URBAN WATER MANAGEMENT PLAN

Prepared for

RUBIDOUX DISTRICT
CALIFORNIA'S FIRST COMMUNITY SERVICES 1952

June 3, 2021

PUBLIC REVIEW DRAFT

ALBERT A. WEBB ASSOCIATES

3590 Rubidoux Boulevard
Jurupa Valley, CA 92509
(951) 684-7580
General Manager: Jeff Sims, P.E.

2020 Urban Water Management Plan

Adopted XX

Prepared by:

3788 McCray Street
Riverside, CA 92506
(951) 686-1070
Program Manager: Brad Sackett, P.E.
Project Manager: Autumn DeWoody

TABLE OF CONTENTS

APPENDICES

FIGURES

TABLES

CHARTS

ACRONYMS

AMR	Automatic Meter Reading
AWWA	American Water Works Association
BMP	Best Management Practice
CASGEM	California Statewide Groundwater Elevation Monitoring
CDA	Chino Desalter Authority
CCR	California Code of Regulations
CDP	Census Designated Place
CFD	Community Facilities District
CII	Commercial, Industrial, and Institutional
CIMIS	California Irrigation Management Information System
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
CWSRF	California Water State Revolving Fund

DAC	Disadvantaged Community
DMM	Demand Management Measure
DWR	Department of Water Resources
DYY	Dry Year Yield
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
GIS	Geographic Information System
GRCC	Groundwater Recharge Coordinating Committee
GWMP	Groundwater Management Plan
ICS	Incident Command System
IEBL	Inland Empire Brine Line
IERCD	Inland Empire Resource Conservation District
IEUA	Inland Empire Utilities Agency
ILI	Infrastructure Leaking Index
ITP	Independent Technical Panel
JCSD	Jurupa Community Services District
JPA	Joint Powers Authority
MCL	Maximum Contaminant Level
MHI	Median Household Income
MOU	Memorandum of Understanding
MWD	The Metropolitan Water District of Southern California
MZ	Management Zone
N/A	Not Applicable
OBMP	Optimum Basin Management Plan
PWS	Public Water System
PWSS	Public Water System Statistics
RCSD	Rubidoux Community Services District
RHNA	Regional Housing Needs Assessment
RIX	Rapid Infiltration Extraction
RPU	Riverside Public Utilities
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCP	Regional Water Quality Control Plant
SARI	Santa Ana River Interceptor
SARWC	Santa Ana River Water Company
SAWPA	Santa Ana Watershed Project Authority
SB	(California) Senate Bill
SBCFCD	San Bernardino County Flood Control District
SCAG	Southern California Association of Governments
SWP	State Water Project
SWRCB	State Water Resources Control Board
TVMWD	Three Valleys Metropolitan Water District
UCR	University of California, Riverside
UWMP	Urban Water Management Plan

WEBB	Albert A. Webb Associates
WET	Water Education for Teachers
WMWD	Western Municipal Water District
WRCRWA	Western Riverside County Regional Wastewater Authority
WSCP	Water Shortage Contingency Plan
WUE	Water Use Efficiency

Units of Measurement and Chemical Symbols

AF	Acre Feet
AFY	Acre Feet per Year
CY	Calendar Year
EDU	Equivalent Dwelling Unit
°F	Fahrenheit
FY	Fiscal Year
GPCD	Gallons per Capita per Day
GPM	Gallons per Minute
HCF	Hundred Cubic Feet
MEU	Meter Equivalent Unit
MGD	Million Gallons per Day
mg/L	Milligrams per Liter
TDS	Total Dissolved Solids

DOCUMENT PREPARATION TEAM

ALBERT A. WEBB ASSOCIATES
Brad Sackett, PE, Senior Engineer
Autumn DeWoody, Senior Environmental Analyst
Kris Danielson, PE, Senior Engineer
Eliza Laws, Senior Environmental Analyst
Monica Tobias, Associate Environmental Analyst
Chandler Draschlin, EIT, Associate Engineer
Noemi Avila, Assistant Environmental Analyst

RUBIDOUX COMMUNITY SERVICES DISTRICT
Jeff Sims, PE, General Manager
Ted Beckwith, PE, Director of Engineering
Yvonne Reyes, Assistant Engineer
Lee Bugbee, System Operator III
Miguel Valdez, Operations Manager

CHAPTER 1 INTRODUCTION AND LAY DESCRIPTION

1.1 REGULATORY BACKGROUND

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Act). The Act is codified in California Water Code (CWC or Water Code) Sections 10610 - 10657. The Act requires an urban water supplier (Supplier) that is providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet (AF) of water annually to adopt an Urban Water Management Plan (UWMP) and update it every five years for the purpose of demonstrating water supply reliability in normal, single dry, and multiple dry years. The Act requires each Supplier to submit their UWMP to the California Department of Water Resources (DWR). DWR staff then reviews the submitted plans to make sure they have satisfied the requirements identified in the Act, including subsequent revisions. DWR will then submit a report to the State Legislature summarizing the status of the UWMPs.

In order for an urban water supplier to be eligible for any water grant or loan administered by DWR, the supplier must have a current UWMP on file that DWR has determined met the current Act requirements. A current UWMP must also be maintained by the supplier throughout the term of any grant or loan administered by DWR. Depending on the conditions that are specified in the funding guidelines, a current UWMP may also be required in order to be eligible for other State funding sources.

With the adoption of the Water Conservation Act of 2009, also known as SB X7-7 (Senate Bill 7 of the Senate's 7th Extraordinary Session), the State is required to reduce urban per person water use by 20 percent by the year 2020. SB X7-7 is codified in CWC sections 10608 – 10608.64. To achieve this goal, each Supplier that prepares an UWMP to also develop an urban water use target to help the state collectively achieve a 20-percent reduction in water use by 2020.

Since 2015, the Act has been expanded and revised significantly in response to prolonged drought, groundwater overdraft, regulatory revisions, and changing climatic conditions. Although the exact changes in the Water Code are too numerous to list here, the significant new requirements for the 2020 UWMPs are:

- Water reliability assessment for a drought lasting five consecutive years;
- Drought Risk Assessment for a five-year period from 2021 to 2025;
- Seismic risk assessment of water system facilities and a mitigation plan;
- Water Shortage Contingency Plan (WSCP) with action items for a drought or catastrophic supply interruption;
- Consistency with Groundwater Sustainability Plans that are currently being prepared in certain groundwater basins; and
- A lay description of the fundamental conclusions of the UWMP, especially regarding water service reliability, challenges ahead, and strategies for managing reliability risks.

OUR MISSION

To provide high quality water service, sewer disposal, trash, and fire mitigation services at the best value for our customers.

The Rubidoux Community Services District (RCSD or "District") is a public retail urban water supplier. It is the stated goal of RCSD to deliver high-quality water supply service at the best value for their customers. The purpose of the 2020 UWMP is to outline progress toward conservation and supply reliability goals since the District's 2015 UWMP was prepared, as well to outline future long-term opportunities to meet projected water demands while also assessing the impact of long-term drought and climate change. The identification of future opportunities for water supplies in the UWMP neither commits RCSD to any stated endeavor, nor precludes them from exploring a different project that is not identified in the UWMP.

Another purpose of this document is to inform the local wholesale water provider of RCSD's projected population and projected need for water supplies. This includes Western Municipal Water District (WMWD or "Western"). The District currently does not obtain water from a wholesale water supplier, and recycled water is not currently available to the District.

This document also intends to communicate forecasted growth to the wastewater treatment agency that provides sewer service to the District. This includes the City of Riverside Public Utilities Department and the Regional Water Quality Control Plant (RWQCP).

Albert A. Webb Associates (WEBB) was contracted to prepare this document on behalf of RCSD under their staff advisement and approval. The RCSD Board of Directors held a public hearing on June 17, 2021 and adopted the UWMP on June 17, 2021 as recorded in RCSD Resolution No. XXXX which is provided in **Appendix A**.

1.2 SIMPLE LAY DESCRIPTION OF THE 2020 UWMP FINDINGS

RCSD's 2020 Urban Water Management Plan (UWMP) has been prepared in compliance with the California Water Code (CWC or Water Code). This description satisfies the requirement in the Water Code Section 10630.5 to include a simple lay description of water service reliability and the reasonably foreseeable challenges and corresponding solutions anticipated for the next 20-years.

Rubidoux Community Services District (RCSD or District) was organized in 1952 as the first Community Services District in the State of California. Currently, the entire District service area covers approximately 5,167 acres; however, 329 acres receive water service from West Valley Water District and is therefore not a part of this UWMP. The District provides water service to approximately 4,907 acres (7.7 square miles). The District's water supply come entirely from local groundwater and delivered to 6,345 service connections via 70 miles of water pipelines. RCSD has always been able to provide its customers with the water they need and fully expects that it will continue to do so for the foreseeable future based on the analysis herein.

Since the adoption of the 2015 Urban Water Management Plan, RCSD has been successful in meeting the goals and intent of the Urban Water Management Planning Act of 1983 and the Water Conservation Act of 2009. The District has accomplished the following items which are discussed further in this document:

- Supplied in calendar year (CY) 2020, 4,770 acre-feet (AF) of drinking water to 6,335 metered connections, including residential, commercial, industrial, governmental, losses, and hydrant meters.[1]

[1] One acre-foot of water is the same as 325,851.43 gallons.

- Supplied in CY 2020, 417 AF of non-potable water to 10 meters used for irrigation and construction water.

- Met the 2020 water use target pursuant to the Water Conservation Act of 2009 (SB X7-7) of 166 gallons per capita per day (GPCD) with an actual CY 2020 water use rate of 126 GPCD.

- Obtained a grant award of $300,000 from California Office of Emergency Services' Community Power Resiliency Program to install fixed generators at Well 1A, Well 2, and Mission Booster Station to improve system reliability during power outages.

- Rehabilitated Well 18 and added additional treatment systems to remove PFAS at Wells 1A, 2, 4, 6, 8, and 18 and the Thompson Water Treatment Facility.

- Prepared and submitted validated water loss audits to the State Department of Water Resources each year.

- Began conversion of customer meters to Automatic Meter Reading (AMR) system, which provides real-time information on water use that can help identify leaks or meter tampering. Require all new housing developments in the future to have AMR meters.

- Replaced approximately 2,000 water meters that were damaged or failed and conducted about 30 field tests of meters between 2016 and 2020.

- Adopted a gradual water rate increase beginning in 2020 through fiscal year 2023/2024 in accordance with Proposition 218 and compliant with AB 3030.

- Reduced potable water losses each year since 2017.

- Remained a member of the California Water Efficiency Partnership (CalWEP) and the Emergency Response Network of the Inland Empire (ERNIE).

- Obtained corrosion and seismic/structural/safety engineering evaluations for the District's four active water storage tanks.

- Annexed the Agua Mansa Commerce Park Specific Plan area into the District. Began the process to annex and detach other areas along the District boundary so that the service area only includes areas served by RCSD.

- Consumed approximately 3.1 million kWh of electricity in CY 2020 to operate the production, treatment, distribution, conveyance, and other elements of the water distribution system that are within RCSD's operational control. Generated approximately 1,570 kWh with solar panels on the reservoir tanks.

- Made a commitment in 2021-2022 to update the RCSD Water Master Plan, Sewer Master Plan, and the RCSD Emergency Response Plan and Operations Plan, and prepare a Risk and Resilience Plan pursuant to the American Water Infrastructure Act.

Water Supplies

RCSD obtains all of its water supply from the local groundwater basin. This basin is identified as the "Riverside South Basin" and has been historically stable and sufficient to meet the needs of the District. Recorded groundwater levels show the basin is resilient to short-term and long-term drought conditions. The water quality in the basin however is impacted and requires treatment prior to distribution unless it is used for irrigation from a non-potable well. RCSD is currently adding additional treatment systems to meet current state notification limits for a new group of emerging contaminants called PFAS. With these additional treatment systems, the District will continue meeting state and federal limits to provide safe drinking water to all residents. In the event of a catastrophic event that would cut off water supplies to at least some but not likely all of the District, RCSD is prepared to bring in water from neighboring agencies, utilize water in storage reservoirs, use backup generators, and reroute water to bring the system back online as quickly as possible.

For the future, the District is planning to add several well fields and treatment facilities over the next 20 years to replace aging wells and meet the needs of future customers. Within the next five years, the District is planning to make a connection with the City of Riverside in order to bring imported water supplies into the drinking water distribution system. The purpose of which is to reduce the concentration of total dissolved solids (TDS, or salts) in the District's

wastewater (sewage). Bringing recycled water to RCSD customers is currently cost-prohibitive.

Models predict that over the next 20 years the potential effects of climate change to this region of the state will result in a general increase in temperature and decrease in rainfall, with rainfall occurring in more intense but shorter events. This may affect how much groundwater is available and change how much water customers use outdoors to keep lawns and landscaping thriving in the hotter temperatures.

Water Use

The majority of RCSD customers are residential with a small commercial / industrial / governmental sector. It is estimated that there are 36,827 people living within the District's water service boundary as of CY 2020, and this is projected to increase to about 52,900 persons as vacant properties develop. Buildout of the District, or rather when all the properties are developed as planned by the City of Jurupa Valley, is estimated to be reached by about 2036 and at that time, ultimate water use is expected to be 10,800 AF per year (not including any water sold to JCSD or others, which is currently estimated at an additional 2,000 AF per year).

Fundamental Determinations of the Plan

The water supplies that are currently available to the District are projected to remain a reliable source of water to meet the demands of customers regardless of foreseeable potential constraints including drought and water quality. Additional water supplies will be brought online to meet the projected demands of future residents through buildout of the service area. The projections of reliability considered the potential effects of climate change, impacted water quality, water shortage, the effectiveness of water conservation and emergency water supplies, and the effects of five-consecutive-year drought periods. The District is improving its metering system to more closely monitor water use and address infrastructure and water quality constraints by replacing and upgrading aging facilities. The District will continue to evaluate preparedness to respond to the effects of long-term drought and lessen the impacts of catastrophic events to the distribution system and supply sources.

CHAPTER 2 PLAN PREPARATION

2.1 PLAN PREPARATION

Pursuant to Water Code Section 10620(b), every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier. RCSD prepared and adopted an UWMP beginning in 1985 and every five years thereafter.

This Plan follows the report organization outlined in the State UWMP Guidebook (Final March 2021). DWR has provided tables that are required to be completed by the District as part of the UWMP. Because RCSD is a retail water supplier and not a "wholesale" water supplier, the tables and information provided in the UWMP follow the requirements for "retail" water suppliers. The required UWMP tables provided by DWR are in shades of blue and titled "Submittal Table 2-1," for example. The additional tables created during the writing of this report that are not required for DWR are numbered using the chapter number in alphabetical order such as "Table 2A," for example. The required DWR tables pertaining to Baselines and Targets (Chapter 5) begin with "SB X7-7 Table…" and are shaded brown and green. A checklist to ensure compliance of this Plan with the UWMP Act requirements is provided in **Appendix B**.

The Water Code requires that the water use and planning data for the entire year of 2020 is used, and because RCSD reports on a calendar year (CY) basis, data included in this UWMP is through December 31, 2020. During CY 2020, RCSD supplied 4,770 acre-feet (AF) of potable water to 6,335 potable meters and 417 AF of non-potable water to 10 non-potable meters, as shown in **Submittal Table 2-1**. The District has just one Public Water System (PWS). Each PWS is assigned a number and they are regulated by the State Water Resources Control Board (SWRCB or State Water Board), Division of Drinking Water.

Submittal Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 *
Add additional rows as needed			
CA3310044	Rubidoux Community Services District	6335	4,770
	TOTAL	6,335	4,770
**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES: From RCSD Annual Production Summary 2020. CY 2020, units in AF, potable water only. Non-potable water supplied in CY2020 was 417 AF through 10 connections.			

DWR suggests that water suppliers engage in *regional* planning to reduce inefficiencies when many agencies are sharing the same water supply source. Although the Water Code provides mechanisms for participating in regional urban water management planning, RCSD has chosen "Individual Reporting" for its UWMP, as identified in **Submittal Table 2-2**.

Submittal Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* (select from drop down list)
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		
NOTES:			

Suppliers must report their water data in the same units consistently throughout the UWMP. **Submittal Table 2-3** confirms that RCSD is a retailer with the data provided herein on a calendar year (CY) basis and all units of measure in this UWMP are in acre-feet (AF).

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

2.2 PLAN COORDINATION

RCSD does not currently receive water supplies from a wholesale supplier. However, RCSD is within the service area of Western Municipal Water District (WMWD or "Western") and could receive wholesale water supplies from Western in the future. Another reason RCSD has coordinated with Western is that Western is a court-appointed member of the Western-San Bernardino Watermaster, which is responsible for implementing the court's adjudication of the groundwater basin that RCSD utilizes. This includes reporting to the court all groundwater production and recharge activities by all pumpers in the basin, including RCSD.

RCSD received a request from Western on March 23, 2021 for the District's projected imported water needs, local supplies, and total District water demand. RCSD provided said information to Western on April 12, 2021 for use in its respective UWMP as documented in **Submittal Table 2-4**. Copies of all coordination with the wholesaler, other agencies, and land use authorities are provided in **Appendix C**.

Submittal Table 2-4 Retail: Water Supplier Information Exchange
The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name
Add additional rows as needed
Western Municipal Water District
NOTES:

The Water Code also requires Suppliers to coordinate the preparation of the UWMP with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable (CWC section 10620(d)(3)). Further, the Water Code requires notices to be sent at least 60 days prior to the public hearing to any city or county within the District's service area (CWC section 10621(b)). The District's water service area is contained entirely within the City of Jurupa Valley. A small area of unincorporated San Bernardino County is technically within the District boundary, but water service is not provided there. RCSD notified and solicited input from the following pertinent agencies for preparation of this Plan:

- City of Jurupa Valley
- City of Riverside Public Utilities
- City of Riverside Regional Water Quality Control Plant
- County of Riverside
- County of San Bernardino
- Cucamonga Valley Water District
- Inland Empire Utilities Agency
- Jurupa Community Services District
- Jurupa Unified School District
- Santa Ana River Water Company
- Western Municipal Water District
- Western-San Bernardino Watermaster
- West Valley Water District
- City of Colton Water Department
- Riverside Highland Water Company
- Santa Ana Watershed Project Authority

RCSD sent a letter to the entities listed above on March 10, 2021 notifying of the District's intent to update the UWMP including the Water Shortage Contingency Plan. The District sent a second notice to the same entities dated April 28, 2021 with details on the public hearing for the UWMP and Water Shortage Contingency Plan. Copies of all notices are included in **Appendix D**. No responses to the letters were received by the District. Chapter 10 includes detailed information on notifications and plan adoption proceedings.

2.2.1 Land Use Agency Coordination

As described in further detail in Chapter 3, RCSD and WEBB met with Planning Department staff from the City of Jurupa Valley on March 11, 2021 pursuant to CWC Section 10631(a). A copy of the meeting request letter is located in Appendix C. This meeting was held for the specific purpose of coordinating on the most appropriate land use data to use for the 2020 UWMP. The City staff provided current information on demographics, land use plan updates, and accessory dwelling unit (ADU) applications.

Although a portion of the District is within unincorporated San Bernardino County currently, the District does not provide water service to that area and therefore did not consult with San Bernardino County on land use data as part of this UWMP update.

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CHAPTER 3 SYSTEM DESCRIPTION

3.1 GENERAL DESCRIPTION

RCSD was organized on November 24, 1952 in accordance with the State of California Community Services District Law (Government Code Section 60000 et seq) for the purpose of providing certain public services including domestic water service. RCSD is California's first community services district (CSD). The District is empowered to manage water resources and to construct, operate, maintain, repair, and replace water system facilities as needed to provide water service in compliance with applicable standards and regulations. The District routinely constructs, maintains, and replaces facilities as necessary to maintain adequate, reliable, and safe water service to its customers.

The District is a public entity and governed by a five-member Board of Directors elected at-large. Each member resides within the District and is elected to a four-year term. The role of the Board of Directors is to provide oversight and establish the governing policies of the District. The District's General Manager oversees the day-to-day operations. The Board of Directors conduct regular Board meetings on the first and third Thursday of every month at 4:00 pm at the District Office.

3.2 SERVICE AREA BOUNDARY

The RCSD boundary encompasses an area of approximately 5,167 acres that are mostly within the City of Jurupa Valley in northwest Riverside County. The District is bounded by San Bernardino County to the north, the Jurupa Mountains and Pedley Hills to the southwest, the City of Jurupa Valley to the west, the Santa Ana River to the south and the City of Riverside to the east. Refer to **Figure 3-1 – Vicinity Map** (all figures are located at the end of each chapter).

RCSD provides water service to approximately 4,907 acres. Approximately 329 acres of the District is not served water by RCSD, as shown in **Figure 3-2 – Water Service Area**. West Valley Water District (WVWD or West Valley) serves water to approximately 206 acres within the City of Jurupa Valley and approximately 123 acres of unincorporated San Bernardino County that are technically within the RCSD boundary. Because this area in the upper northeast corner of the District is served by another supplier, which has been doing so for

some time and the area is slated for detachment from the District in the very near future, this 329-acre area is considered not-a-part of the District for purposes of the UWMP.

3.2.1 Annexations

In 2020, RCSD annexed the area of the future Agua Mansa Commerce Park Specific Plan for the purpose of providing water service in the future. This added approximately 291 acres of the former Riverside Cement Plant which received water from a private, onsite well. The specific plan will include a 4.4 million square foot logistics center with 70 acres of open space. Otherwise, there have been no other changes to the District's service area boundary since the 2015 UWMP.

The District is actively working on several annexations to add land and remove land from its service area in the future for the purposes of (1) incorporating properties that have been served water by the District for some time, but are technically outside the service area; (2) detaching properties from the District service area that are served by other water suppliers; (3) incorporating property that is owned by the District but is outside the service area; (4) incorporating property that is within a District pressure zone but outside of the current service area; and (5) incorporating properties to be served by the District in the future as a result of new development applications. These efforts will make the service area more contiguous and remedy some longstanding inconsistencies. The neighboring water suppliers are shown in **Figure 3-3 – Surrounding Water Suppliers.**

3.2.2 Potable Water System and Pressure Zones

All water delivered by the District is produced from groundwater wells and all groundwater is treated prior to distribution. The District currently has six active potable wells (i.e., Wells 1A, 2, 4, 6, and 8 and 18) with a combined maximum pumping capacity of approximately 8,850 gpm. In CY 2020, only wells 1A, 2, 6, and 8 were used, with Well 8 providing the majority of total potable production (53%), followed by Well 1A (27%), Well 2 (19%), and Well 6 (1%). Well 18 is currently being repaired and Well 4 was put back into service in 2021 following improvements to the treatment system. All wells are located within the RCSD boundary and draw from the Riverside South Groundwater Basin. Water from Well 6 is treated at the District's Anita B. Smith (Smith) Nitrate Removal Facility to reduce the concentration of nitrate

before it enters the distribution system. Water from the other wells is treated at the District's Leland J. Thompson (Thompson) Water Treatment Plant. The water is then blended with water from Well 2 before it enters the distribution system. Prior to blending, water from Well 2 is currently being treated for removal of 1,2,3-trichloropropane (1,2,3-TCP). A third water treatment facility, the LaVerne J. Mahnke (Mahnke) Manganese Removal Facility, is currently not used. The District also operates three booster pumping plants (i.e., Goldenwest, Mission, and Skyloft), four active water storage reservoirs and a fifth not in service (i.e., Atkinson, Hunter No. 1, Hunter No. 2, Watson, and Perrone) with a combined capacity of 6.4 million gallons (MG), and approximately 70 miles of potable water pipelines.

RCSD is currently completing projects to add treatment systems to the active wells to remove perfluorooctanic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) that are in the PFAS family of chemicals using a combination of ion-exchange (IX) at Wells 1A, 8, and 18 and granulated activated carbon (GAC) at Wells 2, 4 and 6 (DM 2021-10).

RCSD received a grant in March 2021 from the California Governor’s Office of Emergency Services (CalOES) “Community Power Resiliency Program” to offset most of the costs for fixed generators at Well 1A, Well 2, and Mission Booster Station. The generators will help mitigate the effect of power disruptions and have been placed where they would be most beneficial for increased system reliability (DM 2021-17).

The District’s potable water system contains two large and one small water pressure zones (PZ); Atkinson PZ, Hunter PZ, and Ridgeline PZ, respectively. The Ridgeline PZ is served by the Skyloft Booster Pumping Plant, which includes a hydropneumatic system to serve elevations above the upper limit of the Hunter PZ. Most of the water delivered by the District is used within the Atkinson PZ. The District is currently updating its *2015 Water Master Plan*, which is expected to be completed by 2022 and will provide detailed information on the District’s water distribution facilities.

3.2.3 Non-Potable Water System

The District has six non-potable wells (i.e., Well Nos. 3, 7, 11, 14, and 19/20). In CY 2020, the District operated four non-potable wells (i.e., Wells 3, 11, and 19/20) with a combined pumping capacity of 1,200 gpm. Well 3 supplies hydrants with non-potable construction water, Well 11

supplies the Jurupa Hills Golf Course, and Well 19/20 supplies non-potable water for irrigating street median landscaping along Mission Boulevard as well as hydrants and landscaping at an animal hospital. The District also maintains nominal lengths of non-potable pipelines that are associated with each non-potable well. In CY 2020, Well 11 provided 89% of non-potable water supplies with the remainder provided by Well 19 and Well 3. Wells 7 and 14 can be available for non-potable use with a combined pumping capacity of 700 gpm.

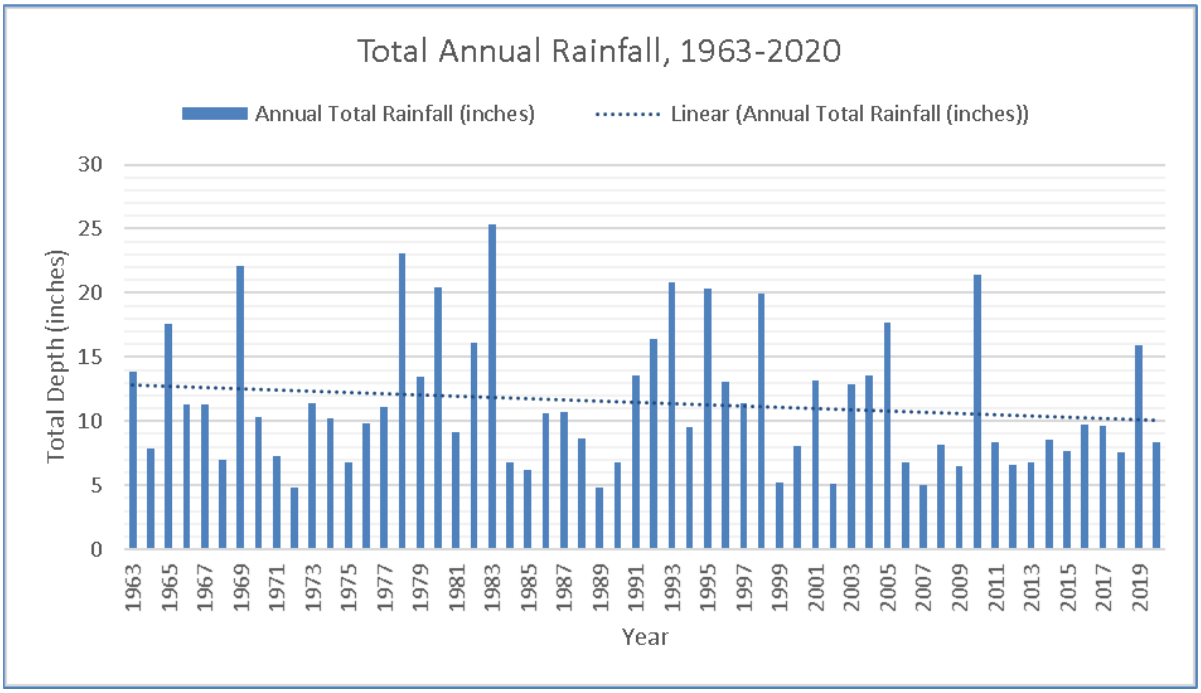
3.3 SERVICE AREA CLIMATE

Like much of inland Southern California, climate in the District's service area is characteristically Mediterranean with short, mild winters and hot, dry summers.

3.3.1 Rainfall

Precipitation in the District occurs between fall and spring, with the majority occurring in winter months. Based on 57 years of data, the District receives an annual average of 11.4 inches (RCFC(a)). Yearly rainfall data for the District from 1963 through 2020 is shown in **Chart 3-1**, which was obtained from the Riverside County Flood Control and Water Conservation District (RCFC) Station No. 178 ("Riverside North"). This station is located at their district headquarters approximately 2 miles east of RCSD offices.

Chart 3-1: Total Annual Rainfall 1963-2020 (inches) at Riverside Stn. 178 (Source: RCFC(a))

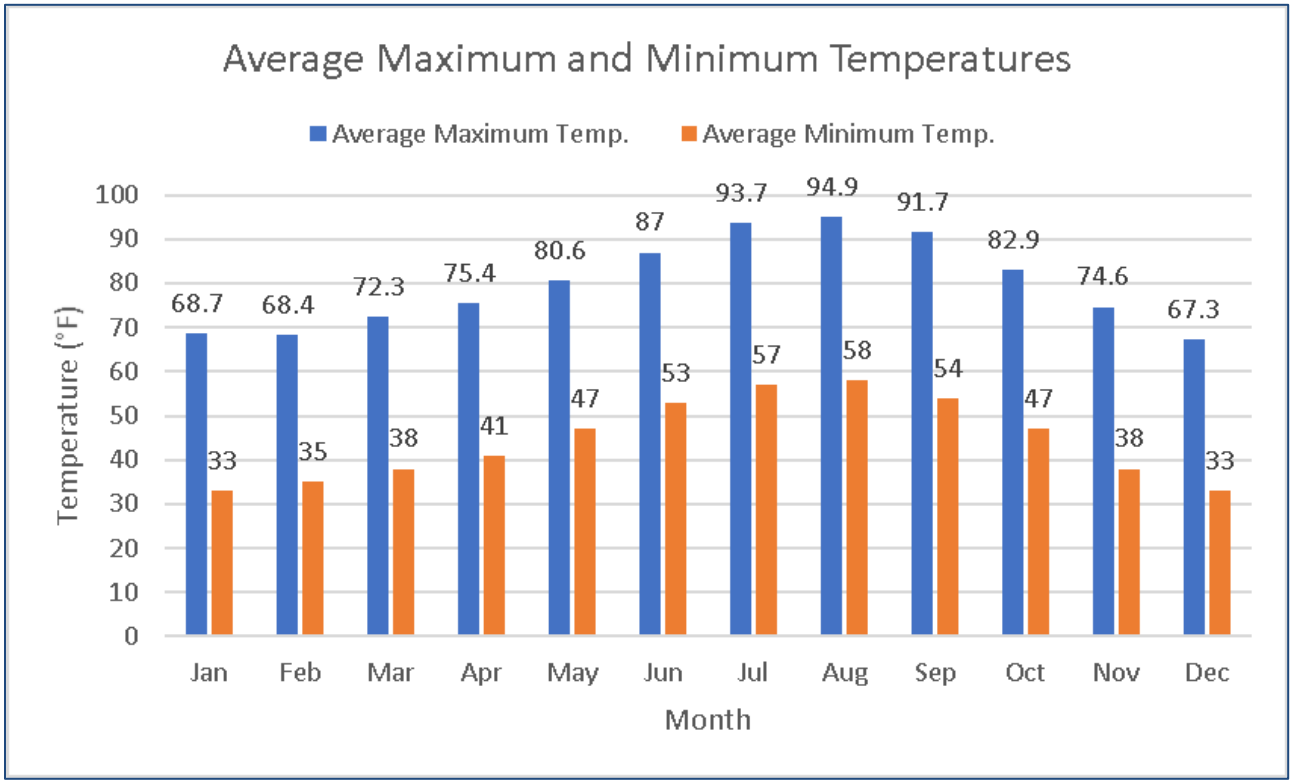


As shown in Chart 3-1, the maximum recorded rainfall was 25.3 inches in 1983 and the least was 4.8 inches in 1972. The linear trendline shows a slight decrease in total annual rainfall over the time period.

3.3.2 Temperature

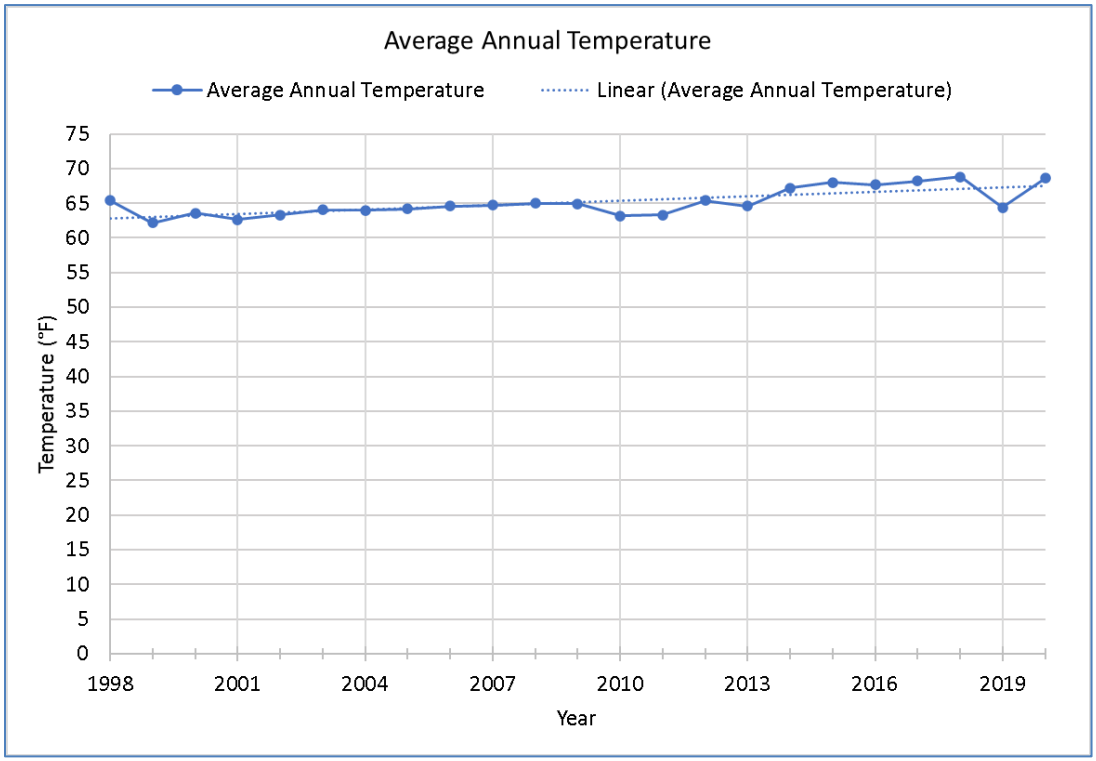
Like most of inland Southern California, temperatures in the RCSD service area are typically mild, with cool winters and hot summers. Maximum temperatures occur in summer months, with a maximum average of approximately 95ºF in August based on the last 22 years of data, as shown in **Chart 3-2.** Minimum temperatures occur in winter months with average minimums at 33°F in December and January. The temperature data shown here was recorded at the Riverside Airport located approximately five miles south of RCSD offices.

