be attributed in part to the following reasons:

- Hot, dry climate with very little rainfall
- Irrigated turf yards
- Swimming pools
- Past water use habits from a historical flat water rate
- Vacation homes and seasonal habitans underrepresenting service area population

It should be noted that the BDCC golf course, which occupies a relatively large portion of MDMWC's service area, irrigates with a private well supply. MDMWC only supplies potable water to BDCC's clubhouse, restrooms, and drinking fountains.

MDMWC's average use during the baseline period and confirmed 2020 target are shown in Table 9-12.

Table 9-12. DWR 5-1R Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline Use (GPCD)	Confirmed 2020 Target (GPCD)
10-15 Year	1995	2004	859	685
5 Year	2003	2007	721	
*All values are in Gallons per Capita per Day (GPCD)				

The reduced per capita consumption already achieved is largely expected to continue as water use habits developed during the recent drought period become more permanent, turf is replaced with more drought-tolerant landscaping, alternative water supply sources are secured, and tiered rate structures are utilized.

MDMWC's compliance with the 2020 target is shown in Table 9-13.

Table 9-13. DWR 5-2R 2020 Compliance

Actual 2020 Use (GPCD)	Optional Adjustments to 2020 Use		2020 Confirmed Target (GPCD)	Supplier Achieved Targeted Reduction in 2020
	Total Adjustments	Adjusted 2020 Use (GPCD)		
497	0	497	685	Yes
*All values are in Gallons per Capita per Day (GPCD)				

9.5.6 Regional Alliance

MDMWC is complying with SB X7-7 as an individual retail agency and did not participate in a Regional Alliance.

9.6 Water Supply Characterization

This section describes and quantifies the sources of water available to MDMWC.

9.6.1 Water Supply Analysis Overview

Within the MDMWC service area, the only direct water source employed for potable urban water use is local groundwater from MDMWC wells. This groundwater is pumped from the Indio Subbasin of the Coachella Valley hydrologic basin. More information about the Indio Subbasin is presented in Chapter 3 of the RUWMP.

9.6.2 Supply Characterization

This discussion includes the types of water supply considered by DWR.

9.6.2.1 Purchased or Imported Water

MDMWC does not independently purchase, exchange, or import water from any source outside of Coachella Valley. As described in Chapter 3 of the RUWMP, imported water is used on a regional basis for groundwater replenishment.

9.6.2.2 Groundwater

Groundwater is the sole source of supply for MDMWC. MDMWC supplies are primarily from the eastern end of the Indio Subbasin. Because the Indio Subbasin is a non-adjudicated basin, MDMWC operates under overlying groundwater rights and pumps supplies from the aquifer as needed to meet demands within its service area.

MDMWC's historical groundwater pumping is summarized in Table 9-14.

Table 9-14. DWR 6-1R Groundwater Volume Pumped (AFY)

Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Indo Subbasin	3,297	3,402	3,719	3,613	3,987
Total		3,297	3,402	3,719	3,613	3,987

9.6.2.3 Surface Water

Irrigation needs at the BDCC golf course and Bermuda Dunes Airport are currently met with private well supply. There is a planned CVWD project to serve Canal water to the BDCC for irrigation purposes to help decrease groundwater basin overdraft, which includes the construction of a new pump station and transmission main. There is also the potential for serving Bermuda Dunes Airport irrigation demands from the Canal, whose irrigation demand amounts to slightly over 20 acre-feet per year; however, there is currently no planned project.

9.6.2.4 Stormwater

MDMWC does not currently use stormwater as a water supply. Stormwater in the Coachella Valley typically percolates into the groundwater basin or is conveyed to the Coachella Valley Stormwater Channel (CVSC); however, there is some stormwater catchment at the Whitewater River GRF and other smaller recharge basins. Due to the extremely limited amount of rainfall and runoff in the region, stormwater is not currently regarded as a high priority potential water source.

9.6.2.5 Wastewater and Recycled Water

MDMWC does not possess any recycled water infrastructure and does not produce or serve any recycled water. In the immediate vicinity of MDMWC, CVWD is the only agency that is currently producing recycled water. CVWD operates five water reclamation plants (WRPs), three of which generate recycled water for irrigation of golf courses and large landscaped areas. Indio Water Authority (IWA) and Valley Sanitary District (VSD) are currently evaluating potential options for recycled water use, although no recycled water is produced at this time.