Chart 3-2: Monthly Average Maximum and Minimum Temperatures, 1998-2020, at Riverside Airport (Source: AgACIS)



Average annual temperatures for the service area over the last 22 years are shown in **Chart 3-3**. The trendline suggests a gradual increase in the average annual temperature.

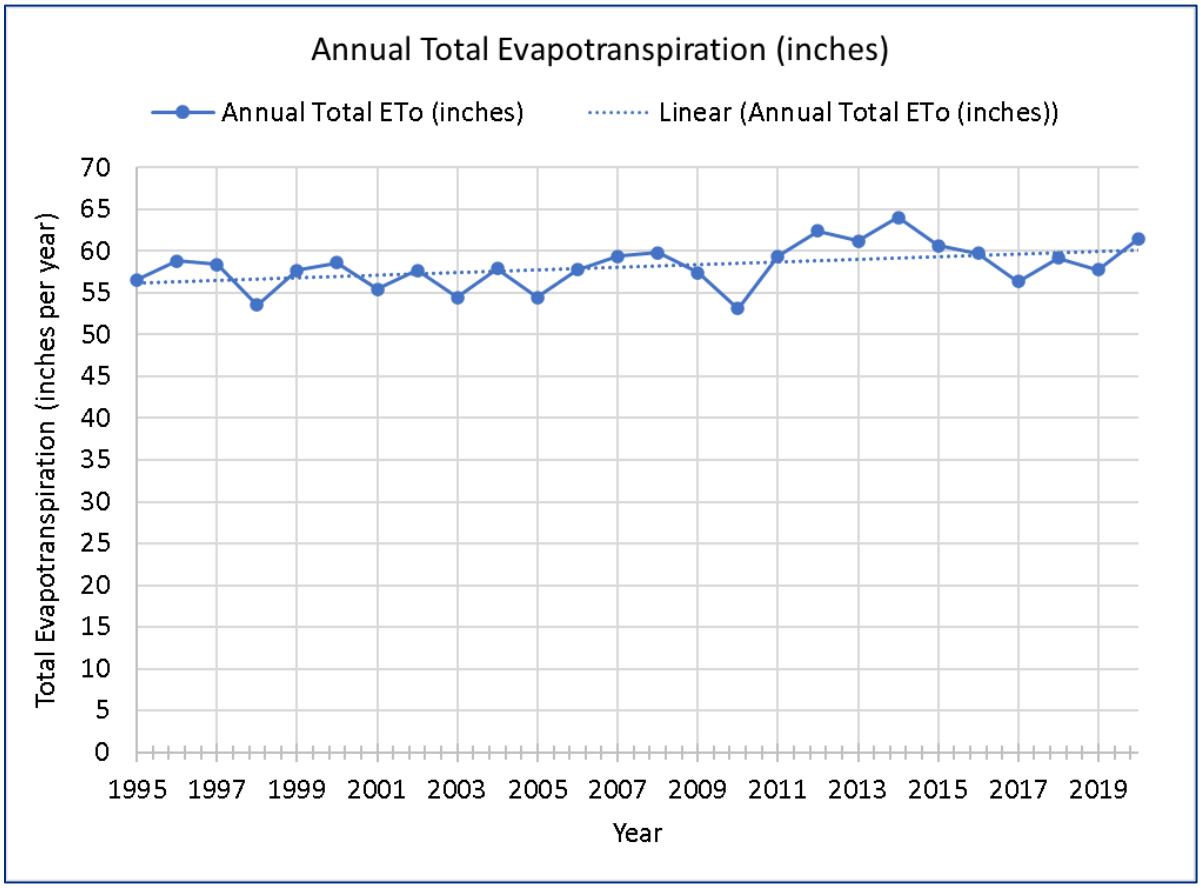
Chart 3-3: Annual Average Temperature, 1998-2020, at Riverside Airport (Source: AgACIS)



3.3.3 Evapotranspiration

Evapotranspiration (ET) is the combination of processes when water is lost from the soil surface by evaporation and lost from plants by transpiration. The evaporation power of the atmosphere is expressed by the reference crop evapotranspiration (ET_o) in units of depth of water over time (e.g., inches/day). The greater the ET rate, the more water needed to satisfy plant demands. Total annual ET_o values from 1995 to 2020 measured in proximity to the District service area are shown in **Chart 3-4**.

Chart 3-4: Total Annual Evapotranspiration (inches), 1995-2020 (Source: Valley Soil)



The annual average ET_o rate for this time period is 58.2 inches/year. The highest total annual ET_o was measured in 2014 at 64.0 inches and the lowest total ET_o was in 2010 at 53.1 inches. The linear trendline suggests an increase in ET_o over the time period.

3.3.4 Summary of Potential Climate Changes

Several sections of the Water Code have been revised since the 2015 UWMP cycle to require that water suppliers account for the impacts of climate change on water supplies and supply reliability in their 2020 UWMPs. Although the Water Code does not specify the technical nor general methods for how to consider climate change in UWMPs, DWR provides guidance on common approaches that can be used. Detailed discussions of the potential effects of climate change on District water demands, water supplies, and water reliability are provided herein Chapter 4 – Water Use Characterization, Chapter 6 – Water Supply Characterization, and

Chapter 7 – Water Service Reliability Assessment. The following is a summary of the anticipated climate changes or scenarios within the District.

This discussion is guided by the "Urban Water Management Plan Guidebook 2020" and relies, in part, on the tools and resources available on the Cal-Adapt Website (https://cal-adapt.org/), which synthesizes volumes of downscaled climate change projections and climate impact research from California's scientific community. The default visualizations in the Cal-Adapt projections shown herein are based on the average values from a variety of models and are projections of future climate. They are not weather predictions and should not be treated as such.[1]

Climate projections cannot tell us what will happen on a given date in the future. But they can tell us what to expect from our future climate in general and how much more often (or less often) extreme events such as heat waves and heavy rainfall are likely to occur in the future. However, they cannot predict when those events will actually occur.

The Cal-Adapt climate models presented here make predictions for the period of 2006 to 2100 and recreate the historical climate for the period 1950 to 2005. Two future climate projections using medium and high greenhouse gas and aerosol emissions scenarios are presented here. These scenarios are known as Representative Concentration Pathways (RCP). Each RCP represents a standardized set of assumptions of humanity's trajectory in the coming years. Cal-Adapt does not provide data for a "low" greenhouse gas emissions scenario.

The Medium Emissions Scenario (RCP 4.5) represents a mitigation scenario where global carbon dioxide (CO_2) emissions peak by 2040 and then decline. Statewide, temperature is projected to increase 2-4 Celsius (°C) for this scenario by the end of this century.

The High Emissions Scenario (RCP 8.5) represents a scenario where CO_2 emissions continue to rise throughout the 21st century. Statewide, temperature is projected to 4-7 °C by the end of this century.

[1] Weather is the behavior of the atmosphere over short periods, such as days and weeks. Climate is the long-term behavior of the atmosphere, and it is almost always expressed in averages—for example, average annual temperature, average monthly rainfall, or average water equivalent of mountain snowpack at a given time of year. In other words, climate is the statistics of weather.

Cal-Adapt's "Local Climate Change Snapshot" tool provides the following climate projections for temperature, precipitation, and wildfire for the District's service area. The City of Jurupa Valley was selected as the representative location of the District's service area.

As discussed further in Chapter 4, Western Municipal Water District (WMWD or Western) conducted an analysis of climate change data as part of Western's 2020 UWMP and provided the results of which to its member agencies, including RCSD on April 22, 2021 (WMWD(a)). The source data were climate models gathered by DWR for water resources planning. Because Western's analysis does not provide a summary of anticipated climate changes for the service area, the following projections of temperature and precipitation trends from Cal-Adapt for the City of Jurupa Valley are included herein for reference. Said trends from Cal-Adapt of increasing temperatures and decreasing rainfall do not conflict with Western's analysis.

Cal-Adapt Temperature Projections

Overall temperatures are projected to rise in California during the 21st century. While the entire state will experience temperature increases, the local impacts will vary greatly. Four separate climate indicators are reported by Cal-Adapt for temperature changes: 1) Annual Average Maximum Temperature, 2) Annual Average Minimum Temperature, 3) Extreme Heat Days, and 4) Warm Nights.

Annual Average Maximum Temperature reports the average of all the hottest daily temperatures in a year. The most likely outcome and range of future projections of Annual Average Maximum Temperature in the Jurupa Valley area are shown in **Chart 3-5**.

Chart 3-5– Cal-Adapt Projections for Annual Average Maximum Temperature (°F)
(Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley)

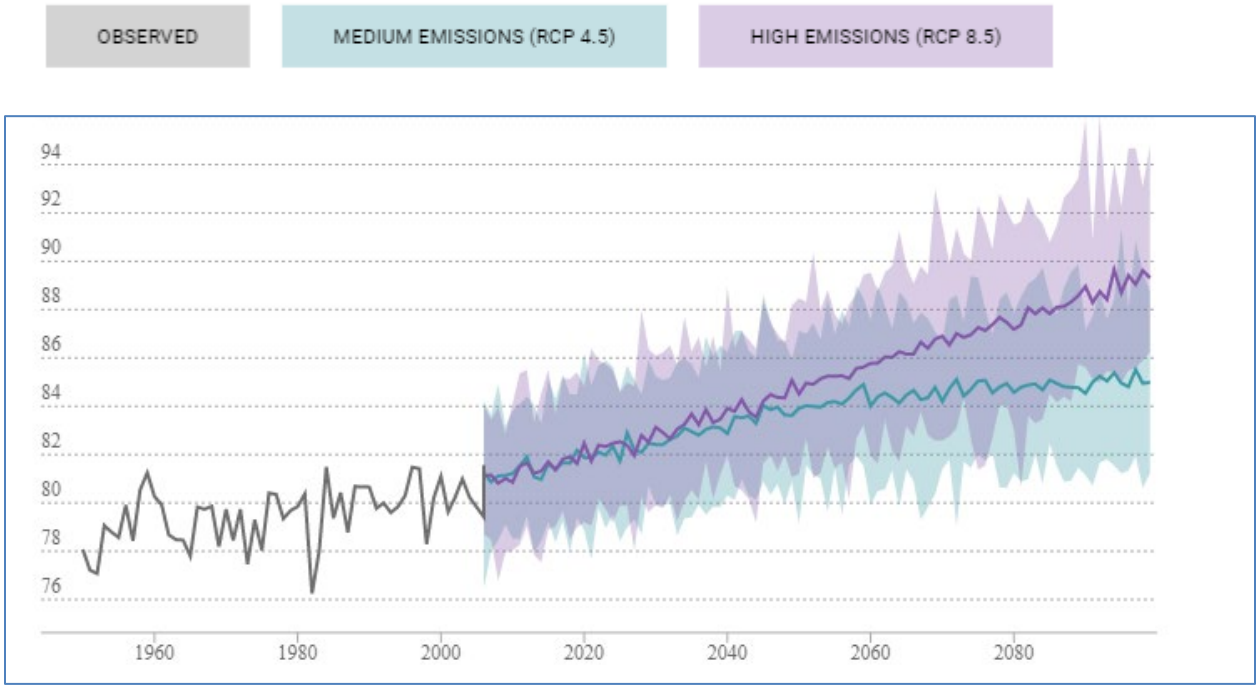


Table 3A below provides a summary of Cal-Adapt projections for Annual Average Maximum Temperature for baseline (1961-1990) and mid-century (2035-2064) time periods in the Jurupa Valley area.

Table 3A - Cal-Adapt Projections for Annual Average Maximum Temperature

Time Period	Change from Baseline	30-year Average	30-year Range
Baseline (1961-1990)	--	79.3 °F	78.9 - 79.7 °F
Mid-century (2035-2064)			
RCP 4.5	+4.5 °F	83.8 °F	81.6 - 86.3 °F
RCP 8.5	+5.4 °F	84.7 °F	82.1 - 87.0 °F

Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley.
RCP: representative concentration pathway; 4.5: medium emissions scenario; 8.5: high emissions scenario.

Annual Average Minimum Temperature reports the average of all the coldest daily temperatures in a year. Shown on **Chart 3-6** is the most likely outcome and range of future projections of Annual Average Minimum Temperature in the Jurupa Valley area.

Chart 3-6 – Cal-Adapt Projections for Annual Average Minimum Temperature (°F)
(Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley)

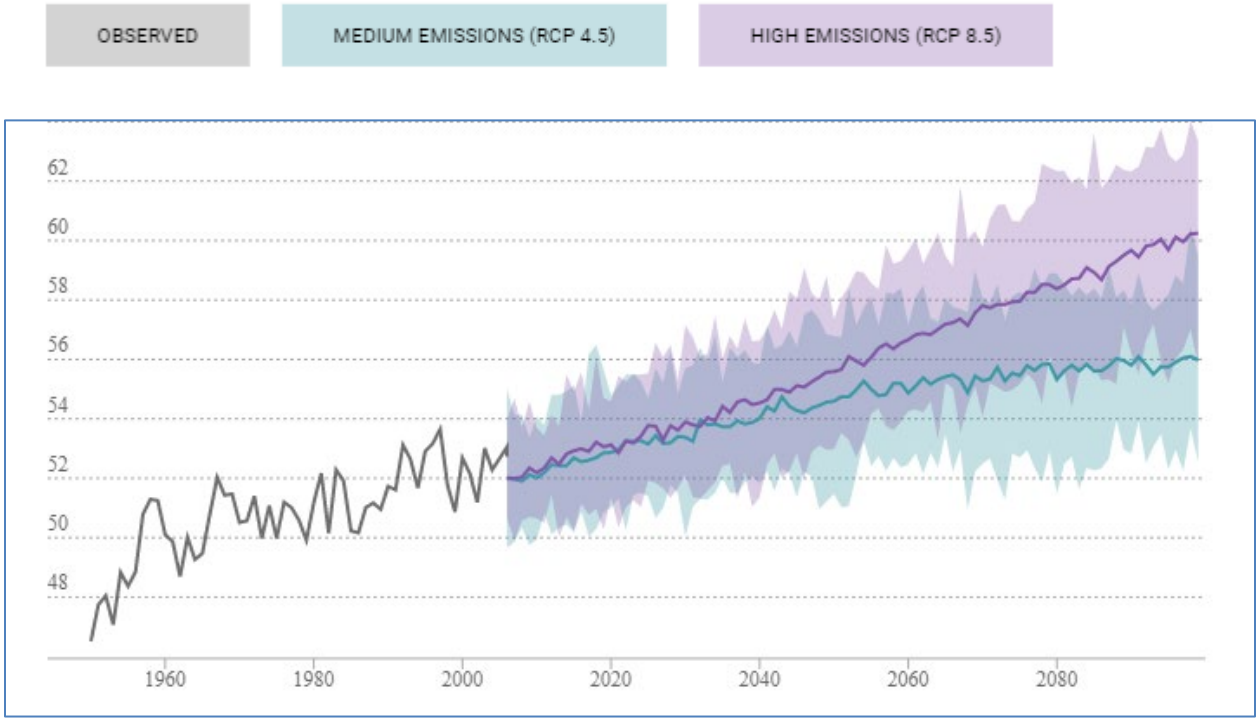


Table 3B below provides a summary of Cal-Adapt projections for Annual Average Minimum Temperature for baseline and mid-century time periods in the Jurupa Valley area.

Table 3B - Cal-Adapt Projections for Annual Average Minimum Temperature

Time Period	Change from Baseline	30-year Average	30-year Range
Baseline (1961-1990)	--	50.7 °F	50.4 – 50.9 °F
Mid-century (2035-2064)			
RCP 4.5	+3.9 °F	54.6 °F	52.9 – 56.0 °F
RCP 8.5	+4.9 °F	55.6 °F	53.9 – 57.2 °F

Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley. RCP: representative concentration pathway; 4.5: medium emissions scenario; 8.5: high emissions scenario.

Extreme Heat Days reports the number of days in a year when daily maximum temperature is above a threshold temperature of 104.1 °F. Shown in **Chart 3-7** is the most likely outcome and range of future projections of Extreme Heat Days in the Jurupa Valley area.[2]

Chart 3-7 – Cal-Adapt Projections for Number of Extreme Heat Days
(Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley)

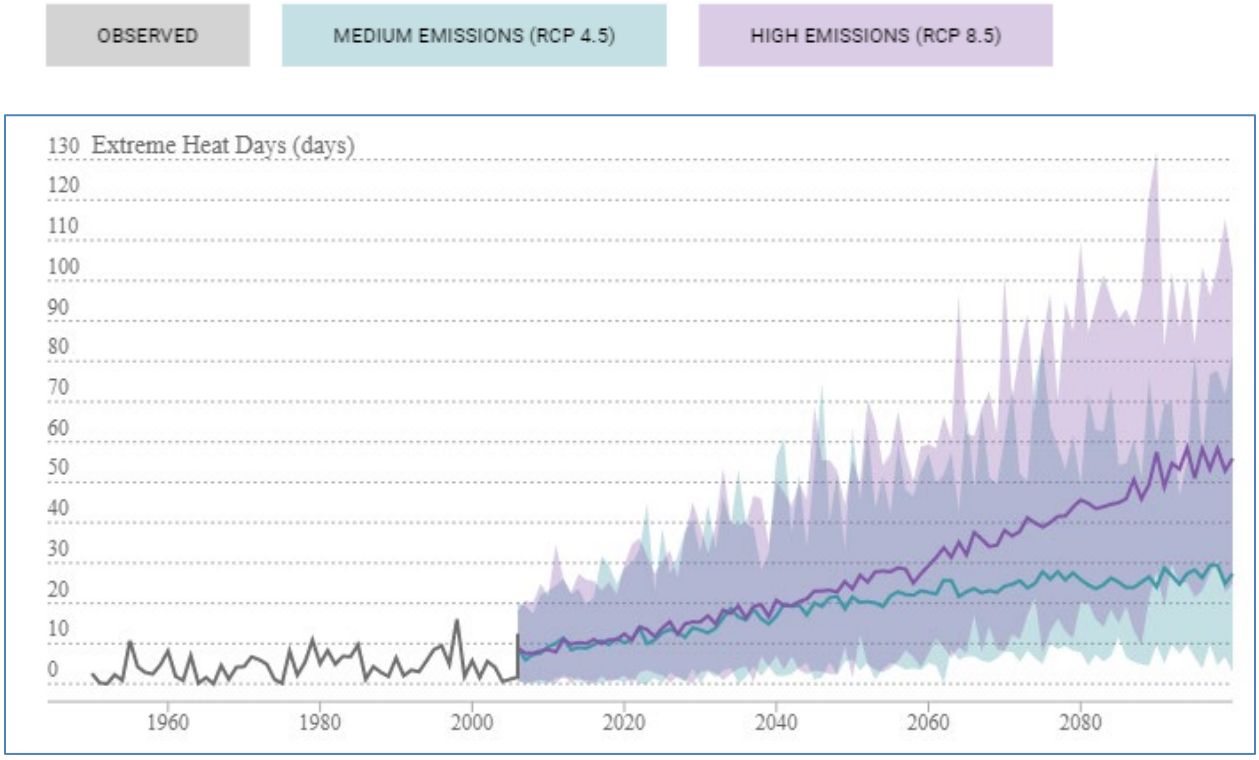


Table 3C below provides a summary of Cal-Adapt projections for Extreme Heat Days for baseline and mid-century time periods in the Jurupa Valley area.

[2] Note the threshold temperature used in Cal-Adapt is location specific. It is defined as the 98th percentile value of historical daily maximum/minimum temperatures (from 1961–1990, between April and October) observed at a location.

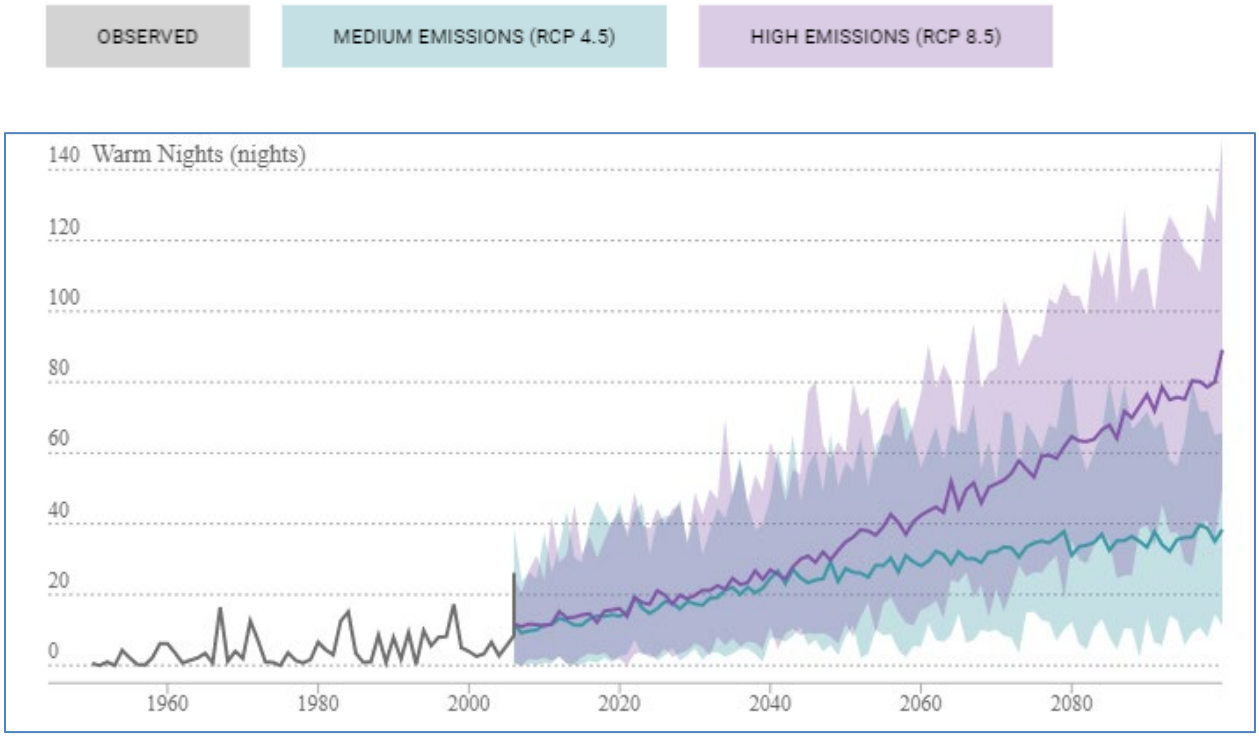
Table 3C – Cal-Adapt Projections for Number of Extreme Heat Days

Time Period	Change from Baseline	30-year Average	30-year Range
Baseline (1961-1990)	--	4 days	2 – 5 days
Mid-century (2035-2064)			
RCP 4.5	+16 days	20 days	13 – 45 days
RCP 8.5	+21 days	25 days	14 – 60 days

Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley
RCP: representative concentration pathway; 4.5: medium emissions scenario; 8.5: high emissions scenario.

Warm Nights reports the number of days in a year when daily minimum temperature is above a threshold temperature of 68.7 °F shown on **Chart 3-8** is the most likely outcome and range of future projections of Warm Nights in the Jurupa Valley area.[3]

Chart 3-8– Cal-Adapt Projections for Number of Warm Nights
(Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley)



[3] Note the threshold temperature used in Cal-Adapt is location specific. It is defined as the 98th percentile value of recorded daily maximum/minimum temperatures (from 1961–1990, between April and October) observed at a location.

Table 3D below provides a summary of Cal-Adapt projections for Warm Nights for baseline (1961-1990) and mid-century (2035-2064) time periods in the Jurupa Valley area.

Table 3D – Cal-Adapt Projections for Number of Warm Nights

Time Period	Change from Baseline	30-year Average	30-year Range
Baseline (1961-1990)	--	5 days	1 – 11 days
Mid-century (2035-2064)			
RCP 4.5	+21 days	26 days	14 – 46 days
RCP 8.5	+29 days	34 days	20 – 55 days

Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley
RCP: representative concentration pathway; 4.5: medium emissions scenario; 8.5: high emissions scenario.

Cal-Adapt Precipitation Projections

California's climate varies between wet and dry years. Research suggests that for much of the state, wet years will become wetter, and the dry years will become drier. Dry years are also likely to be followed by dry years, thus increasing the risk of drought. While California does not see the average annual precipitation changing significantly in the next 50-75 years, precipitation will likely be delivered in more intense storms and within a shorter wet season.

Three separate climate indicators are reported for precipitation changes: 1) Maximum 1-day Precipitation, 2) Maximum Length of Dry Spell, and 3) Annual Precipitation.

The Maximum 1-Day Precipitation amount for each year is the greatest amount of daily rain or snow (over a 24-hour period) for each year. **Chart 3-9** shows the most likely outcome and range of future projections of Maximum 1-day Precipitation in the Jurupa Valley area.

Chart 3-9 – Cal-Adapt Projections for Maximum 1-day Precipitation
(Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley)

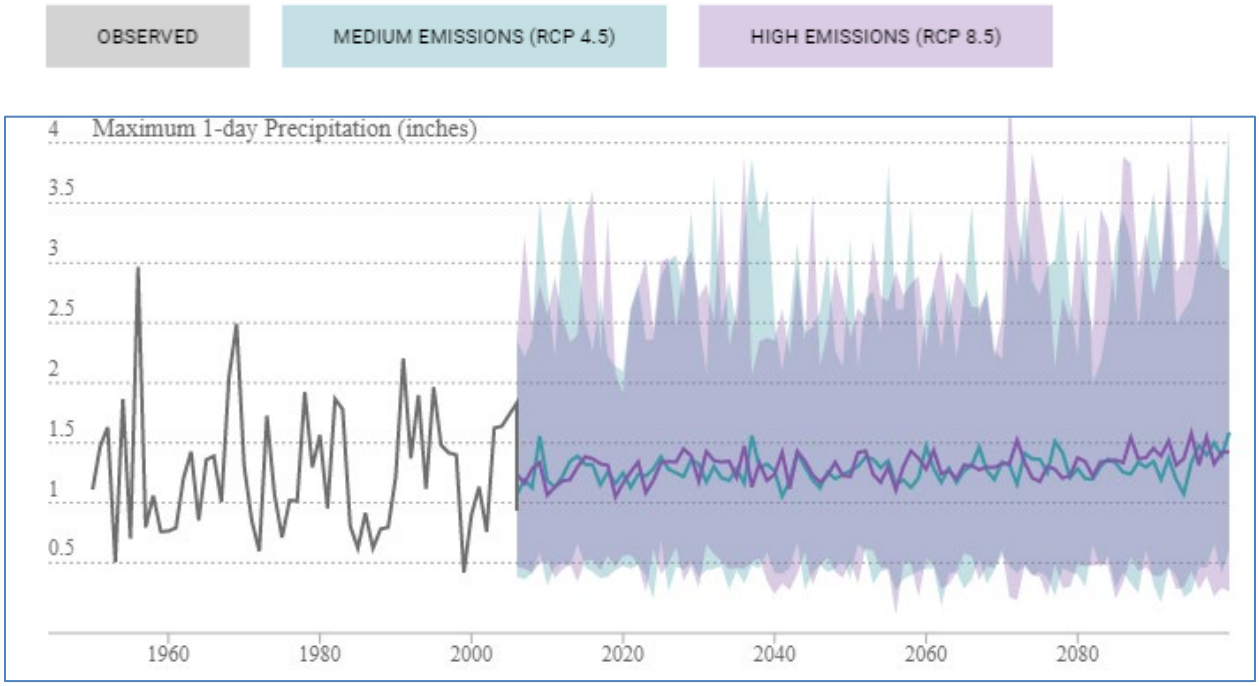


Table 3E, below provides a summary of Cal-Adapt's projections for Maximum 1-day Precipitation for baseline (1961-1990) and mid-century (2035-2064) time periods for the Jurupa Valley Area.

Table 3E– Cal-Adapt Projections for Maximum 1-Day Precipitation

Time Period	Change from Baseline	30-year Average	30-year Range
Baseline (1961-1990)	--	1.205 inches	1.014 – 1.359 inches
Mid-century (2035-2064)			
RCP 4.5	+0.058 inches	1.263 inches	1.038 – 1.426 inches
RCP 8.5	+0.079 inches	1.284 inches	1.063 – 1.516 inches

Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley
RCP: representative concentration pathway; 4.5: medium emissions scenario; 8.5: high emissions scenario.

Maximum Length of Dry Spell is the maximum length of dry spell for each year. In other words, the maximum number of consecutive days with precipitation less than one millimeter for each

year. **Chart 3-10** shows the most likely outcome and range of future projections of Maximum Length of Dry Spell in the Jurupa Valley area.

Chart 3-10 – Cal-Adapt Projections for Maximum Length of Dry Spell
(Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley)

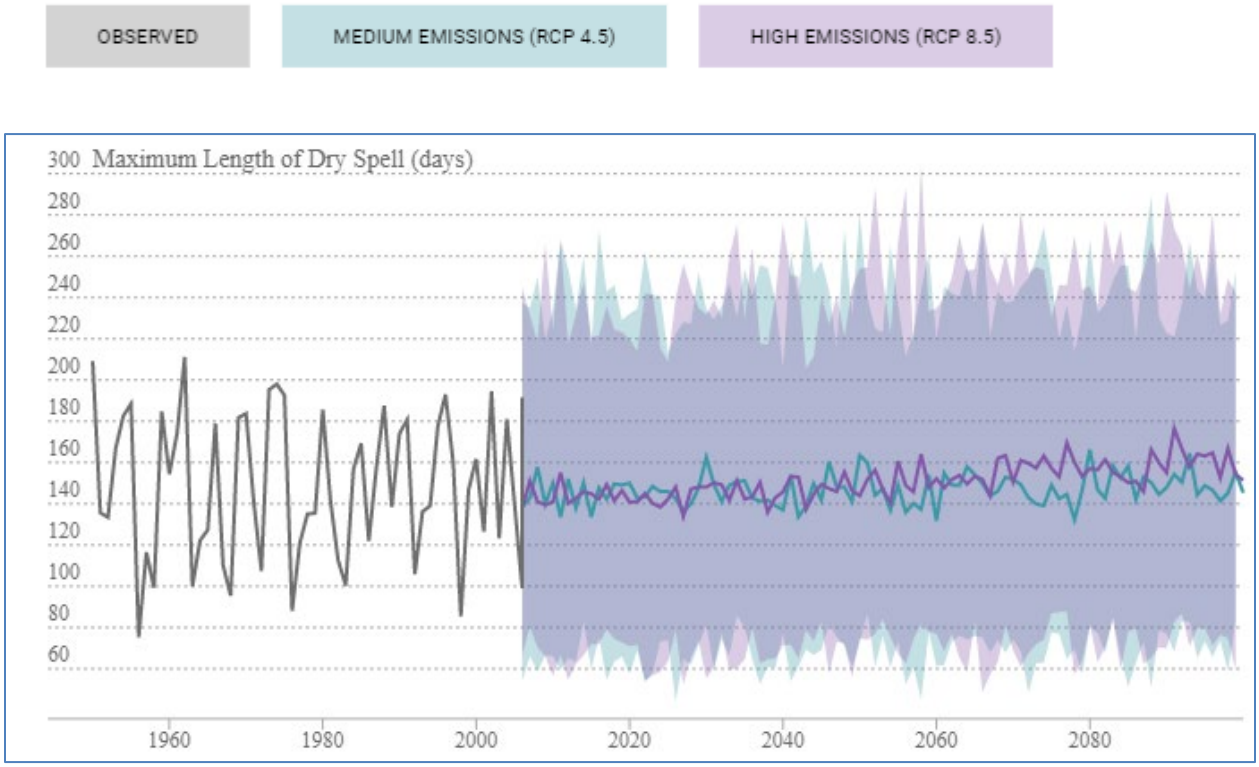


Table 3F, below provides a summary of Cal-Adapt projections for Maximum Length of Dry Spell for baseline and mid-century time periods in the Jurupa Valley area.

Table 3F – Cal-Adapt Projections for Maximum Length of Dry Spell

Time Period	Change from Baseline	30-year Average	30-year Range
Baseline (1961-1990)	--	138 days	123 – 156 days
Mid-century (2035-2064)			
RCP 4.5	+8 days	146 days	125 – 171 days
RCP 8.5	+10 days	148 days	117 – 181 days

Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley
RCP: representative concentration pathway; 4.5: medium emissions scenario; 8.5: high emissions scenario.

Annual Precipitation is the total precipitation projected for a year. **Chart 3-11** shows the most likely outcome and range of future projections of Annual Precipitation in the Jurupa Valley area.

Chart 3-11- Cal-Adapt Projections for Annual Precipitation
(Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley)

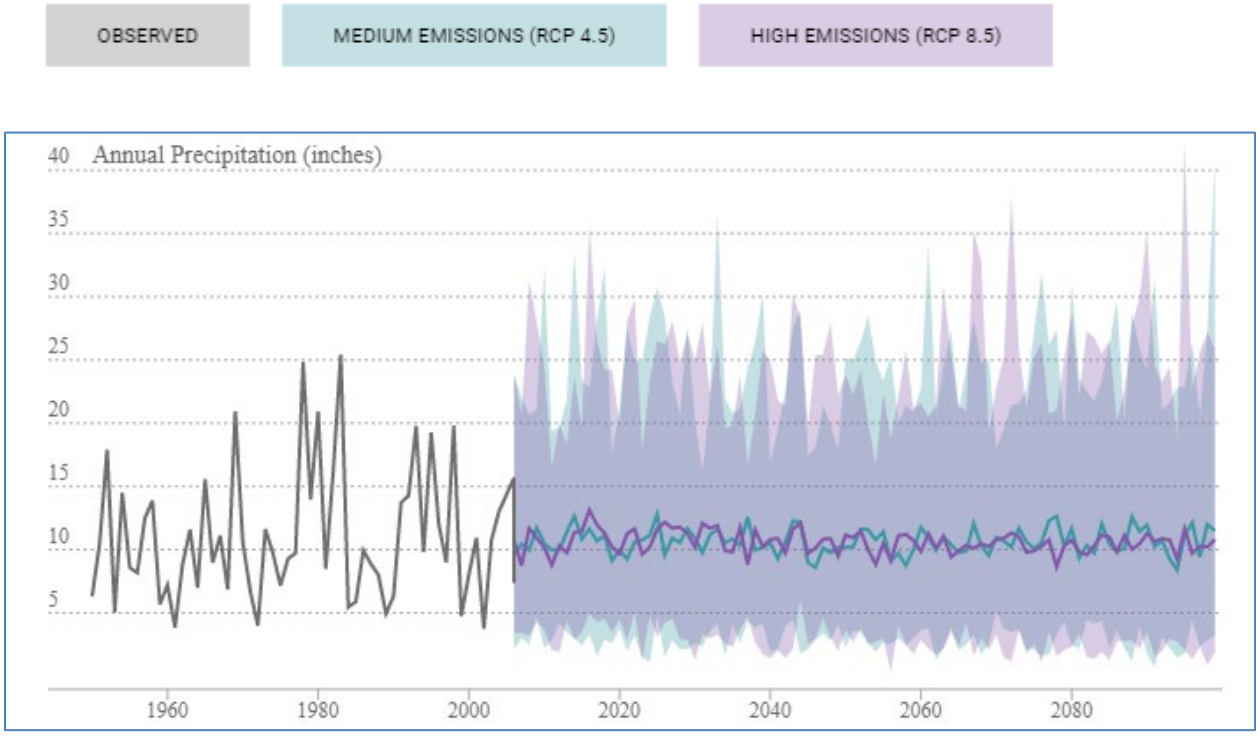


Table 3G, below provides a summary of Cal-Adapt's projections for Annual Precipitation for baseline (1961-1990) and mid-century (2035-2064) time periods in the Jurupa Valley area.

Table 3G - Cal-Adapt Projections for Annual Precipitation

Time Period	Change from Baseline	30-year Average	30-year Range
Baseline (1961-1990)	--	10.9 inches	9.4 – 12.0 inches
Mid-century (2035-2064)			
RCP 4.5	-0.4 inches	10.5 inches	8.1 – 13.8 inches
RCP 8.5	-0.4 inches	10.5 inches	7.9 – 14.2 inches

Source: Cal-Adapt, Local Climate Snapshot for Jurupa Valley
RCP: representative concentration pathway; 4.5: medium emissions scenario; 8.5: high emissions scenario.

Cal-Adapt Wildfire Projections

The frequency, severity, and impacts of wildfire are sensitive to climate change as well as many other factors, including development patterns, temperature increases, wind patterns, precipitation change, and pest infestations. Therefore, it is more difficult to predict exactly where and how fires will burn. Instead, climate models estimate increased risk of wildfires.

The Cal-Adapt information presented here (Annual Average Area Burned) can help inform at a high level if wildfire activity is likely to increase. However, this information is not complete - many regions across the state have no projections (such as regions outside combined fire state and federal protection responsibility areas), and more detailed analyses and projections are needed for local decision-making. These projections are most robust for the Sierra Nevada given model inputs. However, as we have seen in recent years, much of California can expect an increased risk of wildfire, with a wildfire season that starts earlier, runs longer, and features more extreme fire events.

The Cal-Adapt average of the area projected to be at risk to burning in a year for the modeled baseline (1961-1990) time period for the City of Jurupa Valley is approximately 42 acres. By the mid-century (2035-2064) time period, the annual average risk of wildfire is projected to decrease to 8.5 acres in the City of Jurupa Valley. The areas within and near the District service area that are most at risk of wildfire are the Jurupa Mountains and Pedley Hills. Also, brush fires have taken place along the Santa Ana Riverbed which borders the District to the southeast (JVGP, p. 8-16).

Uncertainty of Cal-Adapt Projections

Climate projections provided by Cal-Adapt are approximations of future climate, but as with any statement about the future, there is no way to be certain they are accurate. One source of uncertainty in future climate projections is human greenhouse gas emissions. Projected climate data may not prove to be accurate if the actual emissions pathway differs from the scenarios used to make the projections.

Another source of uncertainty in climate projections is the fact that different climate models—the tools used to simulate the climate system and produce future climate data—may produce different outcomes. There are more than 30 global climate models developed by climate

modeling centers around the world, and they have different ways of representing aspects of the climate system. In addition, some aspects of the climate system are less well understood than others. Climate scientists are constantly working to improve the theories of the climate system and its representation in climate models. In the meantime, one way to account for model differences is to look at projections from as many different models as possible to get a range of possible outcomes. An average of the values can be taken across the different models, and this average value is a more likely outcome than the value from any single model.

It is important to note that here the term "uncertainty" is being used in the scientific sense, to acknowledge that there is a range in possible future outcomes. That climate change is occurring and is caused by human activity is the consensus of the overwhelming majority of scientists engaged with the issue. What is less certain is the extent to which the climate will change in the future, and precisely how the changes will affect natural and human systems.

3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS

3.4.1 Service Area Population

The District currently serves a population of approximately 36,827 people, which does not include the portion served by West Valley Water District. The current District population was generated using DWR's online Population Tool, which was developed specifically for UWMPs and updated for the 2020 cycle. The Population Tool calculates current and past populations using U.S. Census year data (1990, 2000, 2010) with the total number of meters from the RCSD Annual Reports to the SWRCB to calculate a person-per-connection ratio.[4] To calculate the 2020 population, the total number of connections is entered (6,335 meters) and the Population Tool multiplies that by a calculated person-per-connection ratio of 5.18. Results of the Population Tool are provided in **Appendix E**.

The current and future projected population of the District are shown in **Submittal Table 3-1**.

[4] U.S. Census data from the 2020 Census was not available in time for use in the DWR Population Tool.

Submittal Table 3-1 Retail: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045*(opt)*
	36,827	39,478	48,855	52,372	52,900	52,900
NOTES: 2020 population from DWR Population Tool. Annual growth rate of 1.4% (from U.S. Census Bureau). In 2030, 6,535 persons added due to assumed completion of the Rio Vista Specific Plan (1,307 DU and 5 people/DU). With Rio Vista project, buildout estimated by 2036 at 52,900 persons if mid-Range density assumed.						

The population projections from 2025-2045 that are shown in Submittal Table 3-1 were not generated by the Population Tool; instead, the projected populations were calculated using the City's current land use plan, U.S. Census Bureau average annual growth rate for the City from 2009-2019, and persons per dwelling unit also from U.S. Census Bureau data.

U.S. Census Bureau data from 2009 to 2019 suggests the annual population growth rate for the City of Jurupa Valley is 1.4% over that time period (USCB). U.S. Census Bureau 2015-2019 data estimates 4.21 persons per dwelling unit and the DWR Population Tool estimates 5.81 persons per dwelling unit for 2020. The average of the two sources is 5 persons per dwelling unit, which is used for the population projection herein.

The Rio Vista Specific Plan is a significant housing project that may be developed and incorporated into the District's service area by 2030 (see Section 3.5 below for more details). The project proposes 1,307 dwelling units. Assuming 5 persons per dwelling unit, this plan assumes 6,535 persons are added to the District population by 2030.

The buildout population for the District is calculated assuming full buildout of the City of Jurupa Valley's current General Plan Land Use Map (updated March 2021) and the District's current water service area boundary. See buildout calculations in **Appendix F**. The City's residential land use types have a minimum and maximum allowable density and typically, development occurs at the mid-point between the minimum and the maximum. Therefore, this plan estimates mid-range density and maximum density buildout scenarios. The mid-range density population is estimated at 52,900 persons and the maximum density buildout population is estimated at 68,100 persons taking into account additional persons from accessory dwelling units (ADUs) (see Section 3.4.2) (Appendix F).

Using the calculated growth rate of 1.4%, 5 persons per dwelling unit, the additional estimated population from the Rio Vista project, a mid-range buildout population of 52,900 persons, and a starting 2020 population of 36,827 persons, the portion of Jurupa Valley that is within RCSD's service area may achieve mid-range density buildout of 52,900 persons by year 2036 (i.e., approximately 16,073 additional persons over 16 years).

3.4.2 Accessory Dwelling Units

Accessory dwelling units (ADUs) are also known as "granny flats," second units, or in-law units. They can be for one or more people and can be detached, attached, existing space converted into an independent living unit, or a Junior ADU contained entirely within an existing or proposed single-family residence. ADUs are being encouraged by the State to increase residential infill and help meet the increasing statewide demand for affordable housing. Because the ADU laws (Gov. Code 65852.2) change each year, readers should refer to the California Department of Housing and Community Development (www.hcd.ca.gov) for the latest changes to the law.

An increase in ADUs in existing residential areas may densify them more than what had been planned for previously by the District. Particularly in areas that are considered currently "built-out" with infrastructure that is already sized at "ultimate" design capacity, an increase in ADUs may trigger capital projects to upsize existing pipes or replace degrading infrastructure earlier than expected.

RCSD and WEBB met with the City of Jurupa Valley Planning Department staff for the purposes of this UWMP. As a result, the City of Jurupa Valley shared that between 2016 and 2020, they have received two building permit applications for attached ADUs within the District's boundary: one in 2019 and one in 2020. Both were applications to convert existing garage space (Personal Communication, A. Tam, 4/13/21).

The Jurupa Valley City Council adopted Ordinance No. 2020-18 on November 5, 2020 to amend the Zoning Ordinance pertaining to ADUs and junior ADUs. It is hard to gauge how the ADU laws will play out in the RCSD service area. Residential properties in Jurupa Valley tend to have the space needed for attached and detached ADUs. However, several census block

groups within Jurupa Valley have median household incomes that meet the threshold for "disadvantaged" and "severely disadvantaged" communities (see Section 3.4.4, below).

For the planning purposes of this UWMP, an estimate has been made assuming each dwelling unit has 5 persons and half of the residential properties where ADUs are allowed may develop an ADU and each ADU would have 2 persons, which results in a 20% population increase. Therefore, the potential future impact of ADU's in residential areas is accounted for in two ways: (1) the number of people per dwelling unit was increased by 20%, from 5.0 to 5.11, but only for those residential land uses with densities up to and including medium high density residential; (2) water demand projections in Chapter 4 are increased 20% for the same residential land uses. It is assumed ADUs are not feasible for high density residential to highest density residential land uses. The 20% increase in population for certain land use types is embedded in the population projections in Submittal Table 3-1.

The District plans to address ADUs in the future to ensure consistency with the State regulations, including when a separate connection is required and to correctly assess and collect appropriate fees.

3.4.3 Other Social, Economic, and Demographic Factors

The City of Jurupa Valley (City) encompasses approximately 45 square miles in western Riverside County. According to U.S. Census Bureau "QuickFacts" data, the City has a 2019 population estimate of 109,527 people and a 2019 median household income of $70,642 (USCB). According to the City's 2017 General Plan, Jurupa Valley has a large blue-collar population with most employees working in the transportation, warehousing, and retail trade and manufacturing industries (p. 11-3). The City is comprised of nine distinct communities; three of which are in the District (i.e., Rubidoux, Belltown, and Crestmore Heights). Rubidoux is the largest and most densely developed of the nine communities with a variety of land uses (*ibid,* p. 9-3); however, unemployment rates are higher in this area compared to county and state averages (*ibid,* p. 11-3). The Belltown area is largely suburban or small town with equestrian trails, while Crestmore Heights is mostly semi-rural and low density in character (*ibid,* p. 2-1).

Land use in the City is predominantly single-family residential consisting of a mix of medium- and low-density units, with concentrations in the older neighborhoods of low-cost rental housing (ibid, p. 5-40). The City strives to maintain a small-town feel and the equestrian lifestyle, while also incorporating a mix of retail commercial, office, and industrial uses. The City in general is currently experiencing growth in residential and industrial uses. The City has potential for significant growth and redevelopment in all urban land use types, especially historic town centers.

RCSD's service area consists mainly of single-family residential customers, but also includes some commercial, industrial, institutional, and landscape connections. The number of potable water meters from 2016 to 2020 are shown in **Table 3H.** Over this time period, the number of service connections for single-family residential have consistently accounted for 94% of all customer meters. Service connections for multi-family residential customers make up 6% of all meters, commercial/institutional meters are 0.3%, and industrial has been 0.03% of the total.

Table 3H - RCSD Metered Connections, 2016-2020

Customer Meter	2016	2017	2018	2019	2020
Single-Family Residential	6,115	6,165	6,265	5,548	5,558
Multi-Family Residential	385	385	385	385	385
Commercial /Institutional	20	20	20	384	389
Industrial	2	2	2		
Potable Hydrants	-	-	-	4	3
Non-Potable	3	3	3	13	10
Total Active Connections	**6,525**	**6,575**	**6,675**	**6,334**	**6,345**

Source: RCSD *Large Water System Annual Report to the Drinking Water Program [Section 116530 Health & Safety Code]* for years ending December 31, 2016-2020.

3.4.4 Disadvantaged Communities

U.S. Census data is gathered at three levels of precision: Census Designated Place (CDP), Census Tracts, and Census Block Groups. CDPs are at the broadest level for unincorporated areas. Census Tracts are made up of Block Groups. According to U.S. Census data collected from 2014 to 2018 by DWR's Disadvantaged Communities (DAC) Mapping Tool, some Community Tracts and Block Groups within the RCSD service area qualify as "disadvantaged"

and "severely disadvantaged" as shown in **Figure 3-4 – Disadvantaged Community by Census Block**.

California Code of Regulations Section 596.1(b)(2) defines a "disadvantaged community (DAC)" as: "A community with an annual median household income (MHI) that is less than 80 percent of the statewide annual MHI." The statewide MHI according to the Census American Community Survey (ACS) 2014-2018 dataset is $71,228; thus, 80 percent and 60 percent of that value represents the DAC and Severely DAC (SDAC) thresholds, respectively. Therefore, a community where the MHI is less than $56,982 meets the DAC threshold and a MHI less than $42,737 meets the SDAC threshold (ACS).

The DWR DAC Mapping Tool is an online reference to assist local agencies to evaluate DAC status, using the definition provided by Proposition 84 Guidelines. Having areas in its service area that qualify as a DAC opens the District to the possibility of applying for State grant funding to assist with the implementation, planning, and DAC involvement efforts through Proposition 1 (Water Quality, Supply, and Infrastructure Improvement Act of 2014), and potentially grant funding through Proposition 84, Chapter 2 (Integrated Regional Water Management). In the event RCSD proceeds with either grant application process, additional research beyond what is provided herein per the grant requirements may be necessary.

3.5 LAND USES WITHIN SERVICE AREA

The District does not have land use authority within its service area; rather, that authority rests with the City of Jurupa Valley. The City incorporated on July 1, 2011 and adopted its first locally prepared General Plan on September 7, 2017. The best guide for future land use within any city or county is that jurisdiction's General Plan Land Use Element; thus, as mentioned previously, the basis for land use and population projections herein is the current General Plan Land Use Map (updated March 2021).

Pursuant to Water Code Section 10631(a), RCSD sent a letter to the City of Jurupa Valley on February 4, 2021 requesting a meeting to coordinate with the City on the most appropriate land use information to use for water resources planning (a copy of said letter is located in Appendix C). RCSD and WEBB met with the City on March 11, 2021 to coordinate on land use information specifically for the UWMP. The District did not meet with San Bernardino County

because it does not serve water to that area and is in the process of detaching the area from its service area. A summary of said coordination meeting with Jurupa Valley is below:

- RCSD and WEBB met via teleconference with the City of Jurupa Valley on March 11, 2021. Attendees included: Annette Tam, Principal Planner for the City of Jurupa Valley; Ted Beckwith, Director of Engineering from RCSD; and Autumn DeWoody, Senior Environmental Analyst and Brad Sackett, Senior Engineer from WEBB. As a result of the meeting, the City provided the current land use plan (current as of March 2021), data on recent ADU applications, and information on large projects planned within and adjacent to the District.

The City is currently implementing its 5th-Cycle Housing Element Housing Program, which addresses the City's regional housing needs from 2013 to 2021. On June 4, 2019, the City's 5th-Cycle Housing Element was certified by the State. The certification was contingent upon the City's inclusion of a Housing Program that established a zoning implementation plan to rezone at least 16 acres with minimum densities of 25 dwelling units per acre anywhere suitable within the City. This involved several General Plan Amendments and Zone Changes. The land use map used for this UWMP which includes these General Plan Amendments to address the City's regional housing needs allocation is shown in **Figure 3-5 – Land Use Designations.**

There are three areas within the District that are undeveloped/underdeveloped that are anticipated to develop in the next 5-20 years; this includes the Agua Mansa Commerce Park Specific Plan, Rio Vista Specific Plan, and Emerald Meadows Ranch Specific Plan (**Figure 3-6 – Future Large Developments)**.

Agua Mansa Commerce Park Specific Plan

The Agua Mansa Commerce Park is a fully entitled 4.4 million square foot logistics center on 291-acres formerly used by the Riverside Cement Plant. Construction of Phase I has commenced consisting of five buildings and 3.6 million square feet of warehouse buildings, and 70-acres of open space. The District prepared a Water Supply Assessment (WSA) for the project dated December 2016 pursuant to Senate Bill (SB) 610. This WSA estimated the water demand of the project to be 50 AF per year (RCSD(a), p. II-1). The Specific Plan area was annexed into the District in 2020. Because this is not a residential project, this project does not contribute to the population projections in Submittal Table 3-1.

Rio Vista Specific Plan

The Rio Vista Specific Plan currently proposes 1,307 dwelling units on 917 acres, with 14-acre school site and 600 acres of parks and open space. If entitled, this plan would supersede and replace the existing Rio Vista Specific Plan previously adopted by the County prior to City incorporation. The District prepared a WSA for the project dated July 2018 pursuant to SB 610. This WSA determined that the water use for the project is 2,000 AF per year (RCSD(b), p. II-1). The Specific Plan area is currently vacant and within the District's sphere of influence; annexation into the District would be required. Because this has a residential component, this project's proposed additional population was added to the population projections in Submittal Table 3-1 beginning in 2030.

Emerald Meadows Ranch Specific Plan

The Emerald Meadows Ranch Specific Plan was adopted in 2006 by the County Board of Supervisors and provides for various densities of residential neighborhoods, school, park, and church sites, and a commercial site at Rubidoux Blvd. and the State Route 60 Freeway. To date, the City Council has not approved changes to the 2006 land use plan. The Specific Plan property is currently vacant and within the District's service area. Because the land uses of this Specific Plan are already shown in the City's land use plan, the population projections in Submittal Table 3-1 include the potential population of this Specific Plan beginning in 2025.

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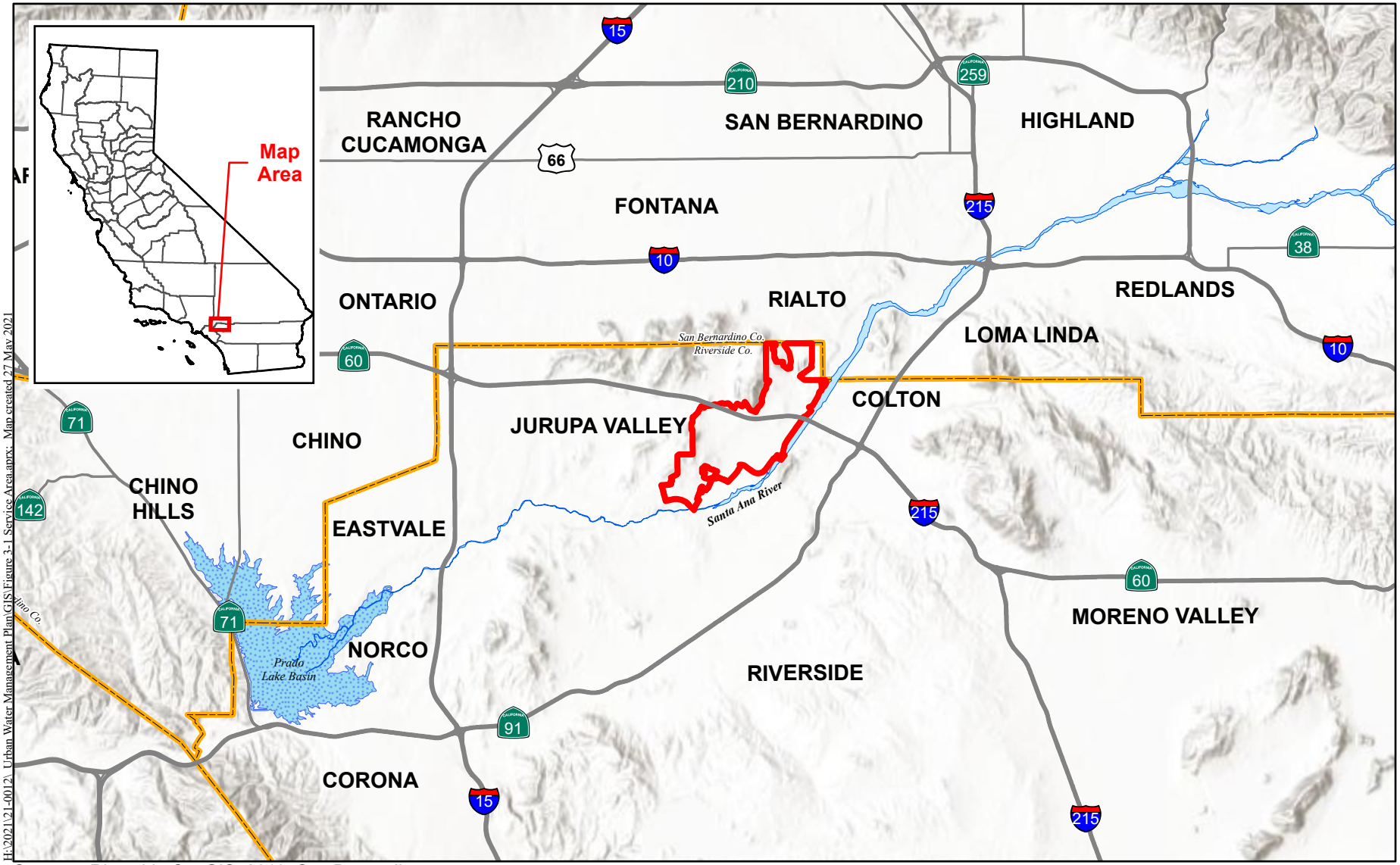


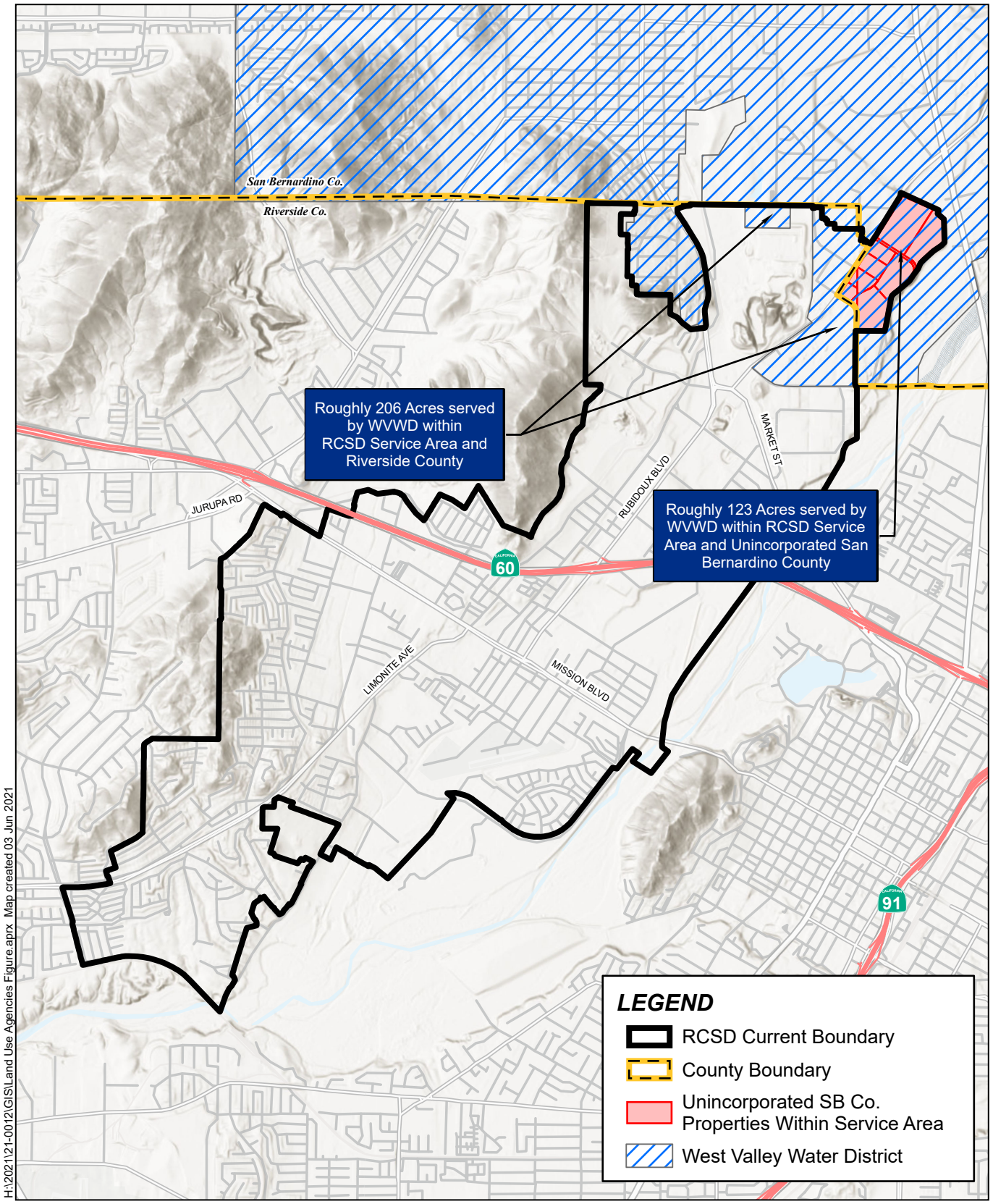
H:\2021\21-0012_Urban Water Management Plan\GIS\Figure 3-1 Service Area.aprx; Map created 27 May 2021

Sources: Riverside Co. GIS, 2019; San Bernardino
USDA NAIP, 2020

0 5 10 Miles

Figure 3-1 Vicinity Map

RCSD Urban Water Management Plan 2020



Sources: RCSD 2015; San Bernardino Co. GIS, 2021; USDA NAIP, 2016.

0 1,500 3,000 4,500 Feet

Figure 3-2 Water Service Area

RCSD Urban Water Management Plan 2020

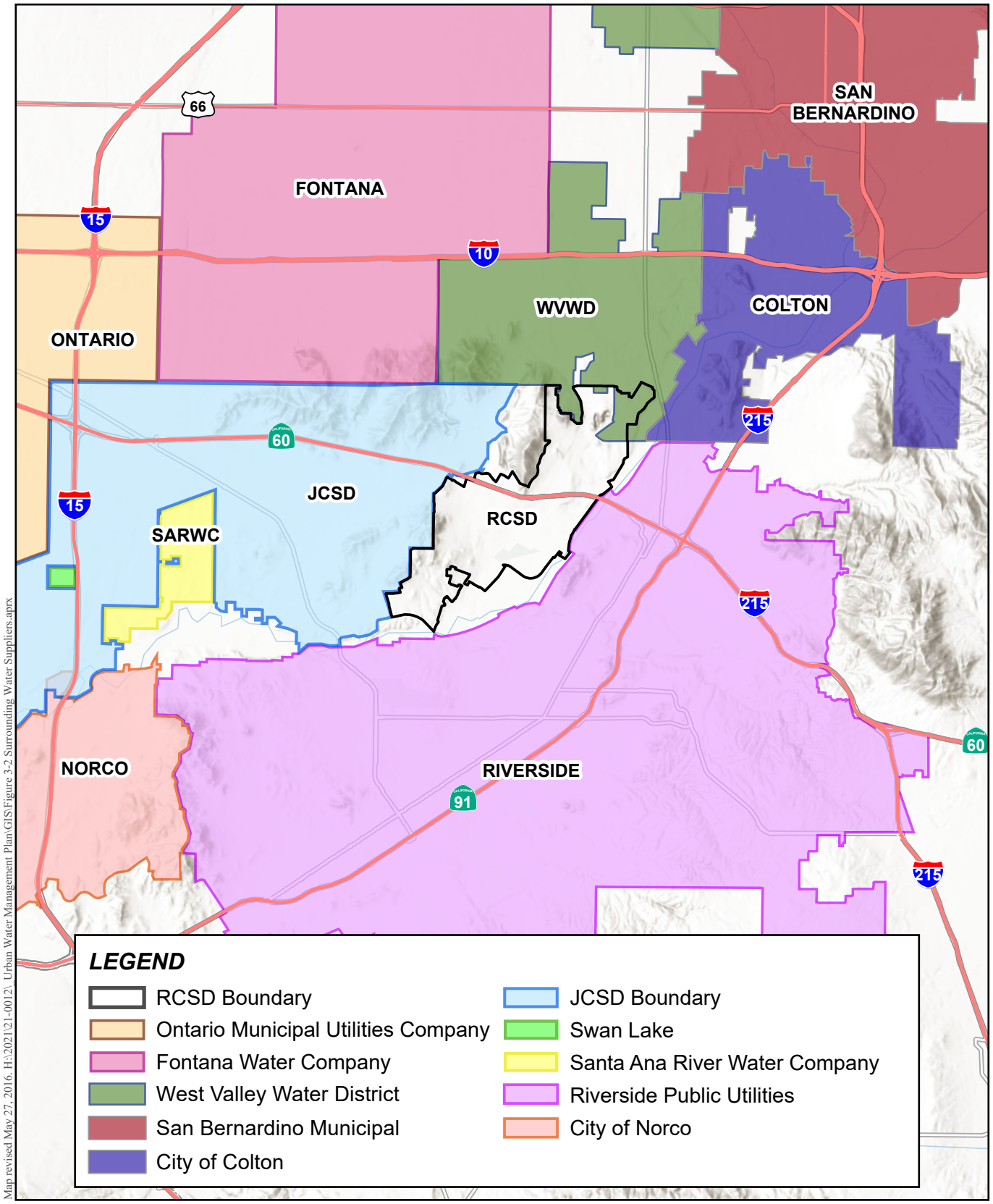
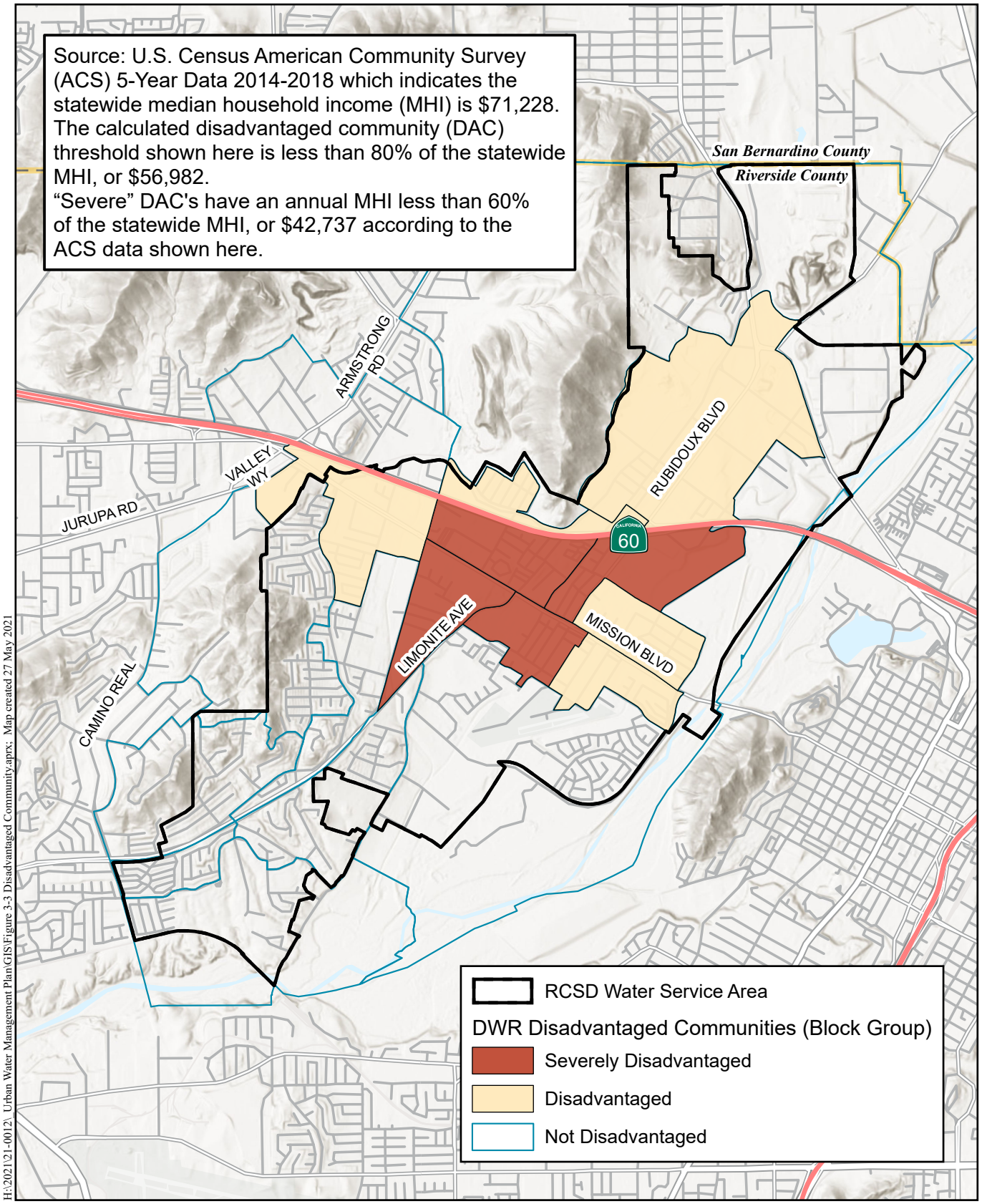


Figure 3-3 Surrounding Water Providers

RCSD Urban Water Management Plan 2020



H:\2021\21-0012_Urban Water Management Plan\GIS\Figure 3-3 Disadvantaged Community.aprx: Map created 27 May 2021

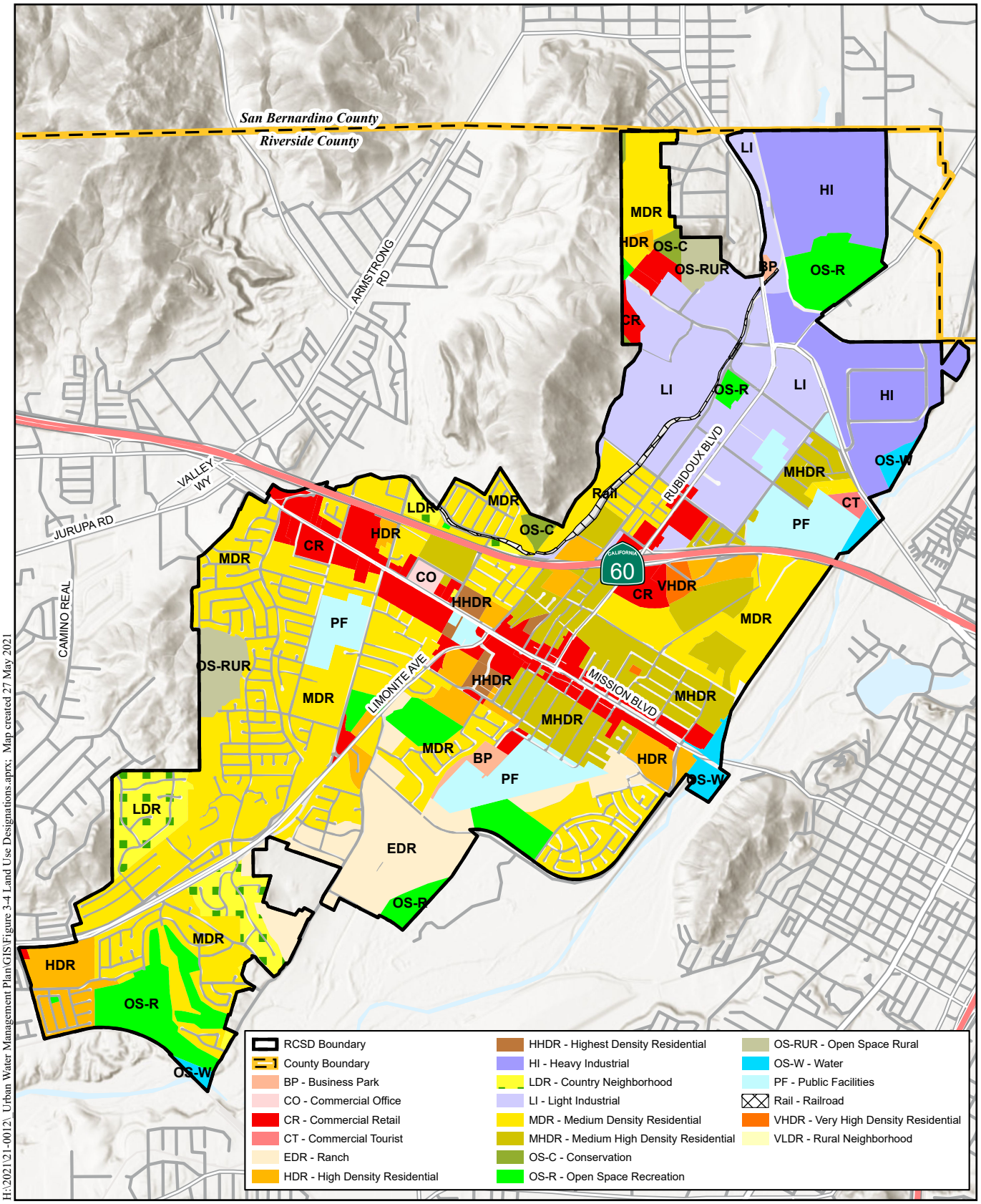
Sources: Calif. Dept. Water Res., 2021; US Census Bureau, 2018; Riverside Co. GIS, 2021.