Irrigation needs at the BDCC golf course and Bermuda Dunes Airport are currently met with private well supplies. Current plans are to serve Canal water to the BDCC for irrigation purposes. There are currently no plans to provide recycled water to these customers, or to any other customer.

MDMWC does not currently provide any wastewater collection services within its service area. Roughly a third of MDMWC's customers have wastewater collection services provided by CVWD, with the remainder on septic systems. The wastewater that is collected by CVWD is conveyed to CVWD's WRP-7 facility,

which treats and supplies recycled water. The wastewater within the MDMWC service area that is sent to CVWD's WRP-7 facility is not separately metered; therefore, volumes are estimated.

MDMWC does not provide any wastewater treatment service. The wastewater that is collected by CVWD is conveyed to CVWD's WRP-7 facility, located approximately 3 miles north of MDMWC's service area in north Indio.

Wastewater collection within the MDMWC service area is summarized in Table 9-15.

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Table 9-15. DWR 6-2R Wastewater Collected within Service Area in 2020

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated	Wastewater Volume Collected from UWMP Service Area in 2020 (AFY)	Name of Wastewater Agency Receiving Collected Wastewater	Wastewater Treatment Plant Name	Wastewater Treatment Plant Located within UWMP Area	WWTP Operation Contracted to a Third Party
CVWD	Estimated	100	CVWD	WRP-7	No	No
Total		100				
Note: For MDMWC customers on CVWD sewer, "Volume of Wastewater Collected from UWMP Service Area" was estimated assuming 35 percent of metered water consumption becomes wastewater using an average of expected ranges of indoor versus outdoor use for the Bermuda Dunes area.						

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MDMWC did not use recycled water within its service area in 2020. MDMWC's 2015 UWMP did not project the use of recycled water in 2020.

MDMWC does not have current or planned uses for recycled water primarily due to the lack of wastewater treatment capabilities within the service area. Some limited recycled water service is being provided in the surrounding area, and while water agencies in the vicinity are continuing to evaluate and plan for recycled water use, the future availability of recycled water and location of recycled water facilities with respect to MDMWC is uncertain. Costs to install wastewater treatment facilities or a dual recycled water distribution system are likely prohibitive at this time. Furthermore, the largest potential recycled water users currently utilize low cost private well supplies, with Canal water already planned as the new supply for the BDCC golf course irrigation.

9.6.2.6 Desalinated Water Opportunities

Developing new desalinated water sources for MDMWC is currently impractical for several reasons including the lack of a saline water source; the distance, costs, and lack of infrastructure for desalinated ocean water; and brine management issues. While MDMWC's groundwater supply does not require any desalination treatment, increasing salinity in the Coachella Valley Groundwater Basin is being managed through the Coachella Valley Groundwater Basin Salt and Nutrient Management Plan, with emphasis on source control.

9.6.2.7 Water Exchanges and Transfers

MDMWC does not currently have plans to participate in direct water exchanges. Water exchanges related to the exchange of State Water Project (SWP) rights for Colorado River Water (CRW) rights for basin replenishment are handled by CVWD and Desert Water Agency (DWA).

MDMWC does not currently have plans to participate in direct water transfers. Water transfers related to basin replenishment are handled by CVWD and DWA.

MDMWC does not have any existing emergency interties. Opportunities may exist for the construction of emergency interties between MDMWC and CVWD and/or IWA based on the proximity of water distribution infrastructure; however, there are no planned projects at this time.

9.6.2.8 Future Water Projects

Because MDMWC's service area is substantially built-out and demands have recently reduced due to drought conditions and water conservation measures, MDMWC does not have plans for substantial water supply projects within the urban water management planning horizon outside of MDMWC's capital improvement projects that are part of regular system maintenance. The planned project to serve Canal water to the BDCC for irrigation purposes is being implemented by CVWD; therefore, specific project details are not included in this chapter.

9.6.2.9 Summary of Existing and Planned Sources of Water

Existing water supply volumes are presented in Table 9-16. These figures are based on MDMWC production records for 2020. One hundred percent of the supply was from the Indio Subbasin.