0 4,000 8,000 Feet

Figure 3-4 Disadvantaged Communities

RCSD Urban Water Management Plan 2020

ALBERT A. WEBB ASSOCIATES



H:\2021\21-0012_Urban Water Management Plan\GIS\Figure 3-4 Land Use Designations aprx: Map created 27 May 2021

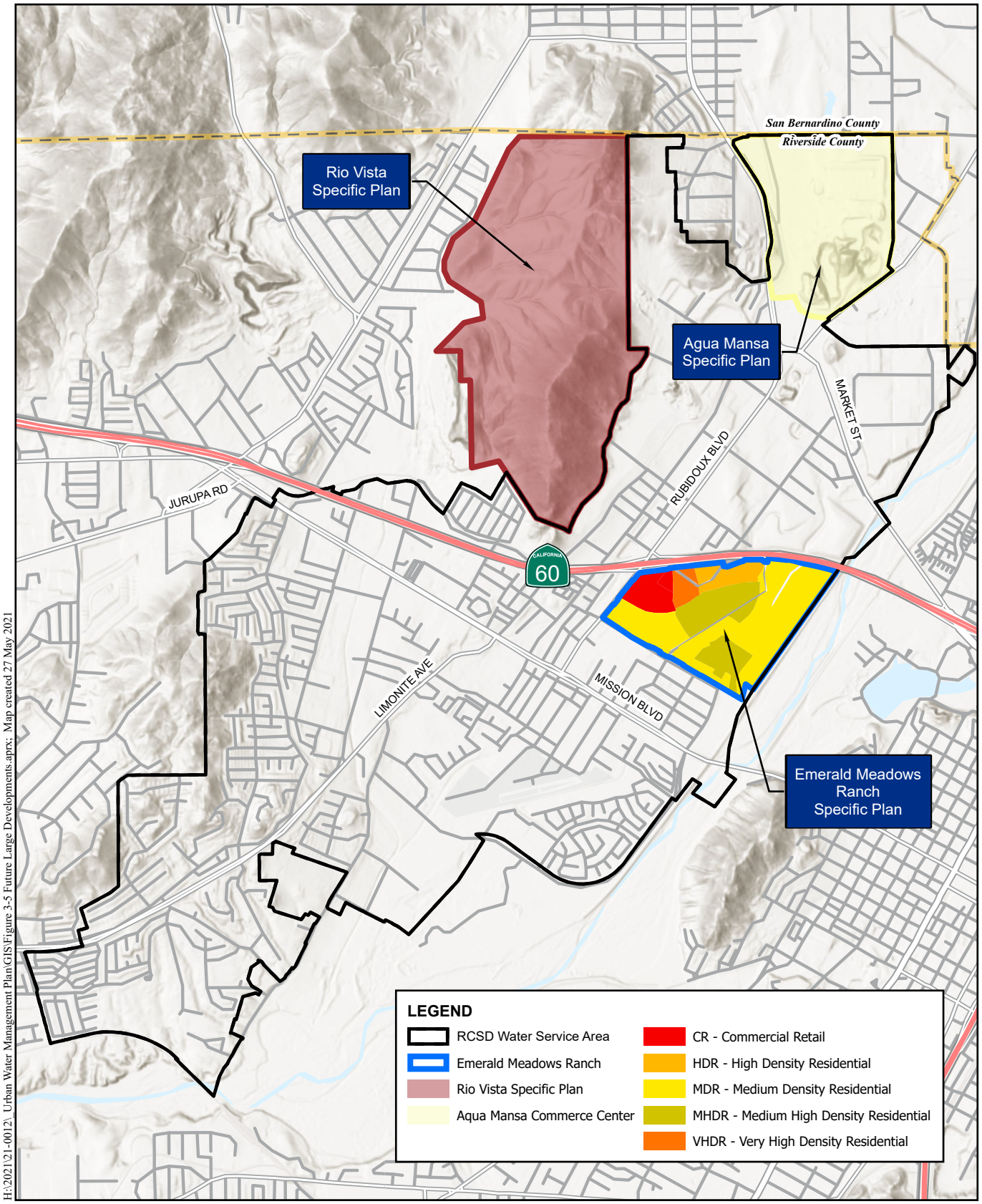
Sources: City of Jurupa Valley, 2021;
Riverside Co. GIS 2021

0 3,000 6,000 Feet

Figure 3-5 Land Use Designations

RCSD Urban Water Management Plan 2020

ALBERT A. WEBB ASSOCIATES



H:\2021\21-0012_Urban Water Management Plan\GIS\Figure 3-5 Future Large Developments.aprx; Map created 27 May 2021

Sources: City of Jurupa Valley, 2021; Riverside Co. GIS 2021; NAIP, 2016.

0 2,000 4,000 Feet

Figure 3-6 Future Large Developments

RCSD Urban Water Management Plan 2020

ALBERT A. WEBB ASSOCIATES

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CHAPTER 4 WATER USE CHARACTERIZATION

This chapter describes how the water that is produced, purchased, and sold within the District is then used, and how water is projected to be used through the year 2045. Demands for potable water and non-potable water are accounted for separately.

4.1 PAST WATER USE

The District provides potable water to its urban retail customers and non-potable irrigation water for parks, school fields, and construction. Up until 2017, RCSD supplied potable water to a neighboring agency, JCSD. The District's metered water deliveries from 2015 to 2020 are shown in **Table 4A**. The District reports single-family residential and multi-family residential combined, and commercial, institutional (governmental), and industrial are combined as well. Water lost during the process of distribution due to leaks, metering inaccuracies, and theft are reported as water losses. Water use values are reported each year by RCSD to the State Water Board.

Table 4A RCSD Metered Water Deliveries (AF), 2016-2020

Water Use Sectors	2015[1]	2016	2017	2018	2019	2020[4]
Single-Family Residential & Multi-Family Residential	3,151	2,942	3,213	3,313.2	3,321.1	3,622
Commercial, Institutional, and Industrial	995	929	947	981.5	962.3	969
Hydrant Meters	-	-	-	-	-	83
Other (District facilities)	0	0	0	3.9	0	4
Potable Distribution System Losses[2]	1,187	439.8	553.7	502.4	319.5	91
Potable Water Sold to Other Agencies[3]	1,837	2,029	2,323	0	0	0
Total Potable Demand (AF)	**7,170**	**6,340**	**7,037**	**4,801**	**4,603**	**4,770**
Non-Potable Irrigation	631	0	0	410.5	0	382
Non-Potable Hydrants	-	-	-	-	-	4
Non-Potable Losses	-	-	-	-	-	31

Source: RCSD *Large Water System Annual Report to the Drinking Water Program [Section 116530 Health & Safety Code]* for years ending December 31, 2016-2019.
[1] From RCSD 2015 UWMP, p. 4-2.
[2] Source: RCSD *Validated Water Audit Report* for CY 2016-2019.
[3] Sales to Jurupa Community Services District stopped in 2017.
[4] Source: RCSD meter data from CY 2020.
AF = acre-feet

Table 4A suggests that residential customers continue to use the majority of water in the District; from 40% of total water used in 2015 to 72% of total demand in 2019. And that the rate of use has been relatively consistent over this time. Commercial/Institutional/Industrial has consumed on average 16% of total water use, and water losses constituted 9% of total use on average between the years of 2016 and 2019. Before sales of water to JCSD stopped at the end of 2017 due to water quality concerns, that demand was approximately 30% of the District's water demand between 2015 and 2017.

4.2 CURRENT WATER USE

As of December 31, 2020, RCSD consumed 4,770 AF of potable water and 417 AF of non-potable water for a total of 5,187 AF. For reference, the District's 2015 UWMP estimated a total demand volume of 6,552 AF for CY 2020. As shown in **Submittal Table 4-1** (next page), the actual metered water use is reported in groups, with single-family residential combined with multi-family residential, and commercial, industrial, and institutional (governmental) combined into one sector.

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable Water - Actual			
Use Type	2020 Actual		
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume*
Add additional rows as needed			
Other Potable	Single-family and multi-family residential combined	Drinking Water	3,622
Other Potable	Commercial, industrial, and institutional/governmental combined	Drinking Water	969
Other Potable	Hydrant Meters	Drinking Water	83
Other Potable	District facilities (unbilled)	Drinking Water	4
Losses	Potable	Drinking Water	91
Other Non-Potable	Hydrants	Raw Water	4
Landscape	Non-potable irrigation	Raw Water	382
Losses	Non-Potable	Raw Water	31
		TOTAL	5,187
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*			
NOTES: Units in acre-feet (AF). From CY 2020 RCSD meter data.			

The non-potable irrigation demand is satisfied with non-potable well water which is separate from the potable system. The potable and non-potable water losses shown in Submittal Table 4-1 are estimates for CY 2020 and calculated by subtracting total demand from total supply.

4.3 PROJECTED WATER USE

Estimating future demand for water is essential for the District to manage their water supply and appropriately plan their infrastructure investments. In general, the District expects residential customers to continue being the majority of water use. The water use projections made herein are based on buildout of the City's current land use plan (updated March 2021) using updated (2020) water duty factors (aka unit water demand factors) calculated for this UWMP and the forthcoming Water Master Plan. The water duty factors are based on actual metered water usage from 2018 through 2020.

As described in Chapter 3, the City's current land use plan already includes the approved land uses of the Emerald Meadows Ranch Specific Plan, therefore it was not added manually herein. The additional demand from the future Agua Mansa Commerce Park Specific Plan of 50 AFY was manually added into the District's future demands beginning in 2025. Likewise, the additional water demand expected from the future Rio Vista Specific Plan of 2,000 AFY was manually added into the District's future demands beginning in 2030.

To calculate the potable demands from 2025-2045, an average annual growth rate of 4.8% was calculated from 2020 to the buildout retail potable demand of 10,800 AF in 2036, including water demands from Agua Mansa and Rio Vista projects added in 2025 and 2030, respectively. Projected usage by type is based on the proportion of total potable use in CY 2020, which was 76% residential, 20% non-residential, 2% potable hydrant meters, 0.1% District meters, and 2% losses. Sales of potable water to JCSD are considered separate from the urban retail demands and held steady at 2,000 AF per year.

To project the non-potable demands from 2025-2045, an average annual growth rate of 6% was calculated based on non-potable production volumes from 2010-2020. The significant decrease in non-potable production between 2016 and 2017 (-64%) was omitted as an outlier. Projected usage by type is based on the proportion of total non-potable use in CY 2020, which was 92% irrigation, 7% losses, and 1% hydrant meters. RCSD potable and non-potable water demand projections are shown in **Submittal Table 4-2**.

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

Use Type	Additional Description (as needed)	Projected Water Use* *Report To the Extent that Records are Available*				
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		2025	2030	2035	2040	2045 (opt)
Add additional rows as needed						
Other Potable	Single Family Residential and Multi-Family Residential Combined	4,605	7,068	8,012	8,201	8,201
Other Potable	Commercial, Industrial, and Institutional (Governmental) Combined	1,232	1,891	2,144	2,194	2,194
Other Potable	Potable Hydrant Meters	106	163	184	189	189
Other Potable	District facilities (unbilled)	6	9	10	10	10
Losses	Potable Losses	116	178	201	206	206
Sales/Transfers/Exchanges to other Suppliers	Sales to JCSD (potable)	2,000	2,000	2,000	2,000	2,000
Other Non-Potable	Non-Potable Hydrant Meters	5	7	10	10	10
Landscape	Non-potable Irrigation	523	716	980	980	980
Losses	Non-Potable Losses	42	58	80	80	80
	TOTAL	8,635	12,090	13,621	13,870	13,870

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

NOTES: Units in acre-feet (AF). Potable average annual growth rate of 4.8% to reach population buildout in 2036, with Agua Mansa (50 AFY) and Rio Vista (2000 AFY) projects added to potable demands in 2025 and 2030, respectively. Potable usage by type based on proportion of total use in CY 2020 (i.e., 76% residential, 20% non-residential, 2% hydrants, 0.1% District use, 2% losses). Sales are held constant and separate from urban retail and non-potable projection methodology. Total non-potable demand based on 6% average annual growth rate from non-pot production from 2010-2020 (omitting outlier data from 2016-2017). Non-potable usage by type based on proportion of total non-potable use in CY2020 (i.e., 1% hydrants, 92% irrigation, and 7% losses).

Future water savings (or "Passive Savings") from codes, standards, ordinances, or transportation and land use plans are not included in the District's demand projections. Total water demand for RCSD beginning with current demand and projected through 2045 is summarized in **Submittal Table 4-3**. There is currently no recycled water demand and no recycled water was put into long-term storage (see Chapter 6).

Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)						
	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable *From Tables 4-1R and 4-2 R*	5,187	8,635	12,090	13,621	13,870	13,870
Recycled Water Demand[1] *From Table 6-4*	0	0	0	0	0	0
Optional Deduction of Recycled Water Put Into Long-Term Storage[2]						
TOTAL WATER USE	5,187	8,635	12,090	13,621	13,870	13,870
[1] Recycled water demand fields will be blank until Table 6-4 is complete *[2] Long term storage means water placed into groundwater or surface storage that is not removed from storage in the same year. Supplier **may** deduct recycled water placed in long-term storage from their reported demand. This value is manually entered into Table 4-3.*						
NOTES: Units in acre-feet (AF).						

4.4 DISTRIBUTION SYSTEM WATER LOSSES

Distribution system water loss is the water lost to the system between the point of production and the point of delivery to customers. It includes "real" losses or those attributed to leaks, breaks, and overflows, and "apparent" losses which include metering inaccuracies, data handling errors, and water theft. Water loss is considered a demand and is shown in Table 4A and Submittal Tables 4-1 and 4-2 as part of the District's past, current, and future water demands. **Submittal Table 4-4** summarizes the District's total losses from CY 2016 to CY 2020.

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss [1,2]
01/2016	439.8
01/2017	553.7
01/2018	502.4
01/2019	319.5
01/2020	91
[1] Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet. *[2] **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*	
NOTES: Units in acre-feet (AF). Potable water only. 2016-2019 data comes from validated water loss audits. 2020 data is estimated from meter data as total potable production minus total potable consumption.	

California Senate Bill No. 1420 (SB 1420) requires water utilities that submit UWMPs to calculate annual system water losses in a water loss audit. Copies of the District's validated water loss audits from 2016-2019 are included in **Appendix G**. A validated audit for CY 2020 data was not required to be prepared prior to adoption of this UWMP. The efforts to decrease water loss are described in Chapter 9 – Demand Management Measures.

4.4.1 Future Water Loss Performance Standard

Water Code Section 10608.34, subdivision (i) (Senate Bill 555, 2015) requires the State Water Resources Control Board to adopt volumetric performance standards for water loss for urban retail water suppliers. Pursuant to this law, urban retail water suppliers have been annually submitting water loss audits to DWR since October 2017. Copies of RCSD validated water audits are located in Appendix G.

Additionally, urban retail water suppliers are required to calculate an urban water use objective that includes indoor, outdoor, commercial, industrial, and institutional irrigation uses and allowed water loss by 2024 (AB 1668 and SB 606, 2018). These standards are still in the pre-rulemaking process and have not been adopted to-date. However, the Water Code requires

data to be included in this 2020 UWMP that demonstrates whether the District will meet its water loss performance standard, even though it has yet to be determined. Therefore, to demonstrate that RCSD is expected to meet its forthcoming water loss performance standard, the reader should refer to Submittal Table 4-4 and the 2017-2019 audits located in Appendix G that show losses on the decline from 2017-2020. This is a result of a larger effort by RCSD to replace old pipelines and dedicate more staff effort towards repairing leaks and improving data management. In addition, the District will start calibrating and testing meters and installing an automatic meter reading (AMR) system within the next few years such that all meters could be part of an AMR system by 2028 when the State expects to start assessing compliance for the forthcoming water loss standard. Chapter 9 discusses these efforts in more detail. Because RCSD's CY 2019 validated water loss audit shows "real" loss at 37.96 gallons per connection per day, the District may be required to submit responses to the forthcoming state questionnaires on water loss-specific information and may have to further reduce water loss (SWRCB Fact Sheet, pp. 1-2). However, considering the preliminary potable losses for CY 2020 are just 91 AF as shown in Submittal Table 4-4, the District may not be required to further reduce water loss. Regardless of the forthcoming standards, the District is leading a concerted effort to improve the efficiency of the distribution system, which will help reduce water loss.

4.5 WATER USE FOR LOWER INCOME HOUSEHOLDS

California Senate Bill No. 1087 (SB 1087) requires the water use projections of an UWMP to include the water demands for affordable housing as identified in the housing element of any city, county, or city and county in the service area of the supplier. SB 1087 builds on an existing statutory priority for providing water and sewer services to affordable housing developments.

The City of Jurupa Valley General Plan Housing Element was approved in 2017 and addresses the City's housing needs from 2013 to 2021. The next update will address the period from 2021 to 2029. On June 4, 2019, the City's Fifth-Cycle Housing Element (2013-2021) was certified by the State; however, it was contingent upon the City developing a Housing Program that rezoned at least 16 acres with minimum densities of 25 units per acre anywhere suitable within the City. (JV(a), pp. 1-4)

The City Council initiated the amendments to the General Plan Land Use Map and the Zoning Map to implement said Housing Program in March of 2019. In March 2021, the City Council approved the rezoning of approximately 35 acres on 13 individual parcels of land distributed throughout the community, which will allow an estimated 595 units and meet the State's requirement (JV(a), pp. 1-4). The land use plan used for this UWMP and includes said General Plan Amendments is shown in Chapter 3, Figure 3-5.

RCSD has a civic and legal responsibility to provide water for the health and safety of the service area. RCSD serves all residential customers equally regardless of income level and RCSD does not deny service to non-delinquent accounts. Because the residential water use projections provided herein are based on the aforementioned changes to the City General Plan land use plan, which includes residential designations of all types including designations that allow for low-income housing and included to help the City meet its regional housing needs allocation, the water use projections in Submittal Table 4-3 include water use for housing needed for lower-income households as verified by **Submittal Table 4-5**.

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	No
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes

4.6 CLIMATE CHANGE CONSIDERATIONS FOR WATER USE

Beginning in the 2020 UWMP, the Water Code requires the District to consider the impacts of climate change in its water use projections, which are shown in Submittal Table 4-2. The District's considerations for climate change impacts began with using the *Climate Change Vulnerability Screening Form for Urban Water Management Planning* included with the DWR Guidebook for 2020 UWMPs. Pursuant to Water Code, the District's planning for climate change impacts was commensurate with the number of customers served and the volume of

water supplied. The type and degree to which climate change impacts were considered in the District's water use projections, and the basis for those assumptions are described below.

Western prepared a Technical Memorandum dated April 22, 2021 describing an analysis performed as part of its Drought Contingency Plan and Climate Change Vulnerability Assessment and made the results available for use by RCSD and other retail agencies within Western's service area to use in their UWMPs (WMWD(a)). A copy of said memo is located in **Appendix H**. The results of the analysis generated factors that its retail agencies can apply to water demand and supply projections to represent the projected effects of climate change within Western's service area. RCSD has used these factors herein where noted (see **Table 4B**, next page). The results of the analysis that pertain to water demands are provided below:

> *The impacts of climate change on outdoor water demand are projected to be similar during normal and drought years over the next two decades. This is because climate change datasets show that temperatures are projected to increase over time, regardless of hydrologic conditions. These projected increases in temperature are estimated to increase ET rates for landscaping, irrigated agriculture, and native vegetation. For all year types, outdoor water use is projected to increase by about 3 percent during the next two decades. The water demand change factors are applied to outdoor water uses, which have been adjusted for future population growth and conservation measures. Indoor water uses are assumed to respond to future population growth and conservation as well but are not sensitive to climate change.* (WMWD(a), p. 13)

Table 4B - Water Demand Climate Change Factors for Outdoor Water Uses[1]

Beginning Year	Normal Year	Single-Dry Year	Five-Year Dry Period
2020	100.0%	100.0%	100.0%
2025	100.6%	100.6%	99.8%
2030	101.2%	101.3%	101.2%
2035	101.8%	101.9%	101.8%
2040	102.4%	102.5%	102.4%
2045	103.1%	103.2%	103.0%

Source: Western Municipal Water District, *Technical Memorandum: Western Drought Contingency Plan – Climate Change Vulnerability Assessment*, April 22, 2021 (WMWD(a), p. 13), located in Appendix H.

(1) 2020 is baseline year. Because the District is unable to tease out indoor from outdoor water use for most of its customers at this time, the factors have been applied to all demands. Factors that are greater than 100% will increase the demand and factors that are less than 100% will decrease the demand.

To account for the potential effects of climate change to projected water demands, RCSD has conservatively applied the normal year factors from Western's analysis in Table 4B to the demand projections of Submittal Table 4-2 beginning in 2025 through 2045, even though some of that demand is indoor use that is not sensitive to climate change. The results are shown below in **Table 4C**.

Table 4C Potential Effect of Climate Change to Projected Normal Year Demands

	2025	2030	2035	2040	2045
TOTAL DEMANDS From Table 4-2[1]	8,635	12,090	13,621	13,870	13,870
Normal Year Water Demand Climate Change Factor[2]	100.6%	101.2%	101.8%	102.4%	103.1%
TOTAL DEMANDS with Climate Change Factor (AF)	8,687	12,235	13,866	14,203	14,300
Potential Increase in Water Demand from Climate Change (AF) [3]	52	145	245	333	430

Notes: Units in acre-feet (AF).

(1) From Table 4-2.

(2) Factors from Table 4B (WMWD(a)).

(3) Difference between total demands and total demands with climate change factor.

According to the Cal-Adapt projections provided in Chapter 3 and Western's technical memorandum and climate change analysis, higher temperatures and less rainfall are anticipated to occur as a result of climate change, and these are the factors that may affect water demand the most. Customer demands increase in summer; therefore, an increase in average annual temperatures and the frequency and duration of heat waves as the result of climate change is expected to increase existing customer demands for water, particularly outdoor use. Based on past events, the District anticipates additional restrictions on outdoor water use will occur through Water Code changes and County, City, or District ordinance changes. Because RCSD primarily serves urban water demand and does not have an agricultural customer base, such restrictions are expected to result in changes to the urban environment, such as improvements to indoor water use (i.e., replacing inefficient appliances/fixtures), or changes in public and private landscaping that incorporates more drought tolerant plant species and/or zero-irrigation.

The District's demand projections herein have conservatively assumed no reductions in future water use from codes, ordinances, or other water conservation policies. Water demands across all customer sectors are projected to increase over the 20-year period. This is a conservative approach given that future development and redevelopment projects will have the latest water conservation mandates such as more efficient fixtures and drought tolerant plant species. For example, the aforementioned large development projects (i.e., Agua Mansa, Rio Vista, and Emerald Meadows) will include water efficient features that may reduce the currently estimated water demands for these projects.

The District plans to continue managing demand by using tiered water rates (see Chapter 9). Currently the lowest tier of 1 to 5 hundred cubic feet (HCF) is $1.18/unit.[1] The highest tier, 30 HCF and greater is $3.03/unit. This tiered rate structure has created demand hardening where the annual demand per connection is averaging approximately 0.63 AFY (205,286 gallons or approximately 3 HCF) (per electronic Annual Reports Years 2017 and 2018 filed with Division of Drinking Water).

[1] 1 HCF = 748.8 gallons

CHAPTER 5 SB X7-7 BASELINES AND TARGETS

With the adoption of the Water Conservation Act of 2009, also known as Senate Bill (SB) X7-7, the State is required to reduce urban per capita water use by 20 percent by the year 2020. To help the State reach this legislative requirement, each retail urban water supplier (Supplier), including RCSD, is required to also reduce their respective urban per capita (per person) water use by 20 percent. SB X7-7 required each Supplier to determine their baseline water use (Water Use Baseline) during the baseline period and their target water use for the years 2015 (Interim Water Use Target) and 2020 (2020 Water Use Target). The cumulative efforts of each Supplier to meet their respective target water use would result in the State achieving the legislative water reduction requirement by 2020.

In the 2010 UWMP, RSCD calculated the Water Use Baseline, the Interim Water Use Target, and the 2020 Water Use Target using the best available census data at the time, which was the 2000 U.S. Census. In the District's 2015 UWMP, the baselines and targets were updated and recalculated using DWR's Population Tool which included the 2010 U.S. Census. The 2015 Interim Water Use Target was 187 gallons per capita per day (GPCD) and the 2020 Water Use Target was 166 GPCD.[1] Because the District's actual water use was 181 GPCD in 2015, the 2015 UWMP determined that RCSD met the Interim Water Use Target and was on track to meet the 2020 Water Use Target by year end 2020. Compliance with the Interim Water Use Target was verified by DWR reviewing the SB X7-7 Verification Forms submitted with the District's 2015 UWMP. The complete set of SB X7-7 Verification Forms are provided in **Appendix I.**

In this UWMP, RCSD must demonstrate that they met their 2020 Water Use Target by completing the SB X7-7 2020 Compliance Form which are also provided in Appendix I. Please note the tables from the SB X7-7 Verification Forms and the SB X7-7 2020 Compliance Form that are shown in this Chapter differ from the UWMP tables in the rest of this Plan as they are colored green and brown and begin with the title "SB X7-7 Table …"

[1] Two terms are often used interchangeably; "Daily per Capita Water Use" and "Gallons per Capita per Day" (GPCD). Daily per Capita Water Use is the amount of water used per person per day. In the UWMP, this is total water use within a service area, divided by population and is measured in gallons. GPCD is Daily per Capita Water Use measured in gallons. These are different from R-GPCD, which is solely the residential water use divided by population and is used in drought reporting to the SWRCB.

5.1 RECALCULATION OF BASELINES AND TARGETS

There are some situations where the per-person daily water use baselines and targets must, or may be, recalculated including availability of better data, certain service area expansions, contractions, or annexations of already developed areas.

The District's 2015 service area boundary increased by approximately 291 acres in 2020 with annexation of the Agua Mansa Commerce Park Specific Plan area (see Figure 3-6). This area was the site of a former cement plant surrounded by open space that relied on a private onsite well for water service. Further, the District did not provide water service to the site until after the end of 2020. Because the annexed land was not receiving water service from a supplier prior to the annexation and did not receive supplies from RCSD before the end of 2020, and this annexation is due solely to new construction, no revisions to the District's Water Use Baseline, Interim Water Use Target, and 2020 Water Use Target from the 2015 UWMP were made herein consistent with *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (Feb. 2016) (*Methodologies*).

5.2 BASELINE AND TARGETS

The District's Water Use Baseline, Interim Water Use Target, and the 2020 Water Use Target calculated in the 2015 UWMP are summarized here, and the complete set of tables are provided in Appendix I.

Since RCSD does not deliver recycled water, the 10-year baseline or the "Baseline GPCD" period began in 1999 and ended in 2008. The 5-year baseline or the "Target Confirmation" period began in 2003 and ended in 2007, as shown in **SB X7-7 Table -1**.

SB X7-7 Table-1: Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	6,511	Acre Feet
	2008 total volume of delivered recycled water	-	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period[1, 2]	10	Years
	Year beginning baseline period range	1999	
	Year ending baseline period range[3]	2008	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range[4]	2007	

[1] *If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.* [2] *The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.*

[3] *The ending year must be between December 31, 2004 and December 31, 2010.*

[4] *The ending year must be between December 31, 2007 and December 31, 2010.*

NOTES:

Once the baseline periods are set, the baseline GPCD is calculated by dividing the volume of water into the system for each baseline year by the service area population in that year (population as calculated by the DWR Population Tool). The 10-year and 5-year baseline GPCD calculations are shown below in **SB X7-7 Table 5,** which has not changed from the 2015 UWMP.

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Annual Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1999	24,856	5,466	196
Year 2	2000	25,367	5,631	198
Year 3	2001	25,850	5,922	205
Year 4	2002	26,340	6,733	228
Year 5	2003	26,824	6,113	203
Year 6	2004	27,305	6,595	216
Year 7	2005	27,780	6,304	203
Year 8	2006	28,251	6,841	216
Year 9	2007	28,717	6,894	214
Year 10	2008	29,179	6,511	199
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**208**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2003	26,824	6,113	203
Year 2	2004	27,305	6,595	216
Year 3	2005	27,780	6,304	203
Year 4	2006	28,251	6,841	216
Year 5	2007	28,717	6,894	214
5 Year Average Baseline GPCD				**210**
2015 Compliance Year GPCD				
2015		33,441	6,774	**181**
NOTES:				

To calculate the 2020 Water Use Target, the *Target Method 1 – 80 percent of Baseline* methodology was selected in the 2015 UWMP pursuant to Water Code Section 10608.20(b)(1), as shown in **SB X7-7 Table 7-A.**

SB X7-7 Table 7-A: Target Method 1
20% Reduction

10-15 Year Baseline GPCD	2020 Target GPCD
208	166

NOTES:

5.3 2020 SERVICE AREA POPULATION

To correctly calculate the compliance year (2020) GPCD, the population served in 2020 was determined by using DWR's online Population Tool (Appendix E). The Population Tool was also used for the 2015 UWMP.

The DWR Population Tool utilizes U.S. Census year (i.e., 1990, 2000, and 2010)[2] population data, electronic boundary maps of the District service area for each census year, and the number of meter connections from the District's *Annual Report to the Drinking Water Program*. The Population Tool then calculates the population for the non-census years as shown in **SB X7-7 Table 3**.

[2] The U.S. Census 2020 decennial data was not available at the time of the 2020 UWMPs.

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	36,827
NOTES: Source DWR Population Tool	

The 2020 Water Use Target year population of 36,827 is considered a reasonable estimate because it is commensurate with the estimated population of 36,400 persons in the District's 2015 *Water Master Plan* (K&S(b), p.II-2).

5.4 2020 GROSS WATER USE

Gross water use is a measure of water that enters the distribution system of the Supplier over a 12-month period (calendar year) with certain allowable exclusions. These exclusions are:

- Recycled water delivered within the service area;
- Indirect recycled water;
- Water placed into long term storage (surface or groundwater);
- Water conveyed to another Supplier;
- Water delivered for agricultural use; or
- Process water.

The above exclusions do not apply to RCSD. Therefore, no exclusions to gross water use will be made for 2020 GPCD calculations.

Gross water use reported for the year 2020 was calculated using *Methodology 1: Gross Water* of the *Methodologies* document, consistent with the way the water use was calculated in the 2015 UWMP for the baseline periods. A 12-month calendar calculation period was used, the water distribution area was delineated and includes District-produced and purchased water. **SB X7-7 Table 4-A** below shows the water entering RCSD's distribution system (both potable and non-potable water) in the year 2020. Approximately 5,187 AFY of groundwater was

produced from RCSD's own wells (i.e., "The Supplier's own water source"). No potable water was purchased from other sources (i.e., "A purchased or imported source").

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

Complete one table for each source.

Name of Source	Wells		
This water source is *(check one)* **:**			
☑	The supplier's own water source		
☐	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	5,187	-	5,187

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

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

NOTES: Source 2020 Annual Report to the Drinking Water Program for Year Ending December 31, 2020.

RCSD does not have any other water sources, therefore the total annual gross water use shown in SB X7-7 Tables 4-A and in **SB X7-7 Table 4** below are the same. The District's gross water use for CY 2020 is 5,187 AFY. No deductions were made for exported water, change in the distribution system storage, indirect recycled water, water delivered for agricultural use, or process water.

SB X7-7 Table 4: 2020 Gross Water Use							
Compliance Year 2020	2020 Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water *This column will remain blank until SB X7-7 Table 4-B is completed.*	Water Delivered for Agricultural Use*	Process Water *This column will remain blank until SB X7-7 Table 4-D is completed.*	
	5,187			-		-	**5,187**
* **Units of measure (AF, MG , or CCF)** must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.							
NOTES:							

5.5 2020 COMPLIANCE DAILY PER CAPITA WATER USE (GPCD)

Based on the 2020 population estimate and 2020 gross water use, RCSD's 2020 daily per capita water use is estimated as 126 GPCD as shown in **SB X7-7 Table 5A, below.**

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water *Fm SB X7-7 Table 4*	2020 Population *Fm SB X7-7 Table 3*	2020 GPCD
5,187	36,827	**126**
NOTES:		

Because the calculated 2020 Water Use Target was 166 GPCD (SB X7-7 Table 7-A, above), and the actual 2020 GPCD is 126 GPCD, the District achieved its target and is compliant with SB X7-7, as shown in **SB X7-7 Table 9**. Pursuant to Water Code Section 10608.24, the District may adjust the actual 2020 GPCD if factors outside the Supplier's control or if special situations occurred. RCSD has determined that no adjustments due to extraordinary events, weather normalization, or economics were warranted.

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD[1]	Optional Adjustments to 2020 GPCD (Enter "0" if Adjustment Not Used)			TOTAL Adjustments[1]	Adjusted 2020 GPCD [1] *(Adjusted if applicable)*	2020 Confirmed Target GPCD [1, 2]	**Did Supplier Achieve Targeted Reduction for 2020?**
	Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]				
126	-	-	-	-	126	166	**YES**

[1] *All values are reported in GPCD*

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

NOTES:

The complete calculations are located in Appendix I. In summary, RCSD has met the water use reduction goal of SB X7-7 and successfully met its 2020 Water Use Target.