Planned water supply volumes are presented in Table 9-17. As the Indio Subbasin is anticipated to be reasonably reliable for the urban water management planning horizon, the projected water supply is assumed to be equivalent to the projected water demand.

Table 9-16. DWR 6-8R Actual Water Supplies

Water Supply	Additional Detail on Water Supply	2020	
		Actual Volume (AFY)	Water Quality
Groundwater (not desalinated)	Indio Subbasin	3,987	Drinking Water
Total		3,987	

Table 9-17. DWR 6-9 R Projected Water Supplies (AFY)

Water Supply	Additional Detail on Water Supply	2025	2030	2035	2040	2045
Groundwater (not desalinated)	Indio Subbasin	4,376	4,539	4,702	4,737	4,771
Total		4,376	4,539	4,702	4,737	4,771

9.6.2.10 Special Conditions

A discussion of potential climate change impacts on MDMWC’s supplies is provided in Chapter 3 of the RUWMP.

9.6.3 Submittal Tables Using Optional Planning Tool

Because MDMWCs supply availability does not vary seasonally during a typical year, MDMWC has not completed the optional planning tool that was provided by DWR.

9.6.4 Energy Use

MDMWC has compiled data to document the energy used for water management operations. MDMWC used the Total Utility Approach to estimate the energy intensity of its water management operations.

The data are summarized in Table 9-18.

Table 9-18. DWR O-1B Energy Intensity Reporting

Table O-1B: Recommended Energy Reporting - Total Utility Approach				
Enter Start Date for Reporting Period	1/1/20	Urban Water Supplier Operational Control		
End Date	12/30/20			
Is upstream embedded in the values reported?	No	Sum of All Water Management Processes	Non-Consequential Hydropower	
<i>Water Volume Units Used</i>	<i>AF</i>	Total Utility	Hydropower	Net Utility
<i>Volume of Water Entering Process (volume unit)</i>		3,987	0	0
<i>Energy Consumed (kWh)</i>		2,526,200	0	0
<i>Energy Intensity (kWh/volume)</i>		633.6	0.0	633.6
Quantity of Self-Generated Renewable Energy				
0	kWh			
Data Quality (<i>Estimate, Metered Data, Combination of Estimates and Metered Data</i>)				
<i>Combination of Estimates and Metered Data</i>				
Data Quality Narrative				
Energy use data was obtained from electricity consumption records maintained by the agency.				
Narrative				
The agency uses energy for groundwater production from wells, pumping at booster stations from lower pressure zones to higher pressure zones, and treatment processes.				

9.7 Water Service Reliability and Drought Risk Assessment

This section describes MDMWC’s long term water supply reliability including historical reliability, reliability for average, single dry, and multiple dry years, and constraints that may impact supply reliability.

9.7.1 Reliability Overview

MDMWC’s groundwater supply has historically been able to meet demands during dry periods.

Further discussion of constraints on local water resources is included in Chapter 3 of the RUWMP.

9.7.2 Water Service Reliability Assessment

Average year is defined as, one year, or an averaged range of years, that most closely represents the median average water supply available to the agency. The UWMP Act uses the term “normal” conditions. Within the UWMP guidebook, the terms “normal” and “average” are used interchangeably.

The single-dry year is the year that represents the lowest water supply available to the agency.

The multiple-dry year period is the period that represents the lowest average water supply availability to the agency for a consecutive multiple year period (five years or more). The Guidebook 2020 defines “multiple dry years” to mean five dry years.

MDMWC only has one source for meeting its potable water demands. All potable water demands are met using groundwater wells in the Indio Subbasin. The groundwater basin has been historically reliable as it is not significantly affected by short-term seasonal or climate changes, and there has been no historical occurrence of pumping limitations.

The single dry year is the year that represents the lowest water supply available. For this UWMP, 2014 represents the single dry year as a worst case with strict water conservation measures in place. With regards to SWP water, only 5 percent of Table A water allocation were delivered in 2014.

The multiple dry year period is the period that represents the lowest average water supply availability for a consecutive multi year period (five years or more). This is generally considered to be the lowest average runoff for a consecutive multiple year period (five years or more) for a watershed since 1903. This UWMP uses 2012 through 2016 as the multiple dry year period.

Table 9-19 provides a summary of base years and supply availability.