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CHAPTER 6 WATER SUPPLY CHARACTERIZATION

RCSD currently obtains its water supply from groundwater pumped from the Riverside County portion of the Riverside-Arlington Subbasin, which is referred to as "Riverside South Basin" within the larger Upper Santa Ana Valley Groundwater Basin (**Figure 6-1 – Groundwater Basins** located at the end of the chapter). The District service area overlies a portion of the Riverside South Basin. The District currently does not purchase water from another agency.

In the future, the District could rely on the Riverside South Basin for all of its water supply, and it plans to construct new wells and water treatment facilities to fully utilize this source; however, to increase potable supply redundancy and lower native total dissolved solids (TDS) concentrations in wastewater, the District is currently planning to begin purchasing imported water from Western Municipal Water District (Western), a member agency of The Metropolitan Water District of Southern California (Metropolitan).

6.1 PURCHASED OR IMPORTED WATER

RCSD currently does not purchase water from other local water entities or imported water supplies from the State Water Project.[1] Western is a member agency of Metropolitan who is a State Water Project Contractor. Western can in-turn sell wholesale supplies of imported water that it purchases from Metropolitan to agencies within its service area. Because RCSD is within the service area of Western, the District could purchase water supplies from Western in the future contingent on several factors including whether a physical pipeline connection can be made.

State Water Project water comes from Northern California in the Sacramento/San Joaquin Delta. As a State Water Project Contractor, Metropolitan receives an annual allocation from DWR that changes each year depending on several factors, including rainfall/snowpack, biological constraints, and various ongoing regulations. In dry years, Metropolitan can use water held in Metropolitan's storage facilities and a variety of flexible programs to store and transfer water so that when DWR's SWP water allocation is low, supply can continue to be available (MWD(a), p. ES-5).

[1] In this plan, the term "imported water" refers only to State Water Project water; it does not refer to any other sources.

[2] Measured as the average extractions from 1959 – 1963 (WSBW(c), p. 86).

Imported water supplies delivered from Western have a low concentration of TDS, which can be used to blend with other water sources to decrease the overall TDS concentration in drinking water. TDS affects the taste and appearance of water so it is typically not a health hazard for consumption, but higher concentrations of TDS in the wastewater impairs the ability of the wastewater treatment operator to meet its discharge permit requirements.

6.2 GROUNDWATER

The District's water supply currently consists entirely of groundwater from the Riverside South Basin (see Figure 6-1). The District operates wells and treatment facilities for potable water and wells for non-potable (raw) water for irrigation, as described below.

6.2.1 Basin Description

The District's water supply comes from the Riverside-Arlington Subbasin (DWR Bulletin 118 Basin No. 8-2.03, aka "Riverside Basin"), which is part of the Upper Santa Ana Valley Groundwater Basin (DWR Bulletin 118 Basin No. 8.2). The Riverside Basin encompasses a surface area of 58,600 acres (92 square miles) within portions of Riverside and San Bernardino Counties. The Riverside Basin underlies part of the Santa Ana River Watershed and is bounded by impermeable rocks of Box Springs Mountains to the southeast, Arlington Mountain to the south, La Sierra Heights and Mount Rubidoux to the northwest, and the Jurupa Mountains to the north (K&S(a), p. 5-2). The Riverside County portion of the Riverside Basin is referred to as "Riverside South Basin" for purposes of its adjudication and is the focus of the discussion herein. See Figure 6-1 for basin locations.

6.2.2 Groundwater Management

The Riverside Basin is adjudicated by two Judgments; first, the Judgment in Case No. 117628, Orange County Water District vs. City of Chino, et al., entered April 17, 1969 ("Orange County Judgment"), which is provided in **Appendix J**. Second, the pumping rights to the San Bernardino, Colton and Riverside Groundwater Basins are set forth in the Judgment in Case No. 78426-County of Riverside, Western Municipal Water District of Riverside County et al., v. East San Bernardino County Water District et al., entered April 17, 1969 ("Western-San

Bernardino Judgment"). A copy of the Western-San Bernardino Judgment is provided in **Appendix K** and will be the focus of the remainder of this section.

The Western-San Bernardino Judgment provides a physical solution that establishes the entitlements and obligations of the two major water districts overlying said basins, namely San Bernardino Valley Municipal Water District (Valley District) and Western. The court appointed a Watermaster, composed of one person nominated from Valley District and one person nominated from Western to administer and enforce all instruction and orders of the court. (WSBW(c), pp. 1, 5)

Compliance with the Judgment requires an annual accounting of groundwater and surface water flows and diversions within the various basins in order that the Watermaster may properly report to the court the comparisons of the year-by-year operations with the verified entitlements and an accounting as to the replenishment obligations or credits indicated by such comparison (WSBW(c), p. 5).

Section IX(b) of the Judgment, below, describes the aggregate pumping limit:

> *Over any five year period, there may be extracted from such Basin Area, without replenishment obligation, an amount equal to five times such annual average for the Basin Area; provided, however, that if extractions in any year exceed such average by more than 30 percent, Western* [Municipal Water District] *shall provide replenishment in the following year equal to the excess extractions over such 20 percent peaking allowance.*

The Judgment does not specify the volume of water in the Riverside Basin that the District can extract or is limited to. The base period average production from 1959-1963 in the Riverside South Basin was 29,633 acre-feet and this is the base right for use in the basin.[2] If annual production exceeds 20% of this average, or if a five-year period production exceeds five times the amount of 29,633 acre-feet, then Western shall provide replenishment. Pumping in the Riverside Basin has not exceeded the base right since the Judgment was entered into. Because the Judgment allows under-extractions to count as credits (and potential increase in storage or base flow) and over-extractions to count as obligations (and potential decline in

[2] Measured as the average extractions from 1959 – 1963 (WSBW(c), p. 86).

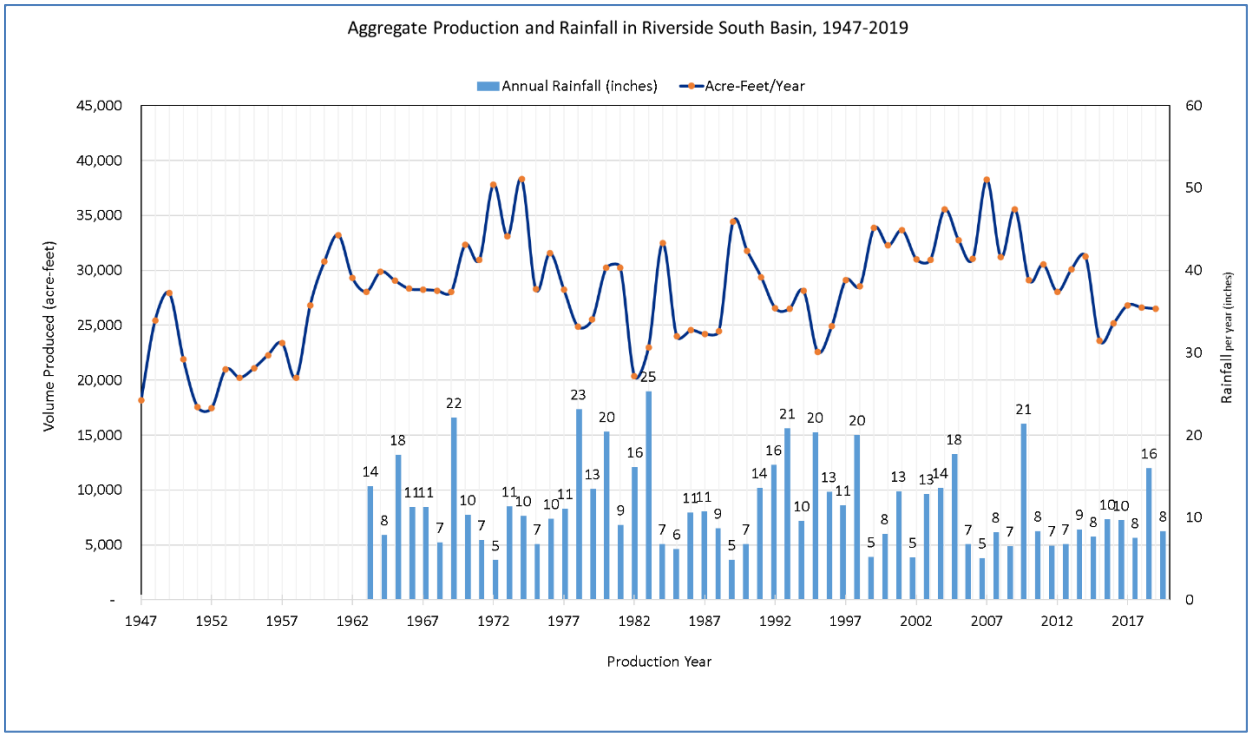
storage or base flow), Western has a credit of 544,221 AF as of 2019 that can be used to offset future obligations (WSBW(c), p. 119). In the event Western is required to provide replenishment water to the Riverside Basin and no credits were available to offset the obligation, then the District may be responsible for some of the cost of that replenishment, along with other users.

As of 2019, total extractions from the Riverside South Basin area were 26,500 AF, which is compared to total extractions in the base period of 1959-1963 at 29,633 AF. Accumulated credits as of 2019 totaled 719,796 AF and accumulated obligations totaled 175,575 AF for a net credit of 544,221 AF (to Western) as of 2019 (WSBW(c), p. 167). Because aggregate production in the adjudicated area remains below the base right, and credits available to offset obligations are roughly ten-times the base right, ample supply in the basin is expected.

6.2.3 Recorded Groundwater Pumping and Sufficiency of Supply

Total recorded groundwater production from 1947 to 2019 for all producers in the Riverside South Basin as recorded by the Watermaster is provided in **Chart 6-1**, which includes annual rainfall from the Riverside area beginning in 1963 (see Chart 3-1).

Chart 6-1 - Aggregate Groundwater Production in Riverside South Basin from 1947-2019 and Total Annual Rainfall in Riverside Area 1963-2019
(Source: WSBW(a); RCFC(b))



(1) "Filing" production amounts were used for years 1947-1958 and 1964-1969. "Verified" production amount was used for all other years.
(2) Total amount produced based on these records is 2,046,427 acre-feet (AF).

The data in Chart 6-1 suggests total production in the basin has hovered around 30,000 AF per year since the adjudication was developed. For example, aggregate production in 2019 was about the same as aggregate production in 1959. During the low rainfall years, an increase in pumping is observed and in wetter years pumping tends to decline. However, the opposite is observed during the statewide drought from 2013-2017; pumping decreased significantly in 2015 with low rainfall, which is assumably a result of demand reduction efforts and conservation. The total volume produced by all the various entities and wells over this 72-year period is approximately 2.05 million acre-feet.

The District's recorded groundwater production data from just District wells beginning in 1970 through 2020 are provided in **Table 6A**. The average annual growth rate for production from 1970 to 2015 is approximately 3%; however, between 2016 and 2020 the average annual rate is -7%.

Table 6A - RCSD Groundwater Production Records

Year	Total Annual Groundwater Production (AF)
1970	1,900
1980	3,000
1990	5,100
1995	5,000
1997	4,800
1998	4,400
1999	5,076
2000	5,630
2001	6,335
2002	5,939
2003	5,912
2004	6,352
2005	6,078
2006	6,606
2007	6,836
2008	6,248
2009	6,227
2010	5,929
2011	6,600
2012	6,786
2013	6,757
2014	7,063
2015	7,801
2016	7,329
2017	7,636
2018	5,256
2019	4,717
2020	5,187
Average	5,804

Source:
1970-2010 from K&S(a) 2015, pp. II-1, II-4.
2011-2015 from K&S(b) 2016, p. 5-4.
2016-2019 from WSBW(a)
2020 from District records.
AF = acre-feet.

The total annual groundwater produced by RCSD from 2016-2020 is provided in **Submittal Table 6-1.** Sufficient water supplies have been available from the Riverside South Basin to meet the District's needs over the past five years.

Submittal Table 6-1 Retail: Groundwater Volume Pumped						
☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
☐	All or part of the groundwater described below is desalinated.					
Groundwater Type ***Drop Down List*** *May use each category multiple times*	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
Add additional rows as needed						
Alluvial Basin	Riverside South Basin (No. 8-02.03) for potable use.	6629	7182	4844	4284	4770
Alluvial Basin	Riverside South Basin (No. 8-02.03) for non-potable use.	700	454	412	433	417
	TOTAL	7,329	7,636	5,256	4,717	5,187
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES: Volumes in AF. Source: 2016-2019 from Western-San Bernardino Watermaster Production Data by Basin. 2020 data from RCSD.						

From 2016-2020, the average annual production volume of potable and non-potable water produced was 5,542 AF and 483 AF, respectively. The average annual rate of change for potable and non-potable production was -6% and -11%, respectively (Submittal Table 6-1).

The District's groundwater supply has been sufficient in drought years to meet its needs. The District has not been impacted by seasonal or year-to-year climatic changes, nor subject to short-term water shortages resulting from drought conditions.

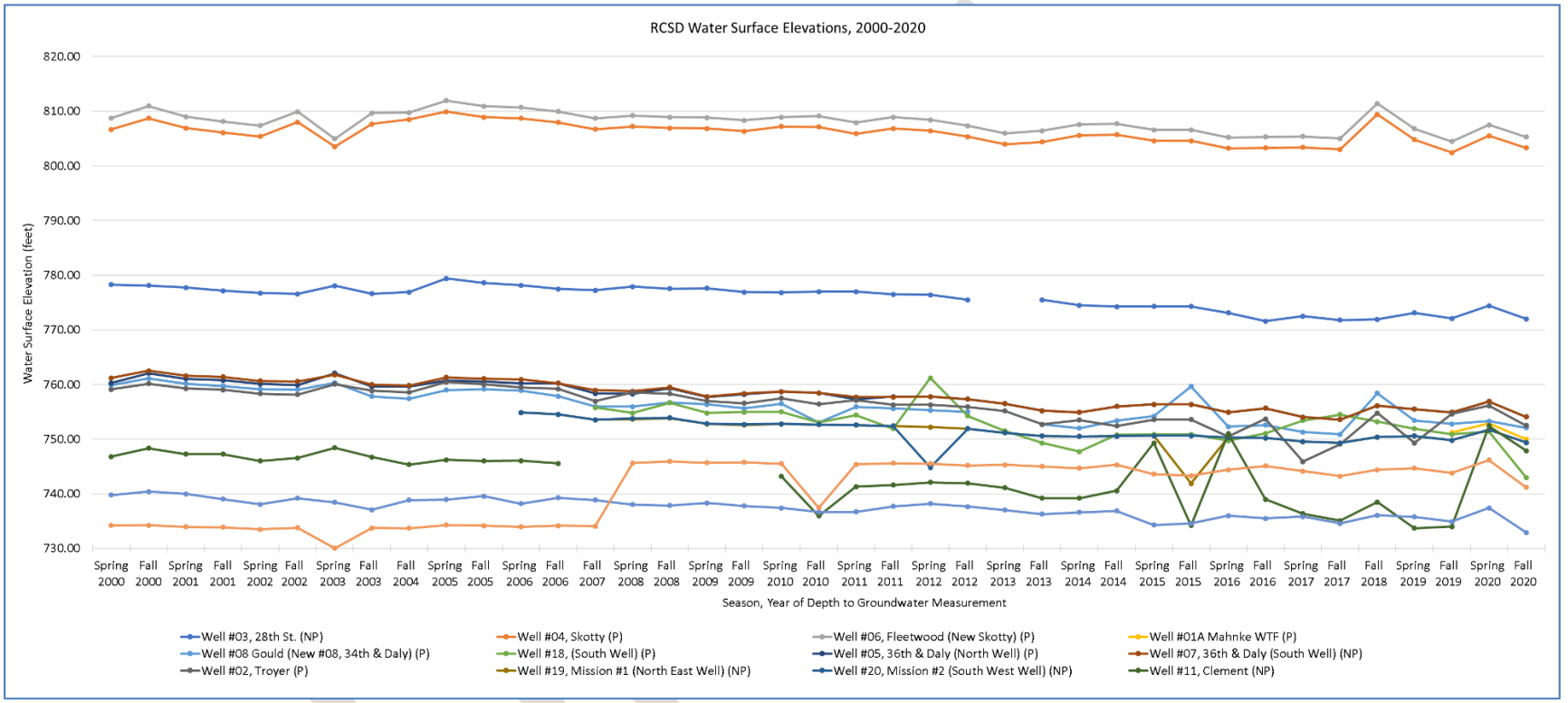
The Riverside Basin is adjudicated as described previously. An adjudicated water right has perhaps the most substantial indicia of reliability of any water right that currently exists in California. An adjudicated right is based upon long-term studies whose purpose it is to protect the long-term functionality of the water source. These rights are coordinated in an established

and binding manner with all the other users of the basin and are overseen by a Watermaster which has the authority to mandate and proscribe activities whose purpose is to protect the water source and maximize its long-term beneficial use.

RCSD's ability to pump water in an amount necessary to meet customer demands is sanctioned and protected by the aforementioned Judgment. Groundwater replenishment by Western is required if the annual extractions exceed the amount allowed by the Judgment. The Western-San Bernardino Watermaster has documented in its *Annual Report for Calendar Year 2020*, "during the five-year period 2015 through 2019, Plaintiffs did not exceed the allowable extractions and that Western [Municipal Water District] credits exceed obligations and therefore is not required to provide replenishment (WSBW, p. iii)." To date, replenishment has not been required. Because of certain constraints on supply, such as water quality discussed further in Chapter 7, the sufficiency of groundwater pumped by RCSD has been a matter more of cost than of physical supply.

As part of the annual *Cooperative Well Measuring Program,* the District provides the Watermaster its data from well measurements taken in the fall and spring that includes depth to water so that the water surface elevation can be measured. The first Cooperative Well Measuring Report was for Spring of 1964 as part of the adjudication court filings. The Fall 2020 report shown in **Chart 6-2** (next page) groundwater surface elevations in District wells beginning in June of 2000 through Fall 2020 (WSBW(b), Jan. 18, 2021). Two readings are taken each year, one in the spring when groundwater tends to rise from winter rains and one in the fall when groundwater tends to be lower after a dry summer and greater ground water extraction during the summer months. A higher water surface elevation indicates the water is closer to the ground surface. As shown in Chart 6-2, the water surface elevations in District wells stay generally constant over the past 20 years and have not changed by more than 20 feet between measurements. During the drought of 2013-2017, and specifically in the fall of 2015, water levels decreased in two non-potable wells by several feet (Wells 11 and 19) while the water surface elevation in Wells 2 and 8 actually rose after the summer of 2015. This data suggests the water surface elevations in District wells do not respond to changes in weather in the same way consistently and there are likely other factors to consider such as inflow from upgradient parts of the basin.

Chart 6-2 - RCSD Ground Water Surface Elevations in Active Wells, 2000-2020
(Source: Cooperative Well Measuring Program, Fall 2020 Report (WSBW(b))



(P) and (NP) indicate potable and non-potable.

Gaps indicate either missing data, the time before the well started, or the time after well stopped.

All readings from Spring 2018 were removed because water surface elevation equaled the ground surface elevations and therefore erroneous.

6.3 SURFACE WATER

RCSD does not use surface water as part of its supply, nor does it have plans to expand supply sources by using surface water.

The Santa Ana River (Reach 4) is the one major surface water body nearest the District service area. The river is managed in various ways by other entities and is not a part of the District's activities.

6.4 STORMWATER

Riverside County Flood Control and Water Conservation District has the authority to manage stormwater and divert flow for beneficial use, such as groundwater recharge. RCSD does not have this authority.

Communities are increasingly implementing opportunities to beneficially use stormwater for things like habitat, recharge, and irrigation. New developments and significant redevelopment projects are often required to capture all of the runoff on their site to provide treatment, slow the speed of runoff, and sometimes facilitate infiltration and recharge. RCSD welcomes the use of stormwater capture systems developed by other parties.

6.5 WASTEWATER AND RECYCLED WATER

RCSD is the responsible agency for collecting and conveying the municipal wastewater generated within its service area. RCSD does not use recycled water nor has plans to do so in the future. All wastewater in the District is sent to the following wastewater treatment plant:

- City of Riverside Regional Water Quality Control Plant (RWQCP) located at 5950 Acorn Street, Riverside, CA 92504.

The RWQCP's National Pollutant Discharge Elimination System (NPDES) Permit limits the concentration of TDS in treated effluent that is discharged to the Santa Ana River to be at or less than 650 mg/L (milligrams per liter). Currently, the District's TDS exceeds this limit and is delivering wastewater to the City with a TDS concentration averaging 720 mg/L. The City has

taken certain actions to require the District to reduce the level of TDS in the wastewater sent to RWQCP (DM 2021-18).

6.5.1 Recycled Water Coordination

Recycled water is currently produced and distributed from the RWQCP for beneficial use in the City of Riverside, which is outside of the District boundary (see **Figure 6-2 – Wastewater Treatment and Discharge**). RCSD is entitled to the recycled water produced from its share of wastewater flows delivered to the RWQCP, less any plant losses and the District's proportionate share of any discharge obligation to the Santa Ana River pursuant to the 1969 Judgment. RCSD currently does not use or distribute recycled water. The District has investigated the potential for providing recycled water generated by the RWQCP within its service area (K&S(a)). Because the RWQCP is located downgradient and across the Santa Ana River from the District, the infrastructure that would be required to move and deliver recycled water to the District where it can be best put to use has been determined to be cost-prohibitive. Therefore, the availability of recycled water to RCSD without substantial outside funding and logistical support is not anticipated over the next 25 years.

6.5.2 Wastewater Collection, Treatment, and Disposal

RCSD's wastewater system consists of collection and trunk sewer pipelines, lift stations and force mains. All wastewater from the District is sent to the City of Riverside RWQCP, which is operated by the City of Riverside Public Utilities and located outside of the District boundary. The District through a series of agreements with the City of Riverside has 3.055 MGD of capacity rights in the treatment facilities. The District is responsible for approximately 68 miles of gravity sewer pipelines and six wastewater lift stations each with associated force mains. The District is currently preparing an update to its *2015 Wastewater Facilities Master Plan* by early 2022.

The RWQCP provides preliminary, primary, secondary, and tertiary treatment and meets all Title 22 requirements for recycled water. It has a rated capacity of 46 MGD. Treated effluent from RWQCP is discharged to the Santa Ana River or distributed for reuse as described above. In CY2020, the District sent approximately 1,900 AF (1.7 MGD) to the RWQCP as shown in **Submittal Table 6-2.**

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area in 2020						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2020 service area covered by wastewater collection system *(optional)*					
	Percentage of 2020 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
Rubidoux Community Services District	Metered	1,900	City of Riverside	Regional Water Quality Control Plant	No	No
Total Wastewater Collected from Service Area in 2020:		1,900				
**** Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3* **.**						
NOTES: Volume in AF. From RCSD records.						

No wastewater is treated or disposed of within the District's service area, therefore the District will not complete DWR Submittal Table 6-3 – Wastewater Treatment and Discharge Within Service Area in 2020.

6.5.3 Recycled Water System

RCSD does not provide a recycled water system at this time. Recycled water is not used and is not planned for use within the District's service area, therefore the District will not complete DWR Submittal Table 6-4 – Recycled Water Direct Beneficial Uses Within Service Area.

6.5.4 Potential, Current, and Projected Recycled Water Uses

As described previously, the potential for recycled water being distributed by RCSD without substantial outside funding and logistical support is very low and not anticipated to occur over the 20-year planning horizon. Recycled water was not used in 2015 nor projected for use in

2020, therefore the District will not complete DWR Submittal Table 6-5 – 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual.

6.5.5 Actions to Encourage and Optimize Future Recycled Water Use

Recycled water could offset potable water currently being used for irrigation, or potable water supplies planned for irrigation, thus freeing up potable supplies for the District. RCSD is entitled to its share of flows to the RWQCP, less any plant losses and the District's proportionate share of any discharge obligation to the Santa Ana River.. However, RCSD has investigated the feasibility of providing recycled water to its customers and determined that implementation of such actions, at this time, is cost prohibitive, given the high estimated project costs and high unit cost of recycled water when compared to the District's current unit cost of potable and non-potable groundwater (K&S(a)). Federal, state, and local funding, if available, could offset the cost incurred during project construction which typically makes the project cost prohibitive. Obtaining funding can also help build community support for a project because it results in reduced taxpayer contribution. The District does not plan to expand recycled water use in the future, therefore the District will not complete DWR Submittal Table 6-6 – Methods to Expand Future Recycled Water Use.

6.6 DESALINATED WATER OPPORTUNITIES

RCSD does not currently desalinate its water supplies as part of its treatment processes (i.e., remove salts), nor does the District have plans currently to provide or partner on desalination facilities. The proposed Water Master Plan update will explore this issue and may propose desalination facilities on its local well supply to reduce the TDS loading in its wastewater. This master plan update is anticipated by 2022.

6.7 WATER EXCHANGES OR TRANSFERS

RCSD has an agreement to transfer water to JCSD and in-turn purchase water from JCSD if needed. The District has no other exchange or transfer programs. The District does plan to purchase imported water supplies from Western as described in Section 6.1, but this is not considered an exchange or transfer. The District does maintain emergency interties, which are addressed in Chapter 7.

6.8 FUTURE WATER SUPPLY PROJECTS

Expected future water supply projects or programs that will have a quantifiable increase in water supply to RCSD and can reasonably be expected to be implemented within the 20-year timeframe of the UWMP are summarized in **Submittal Table 6-7** (next page). The District's current project to add treatment systems is not shown in Submittal Table 6-7 because it will not result in additional supply. Narrative descriptions of each project (or group of projects) follow in timeline order after the table. The District is currently undertaking an update to its *2015 Water Facilities Master Plan*, which is expected by 2022; therefore, these projects may change as a result of that updated analysis.

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs

☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
	Provide page location of narrative in the UWMP

Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Supplier* *This may be a range*
	Drop Down List (y/n)	*If Yes, Supplier Name*				
Add additional rows as needed						
Well Field #1 & Expansion of Thompson WTP.	No		New wells 21, 22, 23, and 24; expansion of Thompson WTP to 7500 gpm.	2030	All Year Types	4,840
Well Field #2 and Nitrate Facility #1	No		New wells 26 and 28 with 3,000 gpm (4.3 MGD) treatment facility.	1,500 gpm by 2030 and 3,000 gpm by 2040	All Year Types	1,210 - 2420
Well Field #3 and Nitrate Facility #2	No		New wells 29 and 30 with 3,000 gpm (4.3 MGD) treatment facility.	1,500 gpm by 2040 and 3,000 gpm by 2050	All Year Types	1,210-2,420
RPU Connection	Yes	Western Municipal Water District and City of Riverside Public Utilities (RPU)	Connection to Riverside Public Utilities system through planned Mission Ave. Bridge Project for potable imported water.	2025	All Year Types	1,200 - 2,000

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

NOTES: Units in acre-feet (AF). Supply volume assumes pump run time of 50%.

- RPU Connection Project.

  By 2025, the District plans to finalize agreements with Western to purchase imported potable water supplies (i.e., State Water Project water supplied to Western by Metropolitan) that would then be wheeled through City of Riverside's distribution system (pending final agreements). Connection to the District would be via the forthcoming Mission Avenue Bridge Project. The County of Riverside Transportation Department is undertaking the Mission Avenue Bridge Project in cooperation with the Cities of Riverside and Jurupa Valley to replace the existing Mission Boulevard Bridge over the Santa Ana River by 2025 and expand it to approximately 88 feet wide and 1,100 feet long and include space for additional pipelines. The purpose of the District's RPU Connection Project is to blend imported water that has lower TDS concentrations with the District's water that has higher TDS concentrations so that the District's wastewater delivered to RWQCP meets the TDS threshold concentration of 650 mg/L. Anticipated demand for imported water is approximately 1,200 AFY to 2,000 AFY at buildout. Because Western has characterized imported water supplies from Metropolitan to be reliable in normal, single-dry, and multiple-dry years (WMWD(a)), this supply is assumed to be available to RCSD in normal, single-dry, and multiple-dry years.

- Well Field #1 and Expansion of Thompson Water Treatment Plant.

  According to the District's *2015 Water Facilities Master Plan,* Well Field #1 may be located between 34th Street and the 60 Freeway near the Santa Ana River and would consist of future Wells 21, 22, 23, and 24 by approximately 2030 (p. V-6). These wells would convey to the District's Mahnke Manganese Treatment Facility and Thompson Water Treatment Facility prior to distribution. Each well would have a pumping capacity of 1,500 gpm each, which translates to 4,840 AFY assuming 50% well run time for four wells. This supply would be available in normal, single-dry, and multiple-dry years. The Thompson Water Treatment Plant would be expanded from 5,000 gpm to 7,500 gpm to treat water produced from not only Wells 17 and 18 but also three new wells from Well Field #1.

- Well Field #2 and Nitrate Facility #1.

  According to the District's *2015 Water Facilities Master Plan,* Well Field #2 may be located between Capary Road and Mission Boulevard near the Santa Ana River and would consist of future Wells 26 and 28. The first well is expected by 2030 at 1,500 gpm (1,210 AFY) and the second well by 2040 for another 1,500 gpm (1,210 AFY) (p. V-6). These wells would convey to a new nitrate treatment facility operating at 3,000 gpm (4.3 MGD) to accommodate Wells 26 and 28 (ibid, p. V-8). This supply would be available in normal, single-dry, and multiple-dry years.

- Well Field #3 and Nitrate Facility #2.

  According to the District's *2015 Water Facilities Master Plan,* Well Field #3 may be located southerly of Capary Road near the Santa Ana River and will consist of Wells 29 and 30 (p. V-6). These wells would convey water to a second nitrate treatment plant operating at 3,000 gpm facility to accommodate Wells 29 and 30. The first well is expected to come online by 2040 at 1,500 gpm (1,210 AFY) and the second well by 2050 at 1,500 gpm (1,210 AFY). This supply would be available in normal, single-dry, and multiple-dry years.

6.9 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

The water supplies utilized by the District in CY 2020 are provided in **Submittal Table 6-8.** Potable and non-potable supplies are shown, and each come from the same groundwater basin.

Submittal Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2020		
Drop down list May use each category multiple times.These are the only water supply categories that will be recognized by the WUEdata online submittal tool		Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
Add additional rows as needed				
Groundwater (not desalinated)	Riverside South Basin (No. 8-02.03) for potable use.	4,770	Drinking Water	
Groundwater (not desalinated)	Riverside South Basin (No. 8-02.03) for non-potable use.	417	Other Non-Potable Water	
	Total	5,187		0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*				
NOTES: Volume in AF. From RCSD Annual Summary CY2020.				

The District's planned sources of water supplies are provided in **Submittal Table 6-9**, which are based on information reasonably available to RCSD during preparation of this UWMP.

Submittal Table 6-9 Retail: Water Supplies — Projected						
Water Supply	Additional Detail on Water Supply	Projected Water Supply * Report To the Extent Practicable				
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		**2025** Reasonably Available Volume	**2030** Reasonably Available Volume	**2035** Reasonably Available Volume	**2040** Reasonably Available Volume	**2045** (opt) Reasonably Available Volume
Add additional rows as needed						
Groundwater (not desalinated)	Riverside South Basin (No. 8-02.03) for potable use.	6,865	9,309	10,551	10,800	10,800
Groundwater (not desalinated)	Riverside South Basin (No. 8-02.03) New Well Field #1	0	4,840	4,840	4,840	4,840
Groundwater (not desalinated)	Riverside South Basin (No. 8-02.03) New Well Field #2	0	1,210	1,210	1,210	1,210
Groundwater (not desalinated)	Riverside South Basin (No. 8-02.03) New Well Field #3	0	0	0	1,210	1,210
Purchased or Imported Water	RPU Connection for potable use.	1,200	2,000	2,000	2,000	2,000
Groundwater (not desalinated)	Riverside South Basin (No. 8-02.03) for **non-potable use.**	570	781	1,070	1,070	1,070
	Total	8,635	18,140	19,671	21,130	21,130
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES: Volumes in acre-feet (AF). Build-out year assumed to be 2036. Supply volume assumes pump run time of 50%.						

The projected potable water supplies in Submittal Table 6-9 include the annual sale of potable water to JCSD, potable supply projects in Submittal Table 6-7, and utilization of the District's existing active wells. Imported water supplied from the "RPU Connection" project is assumed to be reliable in average and drought years (see Section 6.10.1, below). The non-potable water supply is expected to grow steadily over the next 20 years. The supply amounts shown in Submittal Table 6-9 are within the existing pumping capacity of the District's non-potable wells.

6.10 SPECIAL CONDITIONS

6.10.1 Climate Change Effects

Beginning in the 2020 UWMP, the Water Code requires the District to consider the impacts of climate change in its water supply projections, which are shown in Submittal Table 6-9. Considerations for climate change impacts began with using the *Climate Change Vulnerability Screening Form for Urban Water Management Planning* located in the appendices to the DWR Guidebook for 2020 UWMPs (March 2021). Pursuant to Water Code, the District's planning for climate change impacts anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as described below.

Western's Technical Memorandum dated April 22, 2021 on climate change effects in its service area was used to apply water supply change factors to projected supplies in Submittal Table 6-9 (WMWD(a), p. 11; Appendix H). The water supply factors developed by Western and used herein are provided in **Table 6B**, below. The factors demonstrate Western's findings:

> *For normal years, precipitation and natural recharge are initially projected to decrease during the first decade before stabilizing during the second decade. The maximum projected range of decrease for normal year values is 1.7 percent. However, the projections show that droughts will initially be less severe from the perspective of local rainfall and recharge for the single dry year with increases of up to 1 percent. Recharge during 5-year droughts is projected to decrease by up to 2.3 percent by 2045*. (WMWD(a), p. 11)

Table 6B – Water Supply Climate Change Factors for Precipitation and Natural Recharge

Beginning Year	Normal Year	Single-Dry Year	Five-Year Dry Period
2020[1]	100.0%	100.0%	100.0%
2025	99.1%	100.5%	99.5%
2030	98.3%	101.0%	98.9%
2035	98.5%	100.8%	98.5%
2040	98.7%	100.7%	98.1%
2045	98.9%	100.5%	97.7%

Source: Western Municipal Water District, *Technical Memorandum: Western Drought Contingency Plan – Climate Change Vulnerability Assessment*, April 22, 2021 (WMWD(a), p. 11; Appendix H).

(1) 2020 is baseline year.

To account for the potential effects of climate change to water supplies, and the uncertainty therein, RCSD has conservatively applied the normal year factors from Western's factors for precipitation and natural recharge in Table 6B to the groundwater supply projections of Submittal Table 6-9 beginning in 2025 through 2045, even though the District's groundwater supply has not been responsive to drought in the past. The results are shown below in **Table 6C**.

Table 6C – Potential Effect of Climate Change to Normal Year Projected Supplies

	2025	2030	2035	2040	2045
TOTAL SUPPLY From Table 6-9 (AF)[1]	8,635	18,140	19,671	21,130	21,130
Water Supply Climate Change Factor[2]	99.1%	98.3%	98.5%	98.7%	98.9%
TOTAL SUPPLY with Climate Change Factors (AF)	8,557	17,832	19,376	20,855	20,898
Potential Decrease in Total Supply from Climate Change (AF)	78	308	295	275	232

Notes: Units in acre-feet (AF).
(1) From Table 6-9.
(2) Climate change factors from WMWD(a).

6.10.2 Regulatory Conditions and Project Development

Constraints to the District's water supplies are discussed in Chapter 7.1.2. In summary, additional regulations for yet-to-be determined emerging contaminants in water are expected to continue influencing existing and future water supplies to some degree. Said effects could include how future well sites are located and what wellhead treatment(s) and/or blending are needed and subsequent costs to do so. The District expects to be able to provide the necessary treatment(s) for the next 20 years so that the water continues to meet federal and state standards.

6.10.3 Other Locally Applicable Criteria

As discussed previously in Chapter 6.2, groundwater production in adjudicated basins is not unlimited. Although production from the basin is currently well below the base right and well below the trigger for requiring replenishment water from Western, changes to the terms of the adjudication could affect how the District characterizes this supply source. This would be an example of other locally applicable criteria that is entirely outside of the District's control but could dictate to some degree how much can be produced from the Riverside South Basin. This constraint is discussed further in Chapter 7.1.2.

As discussed previously in Chapter 6.8, the imported water supply that is expected to become available to the District in the future is assumed to be reliable in normal, single-dry, and multiple-dry years. However, the District remains prepared to fully utilize its local supplies and treatment systems to meet demand if imported supplies are decreased or temporarily suspended.

6.11 ENERGY USE

Energy is required to operate a water supply system, including the energy needed to pump, treat, store, and deliver water to the end consumer. Beginning in 2020, UWMPs must report estimates of the energy used for its water distribution system that is within its operational control (Water Code Section 10631.2(a)). RCSD obtained electricity usage data from its electricity supplier, Southern California Edison for calendar year 2020 for each electrical meter located at each of the District's facilities. This includes RCSD water wells, booster stations, reservoirs, treatment systems, and pressure reducing stations. Total electricity used for the water distribution system in CY 2020 is provide in **Table O-1B**. This includes 2,357,910 kWh for potable wells and booster stations, 169,091 kWh for non-potable wells, 576,902 kWh for water treatment plants and 1,570 kWh generated by solar power at reservoirs.[3]

Each of the District's four active reservoirs are solar powered with a total of five solar panels. Each solar panel has a peak power of 160 watts (W) and a battery backup. If the battery voltage drops too low before the sun rises, then electricity is provided by Edison. Assuming

[3] A kilowatt-hour (kWh) equals the amount of energy used by keeping a 1,000-watt appliance running for one hour.

average peak sun of 5.38 hours per day for 365 days, approximately 1,570 kWh can be generated and used by the solar tanks each year (www.turbinegenerator.org).

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

Enter Start Date for Reporting Period	1/1/2020	**Urban Water Supplier Operational Control**		
End Date	12/30/2020			
☐ Is upstream embedded in the values reported?		**Sum of All Water Management Processes**	**Non-Consequential Hydropower**	
Water Volume Units Used	*AF*	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (volume unit)		*5,187*	*0*	*5,187*
Energy Consumed (kWh)		*3,105,473*	*0*	*3,105,473*
Energy Intensity (kWh/volume)		*598.7*	*0.0*	*598.7*

Quantity of Self-Generated Renewable Energy

1,570 kWh

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

Combination of Estimates and Metered Data

Data Quality Narrative:

CY2020 metered electricity use obtained from Southern California Edison in spring 2021. Renewable energy is estimated from solar panel specifications and average peak sun of 5.38 hours/day.

Narrative:

Edison meter data includes active potable wells, non-potable wells, water treatment facilities, and booster stations. District also has 1 natural gas generator and 3 potable wells have diesel generators. All 4 active reservoirs are solar powered with a total of 5 solar panels; each with battery backup and then Edison service when voltage drops too low before sun rises.

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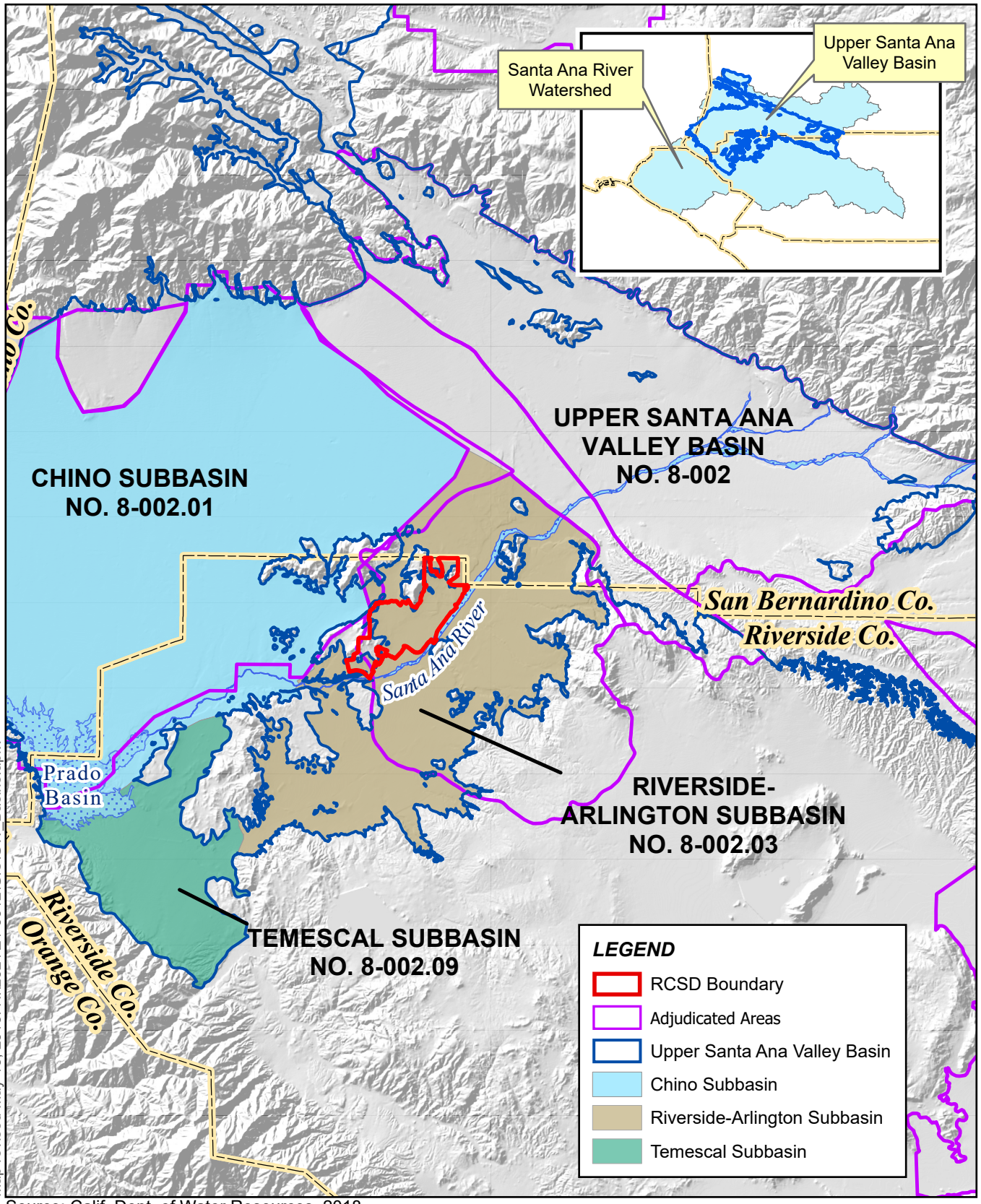
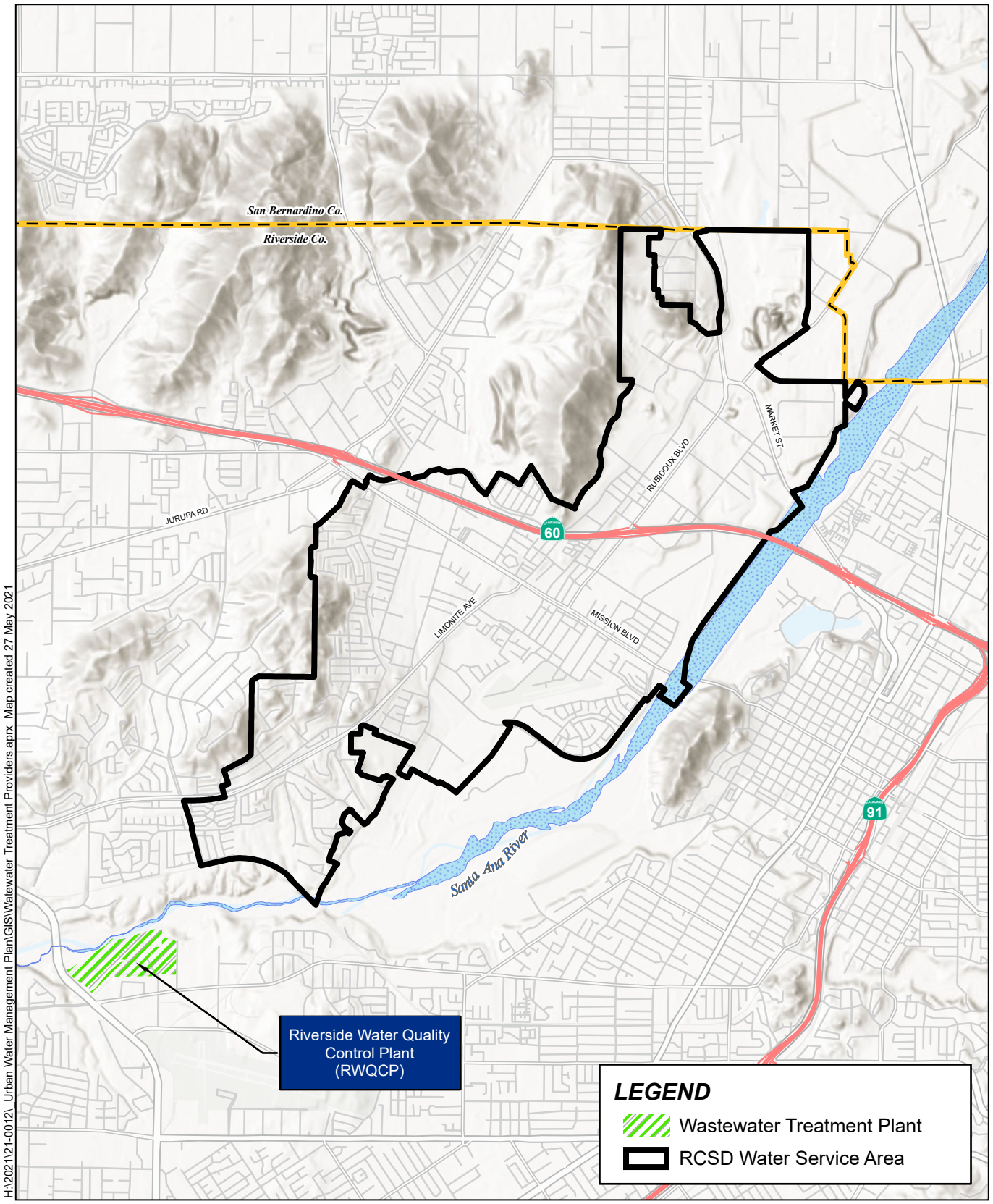


Source: Calif. Dept. of Water Resources, 2018.

Figure 6-1 Groundwater Basins
RCSD Urban Water Management Plan 2020



H:\2021\21-0012_Urban Water Management Plan\GIS\Watewater Treatment Providers.aprx Map created 27 May 2021

Sources: RCSD 2015; San Bernardino Co. GIS, 2021; ESRI, 2021.

Figure 6-2 Wastewater Treatment and Discharge

RCSD Urban Water Management Plan 2020

0 2,000 4,000 6,000 Feet

ALBERT A. WEBB ASSOCIATES

CHAPTER 7 WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

This chapter describes RCSD's ability to meet the water needs of its customers with its water supplies under varying conditions. Assessing water service reliability takes into consideration a number of factors, including plausible changes in supplies, regulatory and legal constraints, climate change, and expected growth, among others. This chapter also includes a near-term assessment of a severe drought period lasting for the next five consecutive years from 2021 to 2025.

7.1 WATER SERVICE RELIABILITY ASSESSMENT

Pursuant to Water Code, this reliability assessment will compare the total water supply sources available to the District with the long-term projected water use over the next 20 years, in five-year increments during normal, single-dry, and multiple (five consecutive) dry water years. This assessment marries the findings in Chapter 4 – Water Use Characterization and Chapter 6 – Water Supply Characterization to help direct management actions for the future.

7.1.1 Summary of Water Use and Water Supply

As described in Chapter 4, past water use from 2015 to 2020 indicates residential customers are the dominate consumer of water at approximately 70% of annual water use on average, followed by commercial, institutional, and industrial customers consuming approximately 20% of total water use, with the remainder being attributable to dedicated irrigation and construction uses, and system losses. When RCSD was able to sell water to its neighboring agency JCSD up until the end of 2017, those sales could make up roughly 30% of the District's total annual water demands. Potable water loss has fluctuated but is on the decline as improvements are made to the system (see Table 4A). Current water use shows metered water deliveries in CY 2020 consisted of 4,770 AF of potable water and 417 AF of non-potable water for a total of 5,187 AF (Table 4-1). This is an increase from the total water use in 2019 but still lower than 2018 consumption. Residential customers were the majority consumer. The amount of water lost each year due to leaks, theft, or metering inaccuracies has been decreasing since 2017 with CY 2020 losses at just 91 AF. Future water use is projected to increase gradually for each use type from 2025 to 2036 to reach ultimate demand of 10,800 AFY for potable water, 2,000 AFY for sales of potable water to JCSD, and 1,070 AFY for non-

potable water. Buildout of the District is projected to be reached by 2036. Refer to Submittal Tables 4-1, 4-2, 4-3, and 4-4 for current (2020) and future (2025-2045) water use, as well as water losses.

As described in Chapter 6, RCSD relies on groundwater for its water supply, which has been historically reliable and sufficient to meet demands; however, use of the water for potable purposes requires all wells to have treatment systems. The District relies on the Riverside South Basin located in the Riverside-Arlington Subbasin of the Upper Santa Ana River Basin. The basin is adjudicated by two court Judgments, one of which appointed the Western-San Bernardino Watermaster to administer and enforce all instruction and orders of the court (Appendix K). The Judgment establishes an aggregate pumping limit criteria for the Riverside South Basin; for example, if the total pumping in any one year from all producers exceeds the limit, then Western must provide replenishment water the following year on behalf of all producers in the basin, the costs of which may be shared by all producers. To date, replenishment water has not been needed. Historic aggregate annual production volumes are shown in Chart 6-1. The District operates potable and non-potable wells, treatment facilities, booster stations, four storage reservoirs, and approximately 70 miles of water pipelines.

Past groundwater production by the District has increased over the past 40 years from 1,900 AFY in 1970 to a high of 7,801 AFY in 2015 to meet customer demands (Table 6A). Current groundwater production in CY 2020 is 4,770 AF of potable water and 417 AF of non-potable water (Submittal Table 6-1). Future groundwater production by the District will have the capability to increase with the addition of several new well fields and treatment systems; in addition, the District plans to purchase imported water supplies within the next five years to dilute the concentration of TDS in wastewater (Submittal Table 6-7). The District does not currently use desalinated water nor has intentions to use surface water, stormwater, or recycled water for water supplies. The Riverside South Basin has proven to be a stable and reliable water source, even when environmental conditions are exceptionally dry (see Chart 6-2 for recorded RCSD groundwater surface elevations). Refer to Submittal Table 6-7 for planned supply projects, Submittal Table 6-8 for current (2020) supplies, and Submittal Table 6-9 for projected supplies through 2045.

7.1.2 Constraints to Water Supply

Four factors can affect the availability of groundwater for the District: sufficient production capacity (e.g., wells, pumps, pipes, etc.); sustainability of the groundwater to meet pumping demand on a renewable basis; quality of the water; and outages resulting from catastrophic events including earthquake, fire, and power loss.

Production Capacity Constraints

The District has a total of six potable wells with a total potential pumping capacity of 8,850 gpm. As of 2020, four wells are used to meet demands with a total potential pumping capacity 6,250 gpm; a fifth well is available if needed with 1,100 gpm pumping capacity. Within a year, the sixth potable well which is currently offline due to clogging will be usable again with 1,500 gpm pumping capacity.

The District has a total of seven non-potable wells with a total pumping capacity of 2,300 gpm; however, one well with 400 gpm will be staying inactive. As of 2020, three non-potable wells are used to meet demands with a total pumping capacity of 1,000 gpm. The other three wells with a total of 900 gpm are currently not connected to the system but could be reconnected in the future for non-potable supply.

The current production capacities do not constrain the potable or non-potable water supply. Current average day demand is approximately 13 AF per day, which would require approximately 3,100 gpm to produce. Because the District has a potable pumping capacity of more than twice that (i.e., 6,250 gpm), there is currently no constraint on water supply from insufficient pumping capacity. It has been recommended for the future however to increase production capacity to establish more reserve capacity (K&S, p. II-9). The District is undertaking an update to its 2015 Water Facilities Master Plan which is expected by 2022 to identify improvements to the system to ensure the District meets recommended design criteria.

Water Quality Constraints

The District's water supply could be constrained in the event wells are shut down because of contaminants appearing at concentrations exceeding the drinking water standards. The District maintains treatment systems to specifically lower the concentrations of nitrate, manganese,

1,2,3-TCP, and perchlorate. The Anita B. Smith Water Treatment Plant was constructed in 1995 to reduce the concentration of nitrate in water produced by Wells 4 and 6. Constructed in 1996, the Mahnke Water Treatment Plant reduces the concentration of manganese in water produced by Well 8, however this plant is not currently in use to meet potable demands. The third treatment plant operated by the District, the Thompson Water Treatment Plant came online in 2013 to reduce manganese from water supplied by Wells 17 (now decommissioned) and 18. The District also blends water from different wells in order to deliver water that meets the drinking water standards.

The District is currently adding treatment systems to reduce PFOA and PFOS (part of the PFAS family of chemicals) to below the notification levels. Notification levels are nonregulatory, precautionary health-based measures for concentrations in drinking water that warrant notification and further monitoring and assessment. Public water systems are encouraged to test their water for contaminants with notification levels, and in some circumstances may be ordered by the state to test. If the systems do test, they are required to report exceedances to their governing boards and the SWRCB and are urged to report this information to customers via the Consumer Confidence Report. The RCSD 2019 Consumer Confidence Report (CCR) reported average concentrations of PFOA and PFOS at 10.98 parts-per-trillion (ppt) and 10.13 (ppt), respectively, which exceed the current notification levels for PFOA and PFOS which are 5.1 ppt and 6.5 ppt, respectively. The District's most recent CCR describing the results of water quality testing performed in 2019 is provided in **Appendix L.**

The Riverside South Basin has higher concentrations of TDS than typical of water imported from Northern California. As reported in the District's CCRs published from 2016 to 2019, TDS concentrations in the water supply delivered to customers have averaged 505 milligrams per liter (mg/L) with a range of detection from 460 mg/L to 550 mg/L. TDS is regulated by a secondary drinking water standard, meaning it affects the taste, odor, or appearance of drinking water but consuming it does not affect human health at the standards level. The secondary drinking water standard for TDS is 1,000 mg/L.

Although all of the District's potable well supplies require some level of treatment prior to distribution, and all future potable wells are expected to require treatment as well, the water quality of the District's well water has not constrained the quantity of water available to RCSD

in the past. With the additional treatment systems being installed currently and ongoing testing, the District does not expect water quality to constrain supplies in the future.

Water Supply Constraints

The District's groundwater supply could be constrained in the event of declining groundwater levels. In that case, the cost of production would increase to pump at deeper depths or at new locations or purchase supplies from other sources. However, this is unlikely according to the groundwater data submitted from the District and verified by the Watermaster. As of 2019, total extractions from the Riverside South Basin area were 26,500 AF, which is compared to total extractions in the base period of 1959-1963 at 29,633 AF. Accumulated credits as of 2019 totaled 719,796 AF and accumulated obligations totaled 175,575 AF for a net credit of 544,221 AF (to Western) as of 2019 (WSBW(c), p. 167). Because aggregate production in the adjudicated area remains below the base right, and credits available to offset obligations are roughly ten-times the base right, ample supply in the basin is expected. Further, records show relatively stable groundwater elevations for RCSD wells over the past 20 years. Refer to Chart 6-1 in Chapter 6 for recorded annual aggregate production volumes and refer to Chart 6-2 for recorded RCSD groundwater surface elevations.

As described in Section 6.8, the District is pursuing an imported water supply via Western. Imported water supplies may be constrained due to regulatory, legal, biological, and structural constraints on the State Water Project supplies from the Sacramento/San Joaquin Delta in Northern California. The imported water available from Western that can be retailed to RCSD is provided by Metropolitan. To address reliability of imported water supplies for its retail agencies, which includes RCSD, Western prepared a Technical Memorandum describing the results of its Climate Change Vulnerability Assessment (dated April 22, 2021) (Appendix H). It states, "The current (November 2020 draft) of Metropolitan's 2020 UWMP Drought Risk Assessment indicates that no service reliability concerns are projected for imported water during normal and drought periods before 2045. For purposes of the UWMP, imported water supplies to Western can be assumed to be unchanged during normal years, single dry years, and five-year droughts" (p. 3). Therefore, RCSD will also assume that projected imported water supplies from Western will be available in normal and drought years.

Catastrophic Events and Interties

Catastrophic events including electrical outages, earthquakes, fire, or any other natural disaster could constrain water supplies. In the event of such an emergency, the District is prepared to purchase emergency water supplies from neighboring agencies over the time required to get the District's system functioning again.

The District and JCSD share two interties and a mutual aid agreement that can be activated in an emergency to flow in either direction (i.e., RCSD Intertie South and Jewel Street Intertie). Currently, West Valley and RCSD are actively working together to develop a connection. The District is actively working with the City of Riverside to make a connection to the City's distribution system in order to receive imported water supplies from Western. In an emergency, this may be another option to satisfy demands until the repairs can be made.

The District has one natural gas portable generator, diesel backup generators at three potable wells, backup generators at the Mahnke, Thompson, and Smith Water Treatment Plants to provide emergency water in the event of a widespread power failure. The non-potable irrigation wells do not have backup power onsite. As of March 2021, the District secured grant funding to purchase fixed generators at two potable wells and a booster station for the purpose of increased system reliability and mitigate power disruptions to service (DM 2021-17).

In 2020, the District retained Harper & Associates Engineering, Inc. to conduct corrosion investigations and seismic, structural, and safety engineering evaluations of the District's four active water storage tanks (HAE(a), HAE(b), HAE(c), HAE(d)). The results of the seismic analyses portion of the reports are provided in Chapter 8 under the seismic assessment and mitigation discussion. These reports provide the District action items they can undertake to improve system reliability in an earthquake emergency.

7.1.3 Reliability by Type of Year

RCSD has had a reliable water supply to meet demands during normal, single-dry, and multiple-dry years and to-date has not experienced a water shortage. Further, the District had sufficient water supplies during the statewide drought from 2012 to 2017. The Water Code requires each water supplier to determine three types of years and how much supply was

available for each: normal (or average),[1] single dry,[2] and multiple dry years for five years.[3] As shown in **Submittal Table 7-1**, the District expects all of its average supply to be available regardless of the year type, including future imported water supplies.

Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)			
Year Type	**Base Year** If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020	**Available Supplies if Year Type Repeats**	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available *	**% of Average Supply**
Average Year	2010		100%
Single-Dry Year	2018		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%
Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3*			
NOTES: % average supply is 100% for both potable and non-potable supplies during the years shown.			

The selected base years were selected on rainfall data collected by Riverside County Flood Control and Water Conservation District from five stations scattered around western Riverside County (i.e., Riverside, Corona, Elsinore, Hemet/San Jacinto, and Perris/Moreno Valley). Each

[1] A year, or an averaged range of years, that most closely represents the average water supply available to the agency. The UWMP Act uses the term "normal".
[2] The single-dry year is the year that represents the lowest water supply available to the agency.
[3] The multiple dry year period that represents the lowest average water supply availability to the agency for a consecutive multiple year period (three years or more).

year, the Flood Control District determines whether that year was, on average, a very dry, dry, normal, wet, very wet, or record wet year by converting annual total rainfall as a percentage of normal, where normal is calculated as the average per station. Records from these stations range from 64 to 128 years of rainfall data, therefore it is considered robust. Flood Control's data as of fiscal year 2019/2020 suggests 2010 was considered a "normal" rainfall year for western Riverside County; 2018 was "very dry" year between two "wet" years (2017 and 2019); and 2012 to 2016 were five consecutive "dry" years (RCFC(a)).

A second version of Submittal Table 7-1 showing the hydrological conditions for imported water supplies was not prepared because according to Western and Metropolitan, imported water supplies will be reliable in all year types (WMWD(a), p. 3).

7.1.4 Normal Year Reliability

Normal Year. This condition represents the water supplies a supplier considers available during normal conditions.

Water use is described in Chapter 4 and projections of future water use during a normal year are provided in Submittal Table 4-3. RCSD water supplies are presented in Chapter 6 and water supply projections during a Normal Year are provided in Submittal Table 6-9. The Normal Year supply and demand projections are compared in **Submittal Table 7-2**, below**.**

Submittal Table 7-2 Retail: Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045 *(Opt)*
Supply totals *(autofill from Table 6-9)*	8,635	18,140	19,671	21,130	21,130
Demand totals *(autofill from Table 4-3)*	8,635	12,090	13,621	13,870	13,870
Difference	0	6,050	6,050	7,260	7,260

NOTES: Volume in acre-feet (AF). Includes potable and non-potable water in a normal year scenario with future supply projects from Table 6-7. Assumes pump run time of 50%.

As shown in Submittal Table 7-2, during an average rainfall year occurring between 2025 and 2045, sufficient water supplies will be available to meet demands to the year 2045.

The following assumptions have been made to estimate supply and demand during a normal year:

- Supply includes the future supply projects from Submittal Table 6-7, which are: (1) RPU Connection project beginning 2025 at 1,200 AFY growing to 2,000 AFY by 2030; (2) Well Field #1 Project beginning 2030 at 4,840 AFY; (3) Well Field #2 project beginning 2030 at 1,210 AFY; and Well Field #3 beginning 2040 at 1,210 AFY.

- Demands include annual growth with additional demands from the Agua Mansa Specific Plan (50 AFY) and Rio Vista Specific Plan (2,000 AFY) projects beginning in 2025 and 2030. Demand also includes sales of potable water to JCSD at 2,000 AFY beginning 2025 (this amount is held constant through 2045).

- Submittal Table 7-2 does not include potential effects of climate change.

Table 7A shows a comparison of climate-adjusted normal year water supplies and demands for the 20-year planning horizon to compare with the non-climate adjusted values in Submittal Table 7-2.

Table 7A: Comparison of Climate Change-Adjusted Normal Year Supply and Demand

	2025	2030	2035	2040	2045
TOTAL SUPPLY with Climate Change Factors (AF)[1]	8,557	17,832	19,376	20,855	20,898
TOTAL DEMANDS with Climate Change Factor (AF)[2]	8,687	12,235	13,866	14,203	14,300
Difference (AF)	-130	+5,597	+5,510	+6,652	+6,598

Notes: Units in acre-feet (AF).
(1) From Table 6C.
(2) From Table 4C.

The normal year climate change factors reflect modeling projections of increasing outdoor water demand and decreasing precipitation and recharge. As shown in Table 7A, comparing

the climate change-adjusted supply and demand projections in a normal year suggests sufficient supply will be available for the District with the addition of at least one of the new well fields listed in Submittal Table 6-7 (i.e., New Well Fields #1 and #2) slated for completion by 2030 and/or operating existing wells at an average pump run time greater than 50%. However, it should be noted that the demand factor was applied to all demands (indoor and outdoor), when only outdoor demands are expected to increase in response to climate change effects. If the new well fields are not included in total supplies beginning in 2030, then a small shortfall in supply is observed and in order to make supply equal demand in this scenario, future supplies would need to be 3-4% higher starting from around 2030, which can be met with the existing operating capacity of the wells.

7.1.5 Single Dry Year Reliability

Single Dry Year. The year that represents the lowest water supply available to the Supplier.

The District's Single Dry Year supply and demand comparisons are provided in **Submittal Table 7-3**, which show the expectation that water supply will meet expected demand through 2045. Although 2018 was a single-dry year, the District observed no decrease in its available supply, and customer demand actually rose approximately 10 percent from 2017 urban retail demand (which does not include demand from sales to JCSD).

Submittal Table 7-3 Retail: Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045 (Opt)
Supply totals*	8,635	18,140	19,671	21,130	21,130
Demand totals*	8,635	12,090	13,621	13,870	13,870
Difference	0	6,050	6,050	7,260	7,260

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

NOTES: Units in acre-feet (AF). Single dry year conditions of base year 2018 are assumed (approximately half the normal rainfall).

The following assumptions have been made to estimate supply and demand during a single dry year:

- There will be no decline in the non-potable and potable groundwater supplies from District wells as compared to a normal year supply.
- Imported water supplies from Western will be unchanged.
- There will be no decline in customer water use compared to a normal year.
- The District will prohibit water waste and encourage efficient use of water supplies.
- Customers will continue to voluntarily conserve water unless a water shortage condition occurs that would trigger the response actions listed in the Water Shortage Contingency Plan (located in Chapter 8, herein).
- Water losses are included in future potable water demands at 2% of annual demand.
- The potential effects of climate change during a single-dry year are shown in **Table 7B.**

Table 7B: Comparison of Climate Change-Adjusted Single-Dry Year Supply and Demand

	2025	2030	2035	2040	2045
Single-Dry Year Supply from Table 7-3 (AF))	8,635	18,140	19,671	21,130	21,130
Water Supply Climate Change Factors for Single Dry Year(1)	100.5%	101.0%	100.8%	100.7%	100.5%
Single-Dry Year Supply with Climate Change Factors (AF)	8,678	18,321	19,828	21,278	21,236
Single-Dry Year Demand from Table 7-3 (AF)	8,635	12,090	13,621	13,870	13,870
Water Demand Climate Change Factors for Single Dry Year(2)	100.6%	101.3%	101.9%	102.5%	103.2%
Single-Dry Year Demand with Climate Change Factors (AF)	8,687	12,247	13,880	14,217	14,314
Difference (AF)	**-9**	**6,074**	**5,949**	**7,061**	**6,922**

Notes: Units in acre-feet (AF).
(1) From Table 6B (WMWD(a)).

(2) From Table 4B (WMWD(a)).

Table 7B suggests that although climate models predict precipitation and natural recharge may increase during a single-dry year in 2025, the increase in outdoor water use due to higher temperatures may outpace that prediction. However, because the District cannot separate indoor from outdoor use, the assumption made in Tables 7A and 7B is that all water demand is being treated as outdoor demand and that indoor and outdoor demands will respond equally. Therefore, climate-change adjusted demands in these tables is likely overstated. With the addition of future supply, no shortfall is observed in Table 7B. To make up the shortfall without the future supply projects so that supply equals demand in this scenario, future supplies may need to be increased from 0.1% to 4% higher to account for potential increases in outdoor water demand and decreases in precipitation and natural recharge starting from around 2025 to 2045. The increases are within the normal operating capacities of the wells.

7.1.6 Multiple Dry Year Reliability

Five-Consecutive-Year Drought. The driest five-year historical sequence for the Supplier.

The District selected the five-year base period from 2012-2016 to represent conditions during a multiple dry year scenario. The District's Multiple Dry Year supply and demand comparisons are provided in **Submittal Table 7-4**. Because the District observed little to no decrease in its water supplies during the drought period of 2012-2016, supply and demand are consistent with normal year Submittal Table 7-2.

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	8,635	12,090	13,621	13,870	13,870
	Demand totals	8,635	12,090	13,621	13,870	13,870
	Difference	0	0	0	0	0
Second year	Supply totals	8,635	12,090	13,621	13,870	13,870
	Demand totals	8,635	12,090	13,621	13,870	13,870
	Difference	0	0	0	0	0
Third year	Supply totals	8,635	12,090	13,621	13,870	13,870
	Demand totals	8,635	12,090	13,621	13,870	13,870
	Difference	0	0	0	0	0
Fourth year	Supply totals	8,635	12,090	13,621	13,870	13,870
	Demand totals	8,635	12,090	13,621	13,870	13,870
	Difference	0	0	0	0	0
Fifth year	Supply totals	8,635	12,090	13,621	13,870	13,870
	Demand totals	8,635	12,090	13,621	13,870	13,870
	Difference	0	0	0	0	0
Sixth year *(optional)*	Supply totals	8,635	12,090	13,621	13,870	13,870
	Demand totals	8,635	12,090	13,621	13,870	13,870
	Difference	0	0	0	0	0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES: Units in acre-feet (AF).						

The following assumptions are made to estimate supply and demand during a consecutive five-year multiple dry year period (drought stages are described in detail in Chapter 8):

- There will be no decline of the non-potable and potable groundwater supplies from District wells as compared to a normal year supply.
- Imported water supplies from Western will be unchanged.
- There will be no decline in customer water use compared to a normal year.
- The District will prohibit water waste and encourage efficient use of water resources.
- Customers will continue to voluntarily conserve water unless a water shortage condition occurs that triggers shortage response actions from the Water Shortage Contingency Plan (located in Chapter 8, herein).
- Water losses are included in future potable water demands at 2% of annual demand.
- The potential effects of climate change to the multiple dry year supply and demand comparison are not embedded in Submittal Table 7-4. The potential climate change effects of decreasing precipitation and natural recharge and the effect of increasing outdoor water demand are reflected in Years 1-5 as shown below. By increasing supply or decreasing demand by approximately 0.3% in 2025, the potential shortfall is met. This can be accomplished with the District's existing well field.

	2025*	2030*	2035*	2040*	2045* (Opt)
Supply totals	8,592	17,940	19,376	20,729	20,644
Demand totals	8,618	12,235	13,866	14,203	14,286
Difference	(26)	5,705	5,510	6,526	6,358

7.1.7 Management Tools and Options for Reliability

As shown in the tables above, RCSD anticipates having adequate water supplies to meet future demands during normal, single-dry, and multiple-dry years through the 20-year planning period. This is mainly because of the reliability of the District's primary water source in the Riverside South Basin and the ability of customers to conserve when needed. Periodic drought has not affected the groundwater levels to the point where the District's water supply is reduced and requires demand management or supply augmentation. In the event of a significant water shortage, the District will utilize its existing tiered water rate structure to encourage water conservation by reducing the quantity use range of each tier.

RCSD will continue making efforts to maximize the use of local water resources and minimize the need to import water. District actions such as increased groundwater treatment systems, implementation of demand management measures to reduce losses and increase system efficiency are anticipated. Imported water supplies are necessary at this time to reduce TDS concentrations in sewage and meet wastewater discharge requirements.