Table 9-19. DWR 7-1R Basis of Water Year Data

Year Type	Base Year	Available Supply if Year Type Repeats
		Percent of Average Supply
Average Year	2020	100%
Single-Dry Year	2014	100%
Consecutive Dry Years 1st Year	2012	100%
Consecutive Dry Years 2nd Year	2013	100%
Consecutive Dry Years 3rd Year	2014	100%
Consecutive Dry Years 4th Year	2015	100%
Consecutive Dry Years 5th Year	2016	100%

The Indio Subbasin storage will be used in dry years to support potential differences between demands and supply. The groundwater basin has a capacity of approximately 28.8 million acre-feet. It is capable of meeting the water demands of regional agencies for extended periods during normal, single-dry and multiple-dry year conditions.

The expected water supply availability for an average (normal) year is provided in Table 9-20. The available supply is assumed equivalent to the projected demands since the basin is non-adjudicated and based on the expected reliability of the groundwater basin.

Table 9-20. DWR 7-2R Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY) From DWR Table 6-9R	4,376	4,539	4,702	4,737	4,771
Demand Totals (AFY) From DWR Table 4-3R	4,376	4,539	4,702	4,737	4,771
Difference	0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

Supply reliability during a single-dry year scenario was assumed to be similar to the average year scenario. Table 9-21 summarizes the single-dry year supply and demand scenario.

Table 9-21. DWR 7-3R Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (AFY)	4,376	4,539	4,702	4,737	4,771
Demand Totals (AFY)	4,376	4,539	4,702	4,737	4,771
Difference	0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.					

Reliability during a multiple-dry year scenario was assumed to be similar to the average year scenario for reasons discussed previously. Table 9-22 summarizes the multiple-dry year supply and demand scenario.

Table 9-22. DWR 7-4R Multiple Dry Years Supply and Demand Comparison

		2025	2030	2035	2040	2045
First Year	Supply Totals (AFY)	4,376	4,539	4,702	4,737	4,771
	Demand Totals (AFY)	4,376	4,539	4,702	4,737	4,771
Difference		0	0	0	0	0
Second Year	Supply Totals (AFY)	4,376	4,539	4,702	4,737	4,771
	Demand Totals (AFY)	4,376	4,539	4,702	4,737	4,771
Difference		0	0	0	0	0
Third Year	Supply Totals (AFY)	4,376	4,539	4,702	4,737	4,771
	Demand Totals (AFY)	4,376	4,539	4,702	4,737	4,771
Difference		0	0	0	0	0
Fourth Year	Supply Totals (AFY)	4,376	4,539	4,702	4,737	4,771
	Demand Totals (AFY)	4,376	4,539	4,702	4,737	4,771
Difference		0	0	0	0	0
Fifth Year	Supply Totals (AFY)	4,376	4,539	4,702	4,737	4,771
	Demand Totals (AFY)	4,376	4,539	4,702	4,737	4,771
Difference		0	0	0	0	0
Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.						

While MDMWC relies on groundwater to meet demands, which has historically been a local and reliable source of water, it is recognized that declining groundwater levels in the Coachella Valley Groundwater Basin and the issue of overdraft must be addressed in order to ensure the long-term reliability of groundwater as a source of supply. The recharge of the Coachella Valley Groundwater Basin is also heavily dependent upon CRW and the exchange of SWP water rights.

Discussion of the regional efforts to enhance reliability are included in Chapter 3 of the RUWMP.

9.7.3 Drought Risk Assessment

A new requirement for the 2020 UWMP is a five-year Drought Risk Assessment (DRA). The DRA is based on projections of demand and available supply for the next five years.

Demands are expected to increase to the projected demands for 2025. It is expected that conservation messaging and programs will prevent any significant increase in demands by existing customers due to dry conditions. The groundwater supply is reliable for a five-year dry period as the volume in storage can be drawn down during a dry period. The results of the DRA are summarized in Table 9-23.

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Table 9-23. DWR 7-5 Five-Year Drought Risk Assessment

2021	Gross Water Use (AFY)	4,065
	Total Supplies (AFY)	4,065
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%	
2022	Gross Water Use (AFY)	4,143
	Total Supplies (AFY)	4,143
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%	
2023	Gross Water Use (AFY)	4,220
	Total Supplies (AFY)	4,220
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%	
2024	Gross Water Use (AFY)	4,298
	Total Supplies (AFY)	4,298
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%	
2025	Gross Water Use (AFY)	4,376
	Total Supplies (AFY)	4,376
	Surplus/Shortfall without 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 Percent Use Reduction from WSCP Action	0%	
<p>Note: The RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability. During a normal year, single-dry year, or five-dry year period, the agencies could produce additional groundwater if demands exceeded the estimates shown here.</p>		

9.8 Water Shortage Contingency Plan

Water shortage contingency planning is a program that is developed in the form of a Water Shortage Contingency Plan (WSCP) that is used to help manage droughts and other short-term water shortages or supply interruptions by temporarily reducing demand and finding alternate water sources to temporarily increase supply utilizing methods that are within the authority of the water agency. As droughts are part of the normal water cycle in California, this type of planning is a necessity.

MDMWC has developed a WSCP to help manage potential future water shortages. The WSCP is being adopted separately from the RUWMP and may be modified as needed based on changing conditions. The WSCP is an attachment to this RUWMP.

9.9 Demand Management Measures

This section describes MDMWC's water conservation goals, existing and proposed conservation programs, and efforts to promote conservation and reduce demand in order to meet its urban water use reduction targets. Setting goals and selecting appropriate water conservation measures is a continuous process that evolves based upon legislation, technologies, and past measure effectiveness.

9.9.1 Demand Management Measures for Wholesale Suppliers

MDMWC is not wholesale supplier, and therefore this section is not applicable.

9.9.2 Existing Demand Management Measures for Retail

MDMWC aims to reduce unnecessary water usage and eliminate wasteful practices. MDMWC plans to achieve these goals through a combination of promotion, public outreach, voluntary, and mandatory measures. MDMWC also employs a water conservation staff for support.

9.9.2.1 Water Waste Prevention Ordinances

There are a series of State Water Resources Control Board (SWRCB) ordinances regarding the waste of water that remain in effect at all times. Depending on State mandates for water use reduction and depending on the stage of the WSCP, additional water waste prevention ordinances may be enacted.

9.9.2.2 Metering

Except for fire protection services, all customer service connections are fully metered. Most multi-family units are served by one meter. A few multi-family units are metered separately at the owner's request. MDMWC is also in the process of implementing a meter replacement program.

9.9.2.3 Conservation Pricing

MDMWC has adopted a four-tier budget-based rate structure, which is a conservation rate structure that remains active at all times. Tiers are based upon customer water budgets. As the customer uses water in excess of their budget, the tier increases with a progressively increasing unit water cost.

9.9.2.4 Public Education and Outreach

MDMWC is a partner and contributing member of CV Water Counts (<http://cvwatercounts.com>), a local program consisting of the six water agencies in the Coachella Valley: CVWD, IWA, CWA, Mission Springs Water District (MSWD), DWA, and MDMWC. CV Water Counts promotes the message of water conservation, provides water saving tips, landscaping and leak detection resources, as well as resources for parents, teachers, and children. MDMWC provides links on its website (<http://www.myomawater.com/>) to CV Water Counts as well as Save Our Water (<http://saveourwater.com>), a statewide conservation

program that aims to make water conservation a daily habit through partnering with local water agencies, social marketing, and event sponsorships.

MDMWC also reaches its customers by providing water conservation pamphlets at the MDMWC office as well as by periodically distributing water conservation related materials through customer water bills.

In addition, the State provides rebate incentives for turf replacement and water-efficient toilet replacement.

9.9.2.5 Programs to Assess and Manage Distribution System Real Losses

MDMWC controls water loss by comparing production with consumption, regular and frequent inspection of distribution facilities, advising customers of observed or suspected leakage downstream of meters, and immediate leak repair.

9.9.2.6 Water Conservation Program Coordination and Staffing Support

MDMWC adopted a conservation policy in 2003 as part of its Rules and Regulations, encouraging efficiency in water use and actively discouraging the waste of water. The policy covers shortages, waste, and landscaping provisions.

MDMWC has recently added a conservation coordinator to its staff and is in the process of developing a formal water conservation program.

9.9.2.7 Other Demand Management Measures

MDMWC makes the following conservation assistance available to high consumption users or those who request it at no cost:

- Location and instructions on how to read water meter.
- Identifications of high consumption areas.
- Check for leakage.
- Irrigation schedule and check timers.
- Recommendations on sprinkler repair or improvements.
- Information on landscape conservation methods including water efficient design, maintenance, and plant selection.