Demand management measures implemented by RCSD over the past five years and planned for the next five years are outlined in Chapter 9 and are designed to help RCSD meet its future water use reduction targets. Although the District has achieved the 2020 water use target for water conservation pursuant to SB X7-7, it is understood that drought conditions are likely ongoing in the foreseeable future. And therefore, water conservation efforts are planned to continue and expand to optimize potable water use to the maximum extent practicable. To encourage water use reductions during water shortages, RCSD has developed a multi-level Water Shortage Contingency Plan, as discussed in detail in Chapter 8 of this UWMP.

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7.2 DROUGHT RISK ASSESSMENT

The Drought Risk Assessment (DRA) is a new requirement beginning with the 2020 UWMP. The DRA can be updated before the next UWMP cycle (i.e., 2025); however, the notification and approval procedures in Chapter 10 of the UWMP would be required for any interim changes to the DRA. An update to the DRA may be needed as result from new information becoming available, water supply or water use changes, or in the event of unforeseen circumstances.

The DRA is based on the five driest consecutive years on record taking into account any extra effects to water supplies from plausible changes in climate, regulations, and other locally applicable criteria. If there is a shortage, the DRA identifies what the effects to the shortage would be from increasing supply and/or reducing demand. The DRA differs from the supply and demand comparisons in Tables 7-3 and 7-4 in that climate change effects have been taken into account. Water Code requires that the DRA include a description of the data and methods used, the basis for the supply shortage conditions, determination of the reliability of each source, and comparison of total water supplies and uses during the drought, which are described below.

7.2.1 Data, Methods, and Basis for Water Shortage Conditions

Supply conditions for the District wells during the five driest years (2012-2016) were consistent with non-drought years. Although typical seasonal fluctuations occur in individual wells, overall groundwater level contours 2000 and 2020 have remained stable as shown in Chart 6-2 (Chapter 6). Therefore, a water shortage from a prolonged drought, including one occurring in the next five years (2021-2025) is not anticipated. However, a water shortage as a result of a catastrophic event such as an earthquake is foreseeable. Although the tank ages range from 60 years to 30 years old and have endured many major earthquakes, at least three of them are due for a seismic upgrade or replacement, according to the District's seismic analysis (HAE(a), HAE(b), HAE(c), HAE(d)). Therefore, the water shortage conditions are based the hypothetical failure of at least one tank reservoir resulting from a significant earthquake.

State Water Project water will become available to the District in the near future through the "RPU Connection" project described in Chapter 6 (Submittal Table 6-7). Although there is

inherent uncertainty in the consistent availability of this water supply source, this DRA has assumed that imported water supplies will be reliable following the determination of Metropolitan in its draft 2020 UWMP.

7.2.2 Individual Water Source Reliability

The following are characterizations of the expected quantity of supply and reliability of the supply during the first year of a drought beginning in 2021.

- Drought Year 1: 2021
    - Total water consumption increases from 2020 by approximately 5% due to urban growth (5.0% increase in potable water and 5% increase for non-potable demand).
    - No decline to customer water use as compared to 2020. Water waste prohibition remains in-effect.
    - No decline in water supply from District non-potable or potable well water as compared to 2020.
    - Repairs to Well 18 (potable) will be completed and back online at 1,500 gpm. Well 4 (potable) at 1,100 gpm was not used in 2020 but it can be used in 2021.
- Drought Year 2: 2022
    - Total water consumption increases from 2021 by approximately 5% due to urban growth (4.8% increase in potable use and 5% increase in non-potable use).
    - No decline to customer water usage as compared to 2020, unless there is a statewide conservation mandate to reduce water use, or a decline in groundwater supplies, or an emergency water shortage not caused by drought.
    - No decline in water supply from non-potable or potable well water as compared to 2020.

- Repairs to Well 18 (potable) will be completed and back online at 1,500 gpm. Well 4 (potable) at 1,100 gpm was not used in 2020 but it can be used in 2021.

- Drought Year 3: 2023
  - Total water consumption increases from 2022 by approximately 4.6% due to urban growth (4.5% increase in potable water use and 5% increase in non-potable use).
  - No decline to customer water usage as compared to 2020, unless there is a statewide conservation mandate to reduce water use, or a decline in groundwater supplies, or an emergency water shortage not caused by drought.
  - No decline in water supply from non-potable or potable well water as compared to 2020.

- Drought Year 4: 2024
  - Total water consumption increases from 2023 by approximately 4.5% due to urban growth (4.3% increase in potable water use and 5% increase in non-potable water use).
  - No decline to customer water usage as compared to 2020, unless there is a statewide conservation mandate to reduce water use, or a decline in groundwater supplies, or an emergency water shortage not caused by drought.
  - No decline in water supply from non-potable or potable well water as compared to 2020.

- Drought Year 5: 2025
  - RPU Connection Project will come online to deliver approximately 1,200 acre-feet per year of imported potable water supplies to help dilute the TDS concentration in the District's wastewater.

- Sales of potable water to JCSD using the existing interties will begin again at approximately 2,000 acre-feet per year.
- Agua Mansa Commerce Center Specific Plan expected completion year with additional 50 acre-feet per year water demand.
- Total water consumption increases from 2024 by approximately 27% due to urban growth (4.1%), Agua Mansa project (50 AFY), sales to JCSD (2,000 AFY) and 5% increase in non-potable use).
- No decline to customer water usage as compared to 2020, unless there is a statewide conservation mandate to reduce water use, or an inexplicable decline in groundwater supplies, or an emergency water shortage not caused by drought.
- No decline in water supply from non-potable or potable well water as compared to 2020.

One source of uncertainty in the aforementioned assumptions is timing of when the RPU Connection Project will be completed and when deliveries will start, and whether the drought affects the amount delivered. Likewise, timing for completion of the Agua Mansa project is uncertain. Another source of uncertainty is whether the District will be forced to mandate water conservation as a result of a statewide drought declaration or as a result of an unforeseen interruption of service from an earthquake or other hazard.

7.2.3 Total Water Supply and Use Comparison

When a water supplier cannot meet the demand of its customers for whatever reason, this DRA assumes two things can happen: the supplier can mandate customers to conserve water, thus reducing demand; and/or the supplier can augment or supplement its normal supplies with an emergency and temporary source of water.

RCSD customers were responsive to the water conservation mandate in 2015. The District is in the process of developing an updated and thorough water conservation ordinance which will help clarify expectations and authorities. Water demands are expected to gradually increase

as the service area builds out by about 2036 and a couple of large development projects are annexed into the District (see Chapter 4).

Supply augmentation for RCSD comes from the District's ability to fully utilize production capabilities and produce additional water from the Riverside South Basin consistent with the Judgment (Appendix K). Emergency supplies can be obtained from the intertie and mutual aid agreement with JCSD, and the District is actively working with West Valley Water District to develop a connection.

Assuming the next five years, 2021 through 2025, are a five-consecutive year drought, and taking into account the assumptions in Section 7.2.2, the District's potential water supply surplus (or shortage) is provided in **Submittal Table 7-5 (**next page)**.** If there is a shortage, then the benefit of a supply augmentation or use reduction action is shown to address the shortage. Because Western's climate change factors show 100% of supply and demand beginning in 2020, no climate change effects have been added to the calculations in Submittal Table 7-5.

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Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)	
2021	**Total**
Total Water Use	5,463
Total Supplies	5,463
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%
2022	**Total**
Total Water Use	5,741
Total Supplies	5,741
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%
2023	**Total**
Total Water Use	6,019
Total Supplies	6,019
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%
2024	**Total**
Total Water Use	6,301
Total Supplies	6,301
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%
2025	**Total**
Total Water Use	8,635
Total Supplies	8,635
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0%

As shown in Submittal Table 7-5, supply is expected to equal demand in each year from 2021 to 2025 assuming each year is a drought year primarily because the supplies from District wells have not decreased in previous long-term drought periods to such a degree that demand management actions or supply augmentation is required to respond to a supply shortage.

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CHAPTER 8 WATER SHORTAGE CONTINGENCY PLAN

This Water Shortage Contingency Plan (WSCP) details RCSD's actions in the event of an actual water shortage scenario. A water shortage means that the water supply that is available is insufficient to meet the normally expected customer water use at a given point in time. In 2018, the Legislature modified the UWMP laws to require a WSCP with the specific elements contained herein. The District may modify this WSCP at any time independent of updates to the UWMP; however, the same steps to notify and hold a public hearing are required with each modification as described herein. This chapter is written as a stand-alone document and therefore repeats many elements from the other chapters in the UWMP.

Adoption Resolution No. XX on DATE.

8.1 WATER SUPPLY RELIABILITY ANALYSIS

Pursuant to Water Code Section 10632(a)(1), the following is a summary of the Water Service Reliability Assessment and Drought Risk Assessment located in Chapter 7 of this UWMP.

The District has assessed the reliability of its water service during normal, single-dry, and multiple-dry years by comparing total projected water supplies with total projected water demand over the next 20 years, in five-year increments. Future water supplies for RCSD include all reasonably foreseeable and quantifiable future water supply projects that the District is either currently undertaking or is in the process of implementing. Future water demands for RCSD reflect a land-use based approach assuming mid-range density buildout of the District's service area and updated water duty factors from 2018-2020 customer meter data prepared separately for each land use type in the District. In summary, the groundwater supply available to the District has been and is projected to continue to be sufficient to meet projected pumping demands with water treatment systems and given the relatively stable groundwater elevations and resiliency of the basin. Therefore, the District is projected to have sufficient water supplies to meet expected customer demands in normal years, single-dry years, and multiple-dry years occurring anytime between 2025 and 2045.

The District has prepared a five-consecutive-year Drought Risk Assessment (DRA) for a drought beginning in 2021 and continuing through 2025. The DRA assumes a nominal reduction in customer water use with each passing year to reflect voluntary conservation.

These projected reductions in water use are deemed realistic given the observed reductions RCSD customers made during the five-year drought from 2013 to 2017. Further, the DRA assumes imported water supplies would be available to the District beginning in drought year one (2021) through drought year five (2025) (WMWD(a), p. 3). Local groundwater supplies from District wells are assumed to be reliable in all years of the DRA, which is consistent with what was observed during the five-year drought from 2013 to 2017.

Groundwater reliability is based on the well reporting and monitoring programs performed by the Western-San Bernardino Watermaster. Records of aggregate production rates show that pumping has decreased in recent years and well below the limit when replenishment by others may be required (UWMP, Chart 6-1). Further, records of the District's groundwater surface elevations shows relatively stable elevations that are not consistently responsive to drought conditions; for example, during the drought of 2013-2017, some well elevations actually rose (UWMP, Chart 6-2). With treatment systems, the District has always had a reliable groundwater supply. A water shortage resulting from drought conditions is not foreseeable. Further, the District's ability to produce water pursuant to the Western-San Bernardino Judgment of 1969 is projected to be sufficient to meet demands through the next five years if it were five consecutive drought years.

The ability to produce water from the Riverside South Basin has been constrained in the last couple of years by the sudden and unexpected appearance of a newly regulated family of contaminants (i.e., PFAS). Several of the District's wells are undergoing new wellhead treatments as a result. The difference in groundwater production has been made up by the District's other wells. It is plausible that there will be more contaminants being regulated in the future that the District currently is not aware of and unable to fully prepare for. However, the District is currently addressing the known impairments with a plan of targeted projects to keep wells online. Because of the District's efforts to expand treatment capabilities, add several new well fields and treatment plants over the next 20 years coupled with efforts to make the system more efficient with closer monitoring capabilities including Advanced Metering Infrastructure coming online over the next few years, the DRA has assumed that availability of groundwater supplies will not be reduced due to water quality constraints.

8.2 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT PROCEDURES

Beginning in 2022, the District will prepare an annual water supply and demand assessment (or, Annual Assessment) and submit an Annual Water Shortage Assessment Report to the California Department of Water Resources (DWR). The Annual Assessment is a determination of the near-term outlook for supplies and demands and how a perceived shortage may relate to WSCP shortage stage response actions in the next 12-month period; this determination is based on known circumstances and information available to RCSD at the time of analysis.

The Annual Water Shortage Assessment will be due by July 1 of each year pursuant to Water Code Section 10632.1. DWR is currently developing a stand-alone guidance document to help suppliers develop their own procedures but it will not be available before the deadline for this document, which is July 1, 2021. Therefore, the decision-making process and key data inputs for the Annual Assessment shown below are interim and subject to change when the DWR guidance document becomes available.

8.2.1 Decision-Making Process for Annual Assessment

The Annual Assessment and related reporting are to be conducted based on the District's procedures described in the WSCP. At this time, the Annual Assessment is anticipated to be primarily based on the District's ongoing water supply and water demand monitoring process, the results and analysis of which is presented monthly to the Board of Directors. The Annual Assessment will involve examination of developing demand and supply conditions for the next 12-months, as well as considerations for potential actions consistent with the WSCP. In June when an Annual Assessment is presented to the Board of Directors, it may include a request to trigger specific shortage response actions. Upon approval, RCSD staff will then submit the Annual Assessment to DWR by July 1.

8.2.2 Data and Methodologies for Annual Assessment

The primary data sources that could be used by the District to evaluate the water reliability for the current year and one dry year are detailed below pursuant to Water Code Section 10632(a)(2). The Annual Assessment determination will be based on considerations of available

water supplies, unconstrained demand, and infrastructure considerations.[1] Because the WSCP shortage stages are defined in terms of shortage percentages, shortage percentages for current year and one dry year conditions would be calculated for the Annual Assessment. The characteristics of "one dry year" according to the District will be at the discretion of the District, which may be refined and changed over time based on ongoing data collection. The 2020 UWMP suggests the conditions of a single dry year would be consistent with average rainfall in 2018, which was approximately half of average (47%) with average being 11 inches per year (UWMP Table 7-1). The District will focus the Annual Assessment based on actual forecasted near-term water supply conditions to ensure appropriate shortage response actions are triggered in a timely manner with expected outcomes.

1. **Evaluation Criteria.**

   For each Annual Assessment, the District will characterize current year and one dry year scenarios based on best-available data. RCSD will consult with the Western-San Bernardino Watermaster with regard to any limitations on groundwater extractions. The District will consult with Jurupa Community Services District (JCSD) to confirm their anticipated purchases of water. Said consultations will focus on estimates for the next 12 months and estimates if a single-dry year condition occurs where rainfall is half of average. The District will make an estimation of available core supplies and unconstrained demands for the next 12-month period and a dry-year scenario to calculate shortage percentages. These findings will be given additional context and influenced by infrastructure considerations (discussed below) which will differ from year to year.

2. **Water Supply.**

   For each Annual Assessment, the District will quantify each source of water supply for the next 12 months and in a single-dry year condition based at least in-part on the

[1] For the Annual Assessment and WSCP, Water Code Section 10632(a)(2)(B)(i) directs the District to use current year "unconstrained demand" when assessing water supply reliability. Unconstrained demand is defined as expected water use in the upcoming year, based on recent water use, and before any projected shortage response actions that may be taken under the WSCP. Unconstrained demand may be differentiated from observed demand, which may be constrained by preceding, ongoing, or future actions, such as emergency actions taken as part of a mutli-year drought. Routine activities such as ongoing conservation programs and regular operational adjustments are not considered as constraints on demands.

consultations described in step 1 (Evaluation Criteria). Quantification of supplies will differentiate the District's water supplies in Table 8-3 that are expected to be used in a supply augmentation situation.

3. Current Year Unconstrained Customer Demand.

For each Annual Assessment, the District will gather data to forecast near-term demands, and may take into consideration historical usage trends, weather trends, and water-use efficiency trends. This data may include the number of service availability letters issued recently to gauge future demand. Because these would be "constrained" observed demands rather than unconstrained demands, the District would adjust its near-term demand forecast for the Annual Assessment to account for extraordinary demand management measures that the District may intend or have already put into effect for the current year.

4. Current Year Available Supply.

For each Annual Assessment, the District will make two estimates of the available annual water supply using (1) current year conditions for the next 12 months and (2) one dry year conditions. Because the definition of one dry year is at the discretion of the District, RCSD will be able to refine and update its assumptions for a dry year scenario in each Annual Assessment as information becomes available.

5. Infrastructure Considerations.

For each Annual Assessment, the District will describe infrastructure constraints that would influence the ability to obtain the water supply as expected and/or the ability to distribute normally to customers. Projects in the next 12 months that would influence capabilities would be quantified with the volume of water becoming available or unavailable and the duration of projects/constraints.

Each year, RCSD regularly carries out preventive and corrective maintenance of its facilities to inspect and repair pipelines and facilities and support capital improvement projects. These shutdowns involve a high level of planning and coordination; they are scheduled to ensure that major portions of the distribution system are not out of service

at the same time. Operational flexibility within RCSD's system allow shutdowns to be successfully completed while continuing to meet customer demands.

6. Other Factors.

For each Annual Assessment, the District can describe locally applicable factors that can influence or disrupt supplies, along with other unique local considerations that are considered to be part of the Annual Assessment.

8.3 SIX STANDARD WATER SHORTAGE STAGES

The Water Code requires six standard water shortage stages in the WSCP that correspond to progressive ranges of up to 10%, 20%, 30%, 40%, and 50% shortages and greater than 50% shortage. Each stage represents an increasing gap between RCSD's supplies and demands as determined in the Annual Assessment. As described above, shortage percentages will be calculated as percent shortfall of supplies against demands for anticipated current year conditions and assumed dry year conditions. Shortage levels also apply to catastrophic interruption of water supplies, including but not limited to a regional power outage or earthquake. The District's shortage response actions for each shortage level are shown in **Table 8-1** and described below.

Submittal Table 8-1
Water Shortage Contingency Plan Levels

Shortage Level	Percent Shortage Range	Shortage Response Actions (*Narrative description*)
1	Up to 10%	RCSD has adequate supplies to cover 10% shortage. Effort at this stage is to encourage voluntary conservation.
2	Up to 20%	RCSD has adequate supplies to cover up to a 20% shortage. Effort at this stage is to encourage voluntary conservation.
3	Up to 30%	RCSD produces from a historically stable groundwater basin and has not in the past or currently received imported water to meet potable demand. The goal in this stage is to encourage voluntary conservation through onsite surveys to reduce obvious water waste
4	Up to 40%	In addition to actions above itaken in Stages 1, 2, and 3, RCSD will coordinate with Western Municipal Water District and The Metropolitan Water District of Southern California to make rebates available. District may take emergency action to augument rebate amount to entice greater utilization.
5	Up to 50%	In addition to the actions taken in Stages 1, 2, 3, and 4, RCSD will engage in either penalty tiers by reducing the cubic feet by 25% in each tier or by providing an incentive by crediting back to the custumer for water not consumed relative to their average use over
6	>50%	In addition to Stages 1, 2, 3, 4, and 5, RCSD will engage in penalty tiers by moving the cubic feet allowed in each tier by 50% and creating an additional Tier 3 for Unsustainable Use at a rate 1.5 times the Tier 2 rate.
NOTES: Depending on the nature of the shortage, RCSD may be able to augment supply through the intertie with JCSD at any stage.		

RCSD plans to prepare a new ordinance with an updated water conservation program that reflects the current state requirements. Until a new ordinance is adopted, RCSD will continue to operate under the requirements of RCSD Ordinance No. 111 and RCSD Resolution No. 2019-858. On October 15, 2009 the RCSD Board of Directors adopted Ordinance No. 111 to establish the Landscape Water Use Efficiency Program which provided compliance measures in support of the State Water Conservation in Landscaping Act (State Landscape Model Ordinance [AB 1881, 2006]). Ordinance No. 111 includes efficient water management

measures and water waste prevention practices which include, but are not limited to, limiting watering hours, prohibiting excessive water flow or runoff, prohibiting washing down hard or paved surfaces, and customers obligation to fix leaks, breaks, or malfunctions. Ordinance No. 111 applies to customers with landscape areas one acre or greater in size and customers with properties with dedicated landscape irrigation meters. A copy of Ordinance No. 111 is located in **Appendix M.**

On June 8, 2015 RCSD adopted Resolution No. 2015-820 declaring a modified stage 2 drought contingency pursuant to the District's 2015 Water Shortage Contingency Plan for compliance with State Water Resources Control Board (SWRCB) requirements.

On November 7, 2019, the RCSD Board of Directors adopted Resolution No. 2019-858 to rescind Resolution No. 2015-820; however, the water conservation practices mandated by Resolution 2015-820 continue to be encouraged as stated in section F of Resolution No. 2019-858. These rescissions were based on improvements to the District's water supplies and repeal by the SWRCB of various water conservation regulations and requirements that were put into effect in 2015 due to statewide drought conditions. By rescinding Resolution No. 2019-858, the aforementioned Resolution No. 111 remains the District's enforceable water waste prevention ordinance. A copy of Resolution No. 2019-858 and Ordinance No. 111 is located in **Appendix M.**

8.4 WATER SHORTAGE RESPONSE ACTIONS

The water shortage response actions the District can take that align with the defined shortage levels in Table 8-1 include demand reduction actions, supply augmentation actions, operational changes, and additional mandatory prohibitions. The authority to determine shortage conditions and to select appropriate shortage response actions remains with the District.

8.4.1 Demand Reduction

There are generally two ways to respond to a water shortage through either demand reduction actions (i.e., conservation) or supply augmentation. RCSD Resolution No. 2019-858 states, "To promote ongoing water conservation practices by customers, the District Board of Directors encourages customers avoid use of water in the following manner except where necessary to

address an immediate health and safety need or comply with a term or condition of a permit issued by a state or federal agency."

1. Outdoor watering of ornamental landscapes or turf between the hours of 10:00 AM and 6:00PM
2. Outdoor watering of ornamental landscapes or turf of more than two (2) days per week
3. Outdoor watering of ornamental landscapes or turf of more than thirty (30) minutes per station for drip irrigation systems, and twenty (20) minutes per station for stream irrigation systems
4. Outdoor watering of ornamental landscapes or turf during or within forty-eight (48) hours after measurable rainfall
5. Watering of outdoor landscapes that cause runoff such that water flows onto adjacent property, non-irrigated areas, private or public walkways, roadways, parking lots, or structures
6. Using hoses that dispense potable water, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use
7. Using potable water in a fountain or decorative water feature, unless the water is recirculated
8. Draining or refilling swimming pools (maintaining water level is acceptable) without the written approval of the District's General Manager
9. Not covering a swimming pool when not in use
10. Swimming pool construction without the written approval of the District's General Manager
11. Serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drinks are served and/or purchased
12. Washing of driveways & sidewalks.

Excerpt from RCSD Resolution No. 2019-858, Section F – District Water Conservation Measures.

Further, RCSD Ordinance No. 111 outlines the District's Landscape Water Use Efficiency Program, which states in-part, "The following water conservation requirements are intended to avoid water waste and are effective at all times. These requirements shall be subject to change, from time to time, by the Board (p. 6)."

1. Limits on Watering Hours: Watering or irrigating of lawn, landscape or other vegetated area with potable water, excluding agricultural crops grown for commercial sale, is prohibited between the hours of 8:00 a.m. and 8:00 p.m. on any day; except:
   a. by use of a hand-held bucket or similar container,
   b. a hand-held hose equipped with a positive self-closing water shut-off nozzle or device,
   c. through permanently-installed low-volume point-to-point drip irrigation that is completely covered by an organic or inorganic mulch layer,
   d. for very short periods of time for the express purpose of adjusting or repairing an irrigation system, or
   e. for very short period of time during the first three weeks of a new landscaper's establishment period. Overhead irrigation shall be limited to the hours of 8:00 p.m. to 9:00 a.m.
2. No Excessive Water Flow or Runoff: Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter or ditch is prohibited.
3. No Washing Down Hard or Paved Surfaces: Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device, a low-volume, high-pressure cleaning machine equipped to recycle any water used, or a low-volume high-pressure water broom.
4. Obligation to Fix Leaks, Breaks or Malfunctions: Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected and in no event more than seven (7) calendar days, is prohibited.

Excerpt from RCSD Ordinance No. 111.

The District's demand reduction actions for this WSCP in addition to the aforementioned ordinance and resolution are provided in **Table 8-2,** including the estimated proportion of the

shortage gap that the demand reduction action is expected to meet at each level. If the demand reduction action does not meet the entire shortage gap, then the difference is made up by supply augmentation shown in **Table 8-3,** below.

Submittal Table 8-2: Demand Reduction Actions

Shortage Level	Demand Reduction Actions ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? ***For Retail Suppliers Only*** *Drop Down List*
Add additional rows as needed				
1	Expand Public Information Campaign	1 to 3%; District has adequate supplies to cover 10% shortage. Effort at this stage is to encourage voluntary conservation.		No
2	Offer Water Use Surveys	4 to 7%; District produces from a historically stable groundwater basin and has not in the past or currently received imported water to meet potable demand. Goal in this stage is to encourage voluntary conservation through onsite surveys to reduce obvious water waste.		No
3	Provide Rebates on Plumbing Fixtures and Devices	10%; in addition to actions above in Stages 1 & 2, coordinate with Western Municipal Water District and MWD to avail customers for rebates. District may take emergency action to augument rebate amount to entice greater utilization.		No
4	Other Actions - Mandatory 10%	20%; In addition to the actions above in Stages 1, 2 & 3, engage in either penalty tiers by reducing the cubic feet allowed by 25% in each tier or by providing an incentive by crediting back to the custumer for water not consumed relative to their average use over the last 5 years.		Yes
5	Implement or Modify Drought Rate Structure or Surcharge	40%; In addition to Stages 1, 2, 3 & 4, engage in penalty tiers by moving the cubic feet allowed in each tier by 50% and creating an additional Tier 3 for unsustainable use at a rate 1.5 times the Tier 2 rate		Yes
6	Implement or Modify Drought Rate Structure or Surcharge	50%; I addtition to actions taken in Stages 1 through 5, reduce the DF Allowed in each tier by 75% and add another penalty Tier 4 at 3 times the Tier 2 rate.		Yes
NOTES: During a water shortage, a combination of supply augmentation actions (Table 8-3) and these demand reduction actions will be used in concert to continue water service.				

8.4.2 Supply Augmentation

The District can augment or supplement its water supplies by utilizing its full pumping capabilities in the Riverside South Basin and depending on the nature of the shortage, utilize the intertie shared with JCSD for potable water. These augmentation actions would not be redundant to the supplies discussed in UWMP Chapter 6 because these actions are above and

beyond a normal water supply scenario. Pursuant to the Judgment, the District can pump what is needed to meet customer needs (Appendix K).

The District's supply augmentation actions are listed in **Table 8-3**.

Submittal Table 8-3: Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	How much is this going to reduce the shortage gap? *Include units used (volume type or percentage)*	Additional Explanation or Reference *(optional)*
Add additional rows as needed			
All Levels	Expand Public Information Campaign	1-5%	
All Levels	Transfers	Will vary depending on need and availability	Intertie with JCSD or emergency interties with WVWD or Western.
All Levels	Other Purchases	Will vary depending on need and availability	Purchase additional imported water from Western when connection to RPU is completed (see UWMP Table 6-7).
1	Other Actions (describe)	5%	Utilize full pumping ability in the Basin
2	Other Actions (describe)	10%	Utilize full pumping ability in the Basin
3	Other Actions (describe)	20%	Utilize full pumping ability in the Basin
4	Other Actions (describe)	20%	Utilize full pumping ability in the Basin
5	Other Actions (describe)	10%	Utilize full pumping ability in the Basin
6	Other Actions (describe)	10%	Utilize full pumping ability in the Basin
NOTES: JCSD = Jurupa Community Services District; WVWD = West Valley Water District; Western = Western Municipal Water District; RPU = City of Riverside Public Utilities			

8.4.3 Operational Changes

The operational actions that would be undertaken during a water shortage are shown in Table 8-2 and Table 8-3. The District already has a program to monitor, analyze, and track customer usage rates and has budgeted a pipeline replacement program.

8.4.4 Additional Mandatory Restrictions

All mandatory restrictions developed by the District in addition to any state-mandated prohibitions are listed in Table 8-2. No additional mandatory restrictions are in-effect other than a prohibition against water waste; however, the Board of Directors has the discretion to develop in the future locally appropriate restrictions as conditions dictate.

8.4.5 Emergency Response Plan

RCSD adopted its current Emergency Response Plan (ERP) on March 26, 2008. Applicable excerpts from the document are included herein where noted; the document in its entirety is kept by the District. It should be noted that the District is in the process of updating its ERP with preparation of a risk and resilience assessment pursuant to America's Water Infrastructure Act of 2018 Section 2013(b). Therefore, this element of the WSCP may be amended based on the results of the forthcoming assessment.

RCSD developed the 2008 ERP to facilitate resumption of normal operation of their facilities after an emergency including catastrophic supply interruptions. As stated in the ERP, "The core business processes to keep functioning during a recovery process include: treatment processes, water production wells and water transmission pipelines, booster pump stations, reservoirs, and sewage lift stations" (p. 5). According to the 2015 UWMP, the District's priorities for use of available water during a water shortage are, in order of priority, as follows: (1) fire protection, health, and welfare emergency uses; (2) indoor water for residential customers; (3) indoor water for public buildings and schools; (4) indoor water for commercial and industrial; (5) non-landscaping outdoor water for commercial and industrial; (6) other uses including exterior residential use (K&S(a), pp.7-6, 7-7).

The ERP conducted a threat evaluation for the following natural hazards: earthquakes, floods, waterborne diseases, and drought (pp. 1-2). Human-caused threats evaluated by the ERP include: vandalism, terrorism, system neglect, cross-connections, backflow conditions, construction accidents, chemical spills, sewage spills, power outages, and fires (pp. 2-3). The ERP determined that the disaster threat with the highest risk is an earthquake and "the most probable risks to RCSD's facilities are earthquake, fire, hazardous chemical release, vandalism, and terrorism" (p.5).

The ERP contains disaster response procedures and flow charts for the various types of disaster. First, the District follows the Standard Emergency Management System (SEMS) Incident Command System approach to manage an incident that is outside of normal day to day operations. The ERP describes three levels of incidents: Level 1 (small chemical spill), Level 2 (major line break requiring additional pumps, contractors, or rental equipment; hazardous materials release that does not threaten public health) and Level 3 (the most severe incidents when off-site emergency services are needed including but not limited to structural

earthquake damage) (p.13). Once the incident level is determined, the Emergency Operation Center (EOC) is established (p. 15). The ERP also provides guidelines for Disaster Response, Search and Rescue, Fire Response, Earthquake Response, Hazardous Materials Release/Response, Aircraft Crash Response, and Terrorism Response, as well as evacuation and medical emergency procedures.

During a water shortage scenario resulting from natural or man-made causes, the District can receive emergency water supplies through the existing interties with JCSD and the District is actively working with West Valley Water District to develop a connection. These interconnections would provide water service in the event of a catastrophic outage while the District is making repairs or other steps needed to bring service back online. The District has adequate backup power at each of its water treatment plants and at several to provide emergency water service (indoor domestic use only) to its customers in the event of a widespread power failure (K&S(a), p. 6-8). Portable standby generators are available for use where needed in an emergency.

RCSD is a member of the Emergency Response Network of the Inland Empire (ERNIE), which facilitates public agency preparedness for, response to, and recovery from local and regional disasters. Agencies volunteer to enter into an agreement to provide mutual aid and assistance to other member agencies. ERNIE assists agencies with trainings, communication, documentations for reimbursement, concept of emergency operations, and writing after-action reports and corrective action plans. RCSD is not a member of the California Water/Wastewater Agency Response Network (CalWARN).

8.4.6 Seismic Risk Assessment and Mitigation Plan[2]

Pursuant to Water Code Section 10632.5 beginning January 1, 2020, the UWMP shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities. The District may comply with this requirement by submitting a copy of the most recent local hazard mitigation plan (LHMP)

[2] Pursuant to Water Code section 10632.5, the assessment herein is based on other sources, as described herein. Albert A. Webb Associates is not qualified to make its own independent seismic risk assessments or recommend mitigation actions and assumes no responsibility for those recommended herein.

prepared under the federal Disaster Mitigation Act of 2000 if the LHMP addresses seismic risk (a copy of the LHMP is located in **Appendix N**).

Local Hazard Mitigation Plan

The City of Jurupa Valley maintains an active LHMP. The City of Jurupa Valley *2018 Local Hazard Mitigation Plan* was prepared pursuant to the Disaster Mitigation Act of 2000.[3] RCSD participated in the preparation process of the LHMP as a special district. The LHMP does address seismic risk.

According to the City's LHMP, "The most prominent hazard…are a major earthquake, flooding potential from 100 year storm events in winter months along the Santa Ana River bank, and windstorms causing power outages" (p. 13). Further, "Earthquake risk is very high in western Riverside County (which includes Jurupa Valley), due to the presence of two of California's most active faults: the San Andreas and San Jacinto" (p. 13). The LHMP lists among the "critical facilities" one regional treatment plant, 11 water well/tank sites, three water distribution plants, and one sewer lift station (p. 16). An assessment and ranking of risks are included in the LHMP including flood, earthquake, wildfire, severe weather (heat/wind/cold), technical hazards, drought severity, and agricultural hazards (pp. 20-21).

The LHMP lists the following mitigation action that has been implemented by the District to address earthquake risk (p. 26):

- *The separate water service agencies have installed auxiliary power sources on various municipal water wells and sewer lift stations.*

  Priority: High
  Responsible Dept: JCSD / RCSD
  Timeframe: completed
  Funding/Cost: Unknown – funded by other agencies
  Hazard: structural (earthquake)

[3] City of Jurupa Valley 2018 Local Hazard Mitigation Plan: https://www.jurupavalley.org/181/Local-Hazard-Mitigation-Plan

The LHMP lists the following mitigation action addressing seismic risk and designated it as the responsibility of RCSD (p. 29):

7.3 ON-GOING MITIGATION STRATEGY PROGRAMS

Rubidoux Community Services District is currently designing a new $2.8 million dollar 6MG water storage tank, a $10 million dollar sewage conveyance facilities damaged during the 2005 flood, and a $150,000 water service replacement project.

Priority: High

Responsible Dept: **Rubdioux Community Services District (separate agency)**

Timeframe: ongoing

Funding/cost: RCSD water restricted capital fund (outside agency)

Hazard: Structural (earthquake), fire

Project #1-Reduce the level of risk to loss of life, personal injury, public and private property damage, economic and social dislocation, and disruption of vital community services that would result from earthquake.

Goal 1: Adopt all of Riverside County Ordinances and Resolution including Land Ordinances. The City has completed this part of the process by adopting and implementing Ordinance No. 2011-01. Additional ordinances are adopted as needed on an ongoing basis to address issues that arise.

Objective: Amend the Building and Zoning Codes to incorporate specific standards for siting, seismic design, and review of Critical Facilities.

Action: Require all new developments, existing critical facilities and structures to comply with the most recent California Building Code seismic design standards.

Priority: High

Responsible Dept: Planning and Building Departments

Timeframe: Ongoing for the life of the plan 2018-2022. This action will be reevaluated during the updating stage of the plan

Funding/cost: Current funding; cost unknown

Hazard: Earthquake

Excerpt from City of Jurupa Valley Local Hazard Mitigation Plan, p. 29.

Tank Seismic Analysis

For the purpose of assessing and developing a plan to mitigate seismic risks specific to the needs of the District, RCSD contracted with Harper & Associates Engineering, Inc. (HAE) in 2020 to prepare reservoir tank seismic analyses for the District's four active tanks: Atkinson, Hunter 1, Perrone, and Watson.