9.9.3 Implementation

MDMWC has been implementing its conservation policy since 2003, and has continued to support water conservation over the past five years through the demand management measures (DMMs) described herein. The conservation pricing, public outreach, and State-mandated measures due to the drought have all had a significant impact on reducing per capita demands. In addition, voluntary customer turf replacement has reduced MDMWC's largest demand component, landscape irrigation.

MDMWC has achieved its 2020 target per capita water use. MDMWC plans to continue support of its water conservation policy, water conservation program development, and implementation of DMMs to support water conservation as a way of life.

9.9.4 Water Use Objectives (Future Requirements)

Updated water use objectives are being developed for water suppliers to meet the requirements of the CWC. The final water use objectives for MDMWC have not yet been determined. The DMMs described in this section are expected to align with MDMWC's efforts to comply with these objectives when they are finalized.

9.10 Plan Adoption, Submittal, and Implementation

This section addresses the CWC requirements for a public hearing, the adoption process for the RUWMP and MDMWC’s WSCP, plan submittal, plan implementation, and the process for amending an adopted UWMP or WSCP.

9.10.1 Inclusion of All 2020 Data

This RUWMP includes all water use and planning data for the entire calendar year of 2020.

9.10.2 Notice of Public Hearing

Water suppliers must hold a public hearing prior to adopting the Plan to provide opportunity for public input and must provide adequate notice of public hearing in accordance with the CWC. MDMWC supplies water to the Bermuda Dunes CDP in the County of Riverside and to a portion of the City of La Quinta. As described in Chapter 2 of the RUWMP, these cities and counties were notified that MDMWC was updating its UWMP more than 60 days before the public hearing.

Notifications of a public hearing were provided in accordance with the CWC as indicated in Table 9-24. Copies of notifications are provided in Appendix B.

Table 9-24. DWR 10-1R Notification to Cities and Counties

City	60 Day Notice	Notice of Public Hearing
La Quinta	Yes	Yes
County	60 Day Notice	Notice of Public Hearing
Riverside County	Yes	Yes

Notification of a public hearing was provided in accordance with the CWC and Government Code 6066. Copies of notifications are provided in Appendix B. Copies of the draft RUWMP and MDMWC’s WSCP were made available on MDMWC’s website (<http://www.myomawater.com>) in electronic format, and hard copies were made available at MDMWC’s office.

9.10.3 Public Hearing and Adoption

A public/adoption hearing was held prior to MDMWC’s adoption of the 2020 RUWMP and MDMWC’s WSCP. This hearing took place on June 22, 2021 as a Virtual Meeting (zoom). Information was provided on MDMWC’s baseline values, water use targets, and economic impacts of Plan implementation. Public comments were solicited and addressed.

The 2020 RUWMP and MDMWC’s WSCP were adopted by the MDMWC Board of Directors on June 22, 2021.

9.10.4 Plan Submittal

The 2020 RUWMP and MDMWC’s WSCP will be submitted to DWR, the California State Library, County of Riverside, and City of La Quinta within 30 days after adoption. The submittal to DWR will be done electronically online through DWR’s submittal tool WUEdata (<https://wuedata.water.ca.gov/secure>). The submittal to the California State Library will be made by CD or hardcopy to:

California State Library Government Publications Section

P.O. Box 942837 Sacramento, CA 94237-0001

Attention: Coordinator, Urban Water Management Plans

9.10.5 Public Availability

MDMWC will make the 2020 RUWMP and MDMWC's WSCP available to the public online in electronic format on MDMWC's website (<http://www.myomawater.com>).

9.10.6 Notification to Public Utilities Commission

MDMWC is not regulated by the California Public Utilities Commission (CPUC), and therefore this requirement does not apply.

9.10.7 Amending an Adopted UWMP or Water Shortage Contingency Plan

If MDMWC identifies the need to amend the 2020 RUWMP or MDMWC's WSCP, it will follow similar processes for notification of cities, counties, and the general public. MDMWC will hold a public hearing to consider the amended RUWMP or WSCP and will follow the same procedures for adoption, submittal, and implementation as the original plans.

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