HAE's analyses on the tank structures "was analyzed to assess adequacy for seismic overturning, sloshing, and uplift. Hoop stresses caused by seismic loads were also analyzed as part of this study" (HAE(a), p. 2). Further, "the seismic analysis was performed using the procedures outlined in AWWA-D 100" (p. 2). The key results of said assessment reports prepared for each tank represent future mitigation actions for RCSD to address seismic risks. In summary, for the Atkinson, Hunter No. 1, and Perrone Tanks, HAE recommends due to the ages of the reservoirs, that each tank undergo either a seismic upgrade (including various elements) or the tank be replaced ((HAE(a), p. 5), (HAE(b), p. 4), (HAE(c), p. 3). For the Watson Tank, HAE recommends a change in the locations of all pipe penetrations through the bottom of the tank (HAE(d), p. 3).

8.4.7 Shortage Response Action Effectiveness

The District's response actions are shown in Table 8-2 and Table 8-3. Each response action listed has a corresponding percentage of the shortage gap that the action is expected to meet. The percentages in Table 8-2 are based on the observed effectiveness of demand reduction actions undertaken during the last five years including the drought from 2013-2017. The higher the percentage, the more effective the action is expected to be in reducing demand.

In normal water supply conditions, production figures are recorded daily in the District's computerized database. Total production and consumption by all categories of customers are reported monthly to District management and Board of Directors. (K&S(a), p. 7-12)

During drought periods, the RCSD Operations Department reports weekly production figures to the General Manager (or, daily or hourly reports depending on severity of shortage), who then prepares a monthly report to the Board of Directors to report on progress toward the water conservation target. In doing so, the District does analyze the efficacy of response actions on at least a monthly basis.

The effectiveness of the supply augmentation actions shown in Table 8-3 have not been needed to-date because the District has not experienced a supply shortage. Therefore, the effectiveness is estimated based on a thorough understanding of pumping capacity, well locations, and expected production rates based on long-term records. Because the District's system has been designed to fully utilize the groundwater basin, the supply augmentation actions in Table 8-3 are estimated to close the water shortage gap by any proportion that is not met by customer conservation efforts.

8.5 COMMUNICATION PROTOCOLS

In the event of a drought declaration, the District will notify each customer by mail and include details as to how much reduction in water use is needed and provide suggested means to achieve that. However, in a disaster, prior notice of water shortage response actions may not be possible. In this case, notice will be provided by other means, such as radio, television, or newspaper. This process would also apply each time the District changes drought stage levels.

The District's 2008 ERP describes the process of communication that is expected by staff during an emergency. In general, the District's Public Information Officer will "have the responsibility of developing and releasing information about the incident to the news media, to incident personnel, and to other appropriate organizations and agencies" (p. 10). Public notification channels can include the RCSD Web site, local radio and television stations, and Social Media (Facebook, Twitter, LinkedIn, Instagram, etc.).

8.6 COMPLIANCE AND ENFORCEMENT

Pursuant to Water Code Section 10632(a)(6), the WSCP should explain the customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined by the WSCP.

The District's tiered water rate structure has proven to be an effective way to motivate customers to reduce their water consumption. The District is updating its water conservation ordinance which would include compliance, enforcement, appeal, and exemption procedures consistent with the WSCP. As shown in Table 8-2, the demand reduction actions in Shortage

Levels 1-3 are voluntary and not associated with an enforceable penalty. The actions taken in Shortage Levels 4-6 would be enforceable according to the forthcoming revised water conservation ordinance.

8.7 LEGAL AUTHORITIES

As discussed in Section 8.3, the RCSD Board of Directors has in the past adopted ordinances and resolutions in response to declared drought conditions, which established legal authority for implementing demand reduction actions and enforcement. RCSD maintains legal authority to implement the shortage response actions in Section 8.4, and to enforce them relative to Section 8.6 by way of declarations made by the Board of Directors and forthcoming updates to the District's water conservation ordinance.

The following statements have been included herein to demonstrate consistency with Water Code Section 10632(a)(7):

1. Water Code Section Division 1, Section 350 - Declaration of a water shortage emergency condition.

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

2. California Government Code, California Emergency Services Act (Article 2, Section 8558).

The Rubidoux Community Services District shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency.

The following is a list of contacts for all cities and counties for which the District provides service that can be used in the event of a local emergency as defined in subpart (c) of Gov. Code Section 8558:

a. County of Riverside Emergency Management Dept. (951) 358-7100

b. City of Jurupa Valley City Manager's Office (951) 332-6161

8.8 FINANCIAL CONSEQUENCES OF THE WSCP

The District's primary revenue source is water sales. Surplus revenues are placed in the District's reserve, which is used to fund emergency repairs and water system capital improvements. The District maintains a financial reserve that is adequate to address the costs of multiple plant repairs. (K&S(a), p. 7-13)

With implementation of the WSCP, RCSD's response actions would include demand management, supply augmentation, and operational flexibility, all of which could impact RCSD financially. Financial consequences would include a decrease in revenue due to a decrease in water use, an increase in costs to augment supply, as well as an increase in administrative costs for recording, monitoring, reporting, and enforcing the District's response actions to implement the WSCP.

Upon implementation of the WSCP, RCSD would use its financial resources to mitigate the impacts of water shortages. Mitigation actions that would be initiated to address revenue reductions and expense increases associated with shortage response actions include use of a tiered rate structure that becomes more restrictive and enforceable in Shortage Levels 4-6 (Section 8.6, above). Penalties collected under this policy will be used to implement and enforce water conservation measures. In addition, RCSD would consider a reduction of operation and maintenance expenses, deferral of capital improvement projects and use of the District's operations reserve fund as needed to mitigate any short-term revenue shortfalls.

8.8.1 Additional Costs from Discouraging Excessive Water Use During a Drought Emergency

During a drought emergency, the District is required to prohibit excessive water use pursuant to Water Code Section 365 et al. Reporting the actions undertaken by the District to do so does not need to be reported in this UWMP; however, reporting the cost of compliance with Section 365 et al. is a required component of this UWMP, pursuant to Water Code Section 10632(a)(8)(C).

For reference, Water Code Section 367 states there are three types of drought emergencies: (1) declared statewide drought emergency; (2) suppliers move to a local stage of requiring mandatory reductions (as part of the WSCP); and (3) declared local drought emergency. During any one of these three types of drought emergencies, Water Code Section 366 states that excessive water use must be prohibited by using either a rate structure or an excessive water use ordinance.

RCSD prohibits excessive water use and water waste by all customers at all times, which includes declared statewide and local drought emergencies, with violations of said prohibition subject to the penalties described therein. Further, each drought response level declared by the District includes the prohibition of excessive water use, also subject to the penalties described therein.

The costs of discouraging excessive water use during a drought emergency would include increased staffing costs for recording and monitoring water use, issuing customer notifications, providing increased customer education, issuing enforcement warnings, and conducting enforcement actions associated with excessive water use.

8.9 MONITORING AND REPORTING

The District will monitor and report on implementation of this WSCP based on key water use metrics to meet state reporting requirements. The District monitors all activities in the water distribution system through a dynamic system control and data acquisition (SCADA) system. The District will monitor and contact high water users to offer water audits and investigate potential water waste during a drought declaration. The Operations Department will continue to monitor the system daily and weekly with regular reporting to the General Manager. Reports

are provided monthly to the Board of Directors as to the status of water supplies and water demands. At such time the State Water Board provides the regulations for monthly reporting along with associated enforcement metrics, these will be reviewed and incorporated herein as appropriate.

8.10 REFINEMENT PROCEDURES

Water Code Section 10632(a)(10) requires a description of how this WSCP will be reevaluated and improved upon to ensure water shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.

The WSCP will be periodically reevaluated to ensure that its shortage response actions are effective and up-to-date based on lessons learned from implementing the WSCP. The plan will be revised and updated during the UWMP five-year cycle to incorporate new information. For example, new demand reduction and/or supply augmentation actions may be added. If significant revisions are warranted, then the WSCP will be updated outside of the UWMP five-year update cycle. In the course of preparing the forthcoming Annual Assessments each year, RCSD staff can routinely analyze the functionality of the WSCP and prepare recommendations to modify the WSCP to the Board of Directors for the purpose of improving effectiveness in meeting the intent and goals of the WSCP.

8.11 SPECIAL WATER FEATURE DISTINCTION

Pursuant to Water Code Section 10632(b), water features that are not for human recreation are analyzed and defined separately from swimming pools and spas.

Non-Swimming Pool and Non-Spa Water Features

Water features that are not used for the purpose of human recreation are referred to as “decorative water features” in RCSD Resolution No. 2015-820. During a drought declaration, these features must use recirculated water. Water waste that is found to be related to such features may be enforced pursuant to the District’s water waste prohibition. Said water waste can be reported to the District by email and telephone, as well as by staff. The District will also be able to spot a malfunctioning meter or water waste through its forthcoming AMR system. Additional demand reduction actions that are triggered during declared droughts can be

developed to address decorative water features and incorporated herein during the next update to the WSCP.

Swimming Pools and Spas

Swimming pools and spas that are intended for human recreation must use potable water for health and safety considerations. RCSD ordinances do not address swimming pools and spas specifically. Water waste that is found to be related to pools and spas may be enforced pursuant to the District's water waste prohibition. Said water waste can be reported to the District via email and telephone, as well as by staff. The District will also be able to spot a malfunctioning meter or water waste through its forthcoming AMR system. Additional demand reduction actions that are triggered during declared droughts can be developed to address swimming pools and spas and incorporated herein during the next update to the WSCP.

8.12 PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

The following are the steps to adopt, submit, implement, and amend the WSCP. The WSCP may be amended independently of the UWMP, as needed.

8.12.1 WSCP Adoption or Amendment

To adopt a WSCP or amend an adopted WSCP, the District will provide two required notices to customers and each city and county within which it provides service: (1) notice of a public hearing at least 60 days prior to the public hearing stating that the WSCP is being reviewed and adoption (or amendment) of the WSCP is being considered; (2) notice of the time and place of the public hearing including where the draft document is available for public viewing. Per Government Code Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1, the District must hold the public hearing consistent with the Dymally-Alatorre Bilingual Services Act. Determination of whether language assistance is needed is at the discretion of the District (per Gov. Code Section 7293). The District shall also place the notice containing the date and location of the public hearing and location of where the plan is available for public viewing in a newspaper once a week for two successive weeks (per Gov. Code Section 6066).

The public hearing for the WSCP may take place at the same meeting as the adoption hearing of the Board of Directors; however, the meeting agenda must include the public hearing as an agenda item. Before the District can submit the WSCP to DWR, the Board of Directors must

formally adopt the WSCP. The adoption resolution should be included with the WSCP, either as an attachment or Web address where it can be found online.

8.12.2 WSCP Submittal and Availability

The WSCP (or amended WSCP) must be submitted to DWR within 30 days of adoption. Submittal must be done electronically using the Water Use Efficiency (WUE) data online submittal tool located online at: https://wuedata.water.ca.gov/. Within 30 days of submitting the adopted WSCP to DWR, the District must make the plan available for public review during normal business hours. This can be accomplished by placing a hardcopy at the front desk or by posting copies on the District Web site.

The WSCP (or amended WSCP) must also be submitted to the California State Library within 30 days of adoption. Submittal must be done via compact disc (CD) or hardcopy and mailed to:

California State Library
Government Publications Section
Attn: Coordinator, Urban Water Management Plans
P.O. Box 942837
Sacramento, CA 94237-0001

(If delivered by courier or overnight carrier, the street address should be used instead: 900 N Street, Sacramento, CA 95814.)

The WSCP (or amended WSCP) must also be submitted to each city or county to which the District provides water within 30 days of adoption. It may be submitted in an electronic format.

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CHAPTER 9 DEMAND MANAGEMENT MEASURES

Demand management is an integral part of water resources management. Because the demand for water tends to increase as communities grow and available water supplies can change over time, having water-use demand management measures (DMMs) that help lower demands for water can improve water service reliability. This chapter provides a comprehensive description of the water conservation programs that RCSD has implemented, is currently implementing, and plans to implement in the future to meet future urban water use reduction targets.

9.1 DEMAND MANAGEMENT MEASURES FOR RETAIL AGENCIES

The section of the Water Code that addresses DMMs was significantly modified in 2014 to simplify, clarify, and update DMM reporting requirements. The state legislature enacted streamlining of the retail agency requirements from 14 measures to six general requirements plus an "other" category, as follows (CWC §10631(1)(B)):

1. Water waste prevention ordinances;
2. Metering;
3. Conservation pricing;
4. Public education and outreach;
5. Programs to assess and manage distribution system real loss;
6. Water conservation program coordination and staffing support; and
7. Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovating measures, if implemented.

Pursuant to the Water Code, each DMM description below includes how the measure has been implemented over the past five years, and how future projects will help the District to meet future water use targets.

9.1.1 Water Waste Prevention Ordinances

On May 16, 1996, the RCSD Board of Directors adopted Resolution No. 657 establishing a policy for the utilization of District wells producing non-potable water for construction water purposes.

On October 15, 2009, the RCSD Board of Directors adopted Ordinance No. 111 to establish the Landscape Water Use Efficiency Program which provided compliance measures in support of the State Water Conservation in Landscaping Act (State Landscape Model Ordinance [AB 1881, 2006]). Ordinance No. 111 includes efficient water management measures and water waste prevention practices which include, but are not limited to, limiting watering hours, prohibiting excessive water flow or runoff, prohibiting washing down hard or paved surfaces, and customers obligation to fix leaks, breaks, or malfunctions. Ordinance No. 111 applies to customers with landscape areas one acre or greater in size and customers with properties with dedicated landscape irrigation meters. A copy of Ordinance No. 111 is located in **Appendix M**.

On June 8, 2015, RCSD adopted Resolution No. 2015-820 declaring a modified stage 2 drought contingency pursuant to the District's 2015 Water Shortage Contingency Plan for compliance with State Water Board requirements.

On November 7, 2019, the RCSD Board of Directors adopted Resolution No. 2019-858 to rescind Resolution No. 657 and rescind Resolution No. 2015-820; however, the water conservation practices mandated by Resolution 2015-820 continue to be encouraged as stated in section F of Resolution No. 2019-858. These rescissions were based on improvements to the District's water supplies and repeal by the SWRCB of various water conservation regulations and requirements that were put into effect in 2015 due to statewide drought conditions. By rescinding Resolution No. 657, construction water can be obtained from either potable water hydrant meters or non-potable wells. By rescinding Resolution No. 2019-858, the aforementioned Resolution No. 111 remains the District's enforceable water waste prevention ordinance. A copy of Resolution No. 2019-858 is located in Appendix M.

- **Implementation Over the Past Five Years**

  RCSD operated under the requirements of District Resolution Nos. 657, 2015-820, 2019-858, and Ordinance No. 111. The District has provided and will continue to

provide water conservation ideas via the District's website at www.rcsd.org/water-conservation. Additionally, the District's main lobby refers customers to www.iefficient.com which is a website developed by water agencies and cities throughout the Inland Empire to share rebates, tips, and tools to conserve water.

- **Planned Implementation to Achieve Future Water Use Targets**

  RCSD will continue to operate under the requirements of District Resolution No. 2019-858 and Ordinance No. 111. However, as a result of preparing this UWMP the District is looking into updating its water conservation ordinance. Although the District will continue to provide water conservation ideas via the District's website, bill inserts, and referring customers to www.iefficient.com, they plan to partner with Western and Metropolitan so that customers may take advantage of water conservation rebate programs offered by those agencies.

9.1.2 Metering

RCSD service connections are fully metered, and all future connections will also be metered. RCSD does not currently calibrate its supply or customer meters. RCSD is in the process of converting to Automatic Meter Reading (AMR) meters and AMR technology for all of their service connections. The conversion does not include calibration. AMR technology automatically collects consumption data from water meters and transfers that data to a central database for billing, troubleshooting, and analysis. AMR technology can reduce the cost of meter reading, provide real-time information, reduce billing errors, monitor tampering, and promotes conservation with time-of-use consumption.

As of 2020, RCSD has approximately 4 dedicated landscape meters. A dedicated landscape meter, also known as an outdoor irrigation meter, is a water meter that exclusively meters water used for outdoor watering and irrigation. These dedicated landscape meters are usually used at parks, road medians, and playing fields. More recently it has become common practice to install a separate meter in homeowner's associations to measure irrigation use in common landscaped. RCSD continues its efforts to increase the number of dedicated landscape meters to monitor irrigation demand.

- **Implementation Over the Past Five Years**

  Since 2015, RCSD has replaced approximately 2,000 residential and non-residential (potable and non-potable) water meters. Meters are replaced when they stop registering or become damaged. In rare instances, if a customer believes the meter is malfunctioning, RCSD conducts a field test and installs a replacement if the meter is under- or over-registering. Approximately 30 field tests have been performed since 2015 which averages to approximately five to six field tests a year.

- **Planned Implementation to Achieve Future Water Use Targets**

  Over the next five years, the District will install AMR meters starting with 85 units in the immediate future. The District's annual budget will include funds to replace a portion of existing meters with AMR meters. Moreover, new housing developments in the District will be required in the future to install AMR meters. For example, the new 315-unit residential community currently being built (i.e., Shadow Rock) will include AMR meters.

  As indicated in their water loss audits, RCSD will work with vendors to begin regular calibrations of its well and booster pump meters annually and regularly calibrate a percentage of customer meters.

  The District will continue its efforts to ensure that all service connections are fully metered and become a part of their AMR system. Further, dedicated landscape meters will be installed where feasible. All meters will continue to be updated, replaced, and repaired as needed.

9.1.3 Conservation Pricing

Conservation pricing incentivizes customers regarding their water use. For example, the rates might be tiered at progressively higher prices to encourage efficient water use. Like a water waste ordinance, a conservation pricing structure is always in place and is not dependent upon a water shortage for implementation; although, a conservation rate structure could include a drought rate structure that has surcharges implemented during drought declarations.

The District currently implements a tiered rate structure for water services which is a form of conservation pricing. Each tier is defined by a range of water usage (Tier 1: 0- 5 units, Tier 2: 6-12 units, Tier 3: 13-20 units, Tier 4: 21-29 units, and Tier 5: 30 units and greater). One unit is equal to 100 cubic feet or 748 gallons of water. The District does not implement a drought rate structure.

- **Implementation Over the Past Five Years**

  Since 2015, the District maintained a tiered rate structure and, in accordance with Proposition 218 and compliant with AB 3030, increased rates each year except for 2019. The District adopted Ordinance No. 2020-126 on June 18, 2020 approving an annual 6 percent "Pass Through" charge to water rates in accordance with Proposition 218 and compliant with AB 3030. A copy of Ordinance No. 2020-126 is located in **Appendix O.**

- **Planned Implementation to Achieve Future Water Use Targets**

  With the adoption of Ordinance 2020-126, the District will continue to increase water rates, in accordance with Proposition 218 and compliant with AB 3030, not to exceed 6 percent annually through fiscal year (FY) 2023-2024. The new water rates were effective January 1, 2021. The District may prepare a Cost of Services Study depending on the results of the forthcoming water and wastewater master plan updates that are expected by 2022.

9.1.4 Public Education and Outreach

The District promotes water conservation education to their customers by providing water conservation tips via the District's website at www.rcsd.org/water-conservation. The water conservation tips were prepared by The Metropolitan Water District of Southern California, a wholesale water supplier. Additionally, the District's main lobby refers customers to www.iefficient.com which is a website developed by water agencies and cities throughout the Inland Empire to share rebates, tips, and tools to conserve water.

- **Implementation Over the Past Five Years**

  RCSD offered water conservation education to their customers through their website at www.rcsd.org/water-conservation and by referring customers to www.iefficient.com. RCSD was provided two towable electronic signs that were driven around the District when the statewide water conservation mandates were in-effect. Messages were displayed that encouraged and explained to customers how to conserve because of the statewide drought.

- **Planned Implementation to Achieve Future Water Use Targets**

  The District is planning to develop a partnership with Western to gain access to Metropolitan's rebate programs and make those rebates available to their customers. The District will also seek a qualified consultant to assist with development and execution of a water conservation program for the District.

9.1.5 Programs to Assess and Manage Distribution System Real Loss

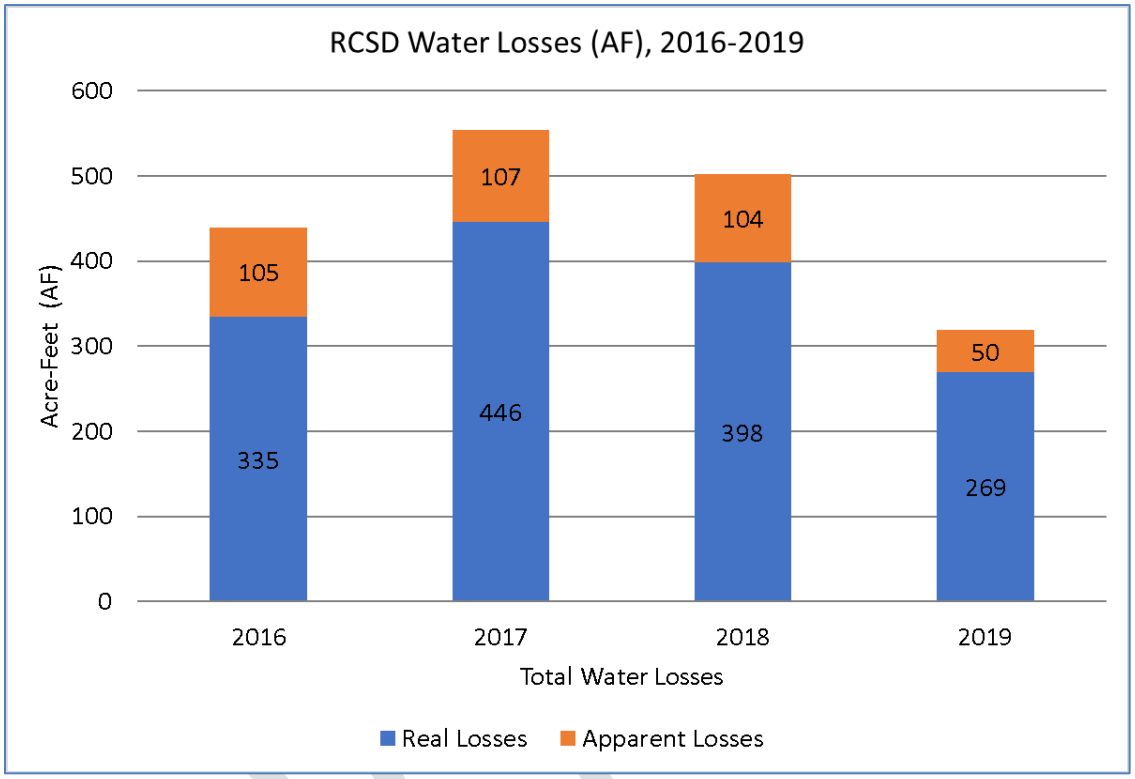
The average production losses from the years 2016 to 2019 are estimated at 9 percent based on the RCSD Water Loss Audits described in Chapter 4 (copies of the District's validated water loss audits from 2016 to 2019 are located in Appendix G). Meter data for CY 2020 suggests potable losses were reduced to 1.9%; however, this is pending confirmation with a validated water loss audit to be submitted to DWR by October 1, 2021. Most leaks occur on water service laterals (i.e., the line between the meter and the main line), which are a type of real loss and replaced completely instead of repaired. System leaks are detected visually and reported by employees and customers. The District periodically replaces water mains as part of its capital improvement program.

- **Implementation Over the Past Five Years**

  Water Code section 10608.34(i) (Senate Bill 555, 2015) directs the State Water Board to "adopt rules requiring urban retail water suppliers to meet performance standards for the volume of water losses." Pursuant to this law, urban retail water suppliers including RCSD have been annually submitting water loss audits to DWR since October 2017 (refer to

Chapter 4). Results of the water loss audits from 2016 to 2019 are shown in **Chart 9-1**, with real losses being the dominant type.

Chart 9-1 – RCSD Validated Water Losses (AF), 2016-2019 (Source: RCSD)



Losses for 2020 are preliminarily estimated at 91 AF and will be confirmed with a validated water loss audit to be submitted to DWR by October 1, 2021.

The meter and main repairs performed by the District for the past five years are detailed in **Table 9A** as evidence of RCSD's ongoing efforts to detect leaks quickly and minimize water loss.

Table 9A - RCSD Meter and Main Repairs, 2016-2020

Calendar Year	Service Connection (Meter) Breaks or Leaks	Main Breaks or Leaks
2016	144	9
2017	94	8
2018	109	10
2019	69	8
2020[1]	117	5

Source: RCSD *Large Water System Annual Report to the Drinking Water Program [Section 116530 Health & Safety Code for the years ending December 31, 2016- 2019*.

[1] RCSD *Complaints Total for 2020.*

- **Planned Implementation to Achieve Future Water Use Targets**

As suggested during the annual water loss audit validation process, RCSD will work with vendors to begin regular calibrations of its well and booster pump meters and regularly calibrate a percentage of customer meters. The District is currently reviewing all systems for reliability in preventing water loss and will conduct a system-wide condition assessment to identify issues before they become problems.

9.1.6 Water Conservation Program Coordination and Staffing Support

Currently the District does not have a water conservation coordinator, nor does it have a water conservation program in place. However, the District plans on assigning a customer service representative to manage a water conservation program once one is established by the District.

- **Implementation Over the Past Five Years**

The District does not have a conservation coordinator, nor does it have a water conservation program in place. The District's water conservation efforts were namely to educate their customers by providing water conservation tips via their website at www.rcsd.org/water-conservation and via a third-party website at www.iefficient.com.

- **Planned Implementation to Achieve Future Water Use Targets**

  The District plans on developing a water conservation program and possibly assigning a customer service representative to manage a water conservation program once one is established by the District. The District is planning to develop a partnership with Western to gain access to their rebate programs and make those available to their customers. The customer service representative would answer questions and coordinate rebate submittals with customers.

9.1.7 Other Demand Management Measures

RCSD does not have other DMMs that have a significant impact on water use to report.

9.2 ALLIANCE FOR WATER EFFICIENCY AND CALIFORNIA WATER EFFICIENCY PARTNERSHIP

Prior to 2018, RCSD was a member of the California Urban Water Conservation Council (CUWCC), the goal of which was to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations and private entities. CUWCC helped to integrate urban water conservation Best Management Practices into the planning and management of California's water resources.

In March 2018, the CUWCC was reorganized to reflect a new era in water use efficiency. The new organization is comprised of two separate sections: the California Water Efficiency Partnership (CalWEP) and its national partner, the Alliance for Water Efficiency (AWE). RCSD is a member of CalWEP. CalWEP's mission is to maximize urban water efficiency and conservation throughout California by supporting and integrating innovative technologies and practices; encouraging effective public policies; advancing research, training, and public education; and building collaborative approaches and partnerships.

9.3 FUTURE WATER USE OBJECTIVES

In 2018, Assembly Bill 1668 (AB1668) and Senate Bill 606 (SB606) were signed into law to develop a new framework for statewide long-term water conservation. Together, the programs of these laws are organized around four goals: to use water more wisely; eliminate water

waste; strengthen local drought resilience; and improve agricultural water use efficiency and drought planning. Notably, the 2018 legislation applies to the actions of DWR, SWRCB, and water suppliers; it does not set any standards or rules for individual customer use.

DWR and SWRCB developed a handbook for the 2018 legislation entitled, *Making Water Conservation a California Way of Life – Primer of 2018 Legislation on Water Conservation and Drought Planning, Senate Bill 606 (Hertzberg) and Assembly Bill 1668 (Friedman)* (November 2018). To fully plan, develop and implement the new framework, DWR and the SWRCB will work closely together over the next few years to develop new standards for indoor residential water use, outdoor residential water use, CII water use for landscape irrigation with dedicated meters, and water loss.

Pursuant to the 2018 legislation, this UWMP includes a Water Shortage Contingency Plan and a Drought Risk Assessment that is due July 1, 2021 and every five years thereafter. The District will submit to DWR an annual water shortage assessment report beginning June 1, 2022. Beginning November 1, 2023 and annually thereafter, RCSD will submit a report to DWR on urban water use objectives, actual urban water use, implementation of CII water use performance measures, and progress toward an urban water use objective (yet to be determined). Lastly, by January 1, 2024 the District will submit to DWR a supplement to the 2020 UWMP that describes how demand management measures are implemented to achieve their yet-to-be-determined urban water use objective.

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CHAPTER 10 PLAN ADOPTION, SUBMITTAL & IMPLEMENTATION

This chapter provides guidance to address the Water Code (CWC) requirements for a public hearing, the Plan adoption process, submitting an adopted Plan to DWR, Plan implementation, and the process for amending an adopted Plan.

Beginning in 2020, the Water Code requires that the Water Shortage Contingency Plan (WSCP) must have the same process for public hearing, adoption, submittal, and amendments as the UWMP.

10.1 INCLUSION OF ALL 2020 DATA

The Water Code requires current year water use and planning data to be included in the UWMP. Since RCSD is reporting on a calendar year basis, this UWMP and WSCP includes data through calendar year 2020 (January 1 through December 31). As such, this UWMP and WSCP could not be completed until after the end of calendar year 2020.

10.2 NOTICE OF PUBLIC HEARING

Water Code requires that a public hearing must be held by the District prior to adopting the UWMP and/or WSCP. All public input shall be considered by the Board of Directors. There are two audiences within the service area that are required to be noticed for the public hearing: cities and counties, and the general public.

10.2.1 Notice to Cities and Counties

60 Day Notification

All cities and counties within which the District provides water supplies must be notified that the District will be reviewing the UWMP and considering amendments or changes to the Plan. This notice must be sent at least 60 days prior to the public hearing. In order to provide ample opportunity to participate in the UWMP process.

RCSD sent the first notice on March 10, 2021 notifying interested entities of the District's intention to review and update the UWMP including the WSCP, well in advance of the required 60 days prior to the public hearing. Copies of all notifications are located in Appendix D. (CWC § 10621(b) and §10642)

Notice of Public Hearing

The District delivered a second notice to cities, the county, and interested entities on April 28, 2021, to confirm the time and place of the public hearing. The notice also reaffirmed that the Draft UWMP and Draft WSCP would be publicly available for viewing at the District Web site (www.rcsd.org) and a printed hardcopy at the District Headquarters no less than two weeks prior to the public hearing. The draft documents were posted on the District Web site and the District Headquarters beginning on June 3, 2021. Copies of all notifications are located in Appendix D. Required notifications to the cities and the county within the District service area are listed in **Submittal Table 10-1** to confirm receipt of a 60-day notice and notice of public hearing.

Submittal Table 10-1 Retail: Notification to Cities and Counties

City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Jurupa Valley	Yes	Yes
County Name *Drop Down List*	**60 Day Notice**	**Notice of Public Hearing**
Add additional rows as needed		
Riverside County	Yes	Yes
San Bernardino County	Yes	Yes

In addition to the city and the county, RCSD also notified the following list of interested entities.

- City of Jurupa Valley
- City of Riverside Public Utilities
- City of Riverside Water Quality Control Plant
- County of Riverside
- County of San Bernardino
- Cucamonga Valley Water District
- Inland Empire Utilities Agency
- Jurupa Community Services District
- Jurupa Unified School District
- Santa Ana River Water Company
- Western-San Bernardino Watermaster
- Western Municipal Water District
- West Valley Water District

- City of Colton Water Dept.
- Riverside Highland Water Company
- Santa Ana Watershed Project Authority

10.2.2 Notice to the Public

The public was notified of the public hearing and availability to review the draft UWMP and draft WSCP in the local newspaper (*The Press Enterprise)* once a week for two successive weeks pursuant to Government Code section 6066, on June 3 and June 10, 2021. RCSD also placed an announcement on their Web site. The draft UWMP and draft WSCP were posted on the District Web site and at the District Headquarters beginning on Thursday, June 3, 2021. Copies of all notifications are located in Appendix D. (CWC §10642)

10.3 PUBLIC HEARING AND ADOPTION

Pursuant to the Water Code, the RCSD Board of Directors held a public hearing on Thursday, June 17, 2021 to receive public comment on the draft UWMP and the draft WSCP (CWC §10608.26(a)). The public hearing was included as an agenda item, which is included in Appendix A.

The Water Code requires the public hearing to accomplish all of the following in order to comply with the Water Conservation Act of 2009 (SB X7-7):

- Allow community input on the District's implementation plan;[1]
- Consider the economic impacts of the District's implementation plan; and
- Adopt a method for determining the District's urban water use target.[2]

Therefore, the public hearing provided information on the District's baseline values, water use targets and compliance, and implementation plan required in the Water Conservation Act of 2009 (SB X7-7).

[1] The term "implementation plan" as mentioned in the Water Conservation Act of 2009 (SB X7-7) is not defined. But according to DWR staff, it is meant to suggest the District's plans, as described in the UWMP, to continue meeting its water conservation target.
[2] The method chosen by RCSD to calculate the 2020 water use target has been, *Method 1: Eighty percent of the water supplier's baseline per capita water use,* as defined in CWC Section 10608.20(a)(1).

10.3.1 Document Adoption

The 2020 UWMP and WSCP were formally adopted by the RCSD Board of Directors on June 17, 2021 following a public hearing on June 17, 2021 (CWC § 10642). Copies of the adoption resolutions are included in Appendix A.

10.4 PLAN SUBMITTAL

10.4.1 Document Submittal to DWR

The 2020 UWMP, including the WSCP must be submitted to DWR within 30 days of adoption and by July 1, 2021 (CWC §10621(e)). Document submittal to DWR is done electronically through WUEdata. After the UWMP and WSCP are submitted, DWR will review the plan utilizing the checklist provided in Appendix B and decide as to whether or not the documents address the requirements of the Water Code. The DWR reviewer will contact RCSD as needed during the review process. Upon completion of the Plan review, DWR will issue a letter to the District with results of the review.

Proof of submittal to DWR is located in **Appendix P.**

10.4.2 Electronic Data Submittal

DWR developed an online submittal tool, WUEdata, which was used for the 2015 UWMPs. This tool has been updated for submitting the 2020 UWMPs. The tool accepts complete UWMPs, as well as tabular data from all the data tables. The WUE data online submittal tool is online at https://wuedata.water.ca.gov/. (CWC § 10644(a)(2))

10.4.3 Submittal to the California State Library

No later than 30 days after adoption, RCSD shall submit a CD or hardcopy of the adopted 2020 UWMP, including the adopted WSCP, to the California State Library (CWC § 10644(a)(1)) located at:

California State Library
Government Publications Section
Attention: Coordinator, Urban Water Management Plans
P.O. Box 942837

Sacramento, CA 94237-0001

Or by courier or overnight carrier to the State Library at:

California State Library
Government Publications Section
Attention: Coordinator, Urban Water Management Plans
900 N Street
Sacramento, CA 95814

Proof of submittal to the State Library is located in **Appendix P.**

10.4.4 Submittal to Cities and Counties

No later than 30 days after adoption of the 2020 UWMP, including the WSCP, the District shall submit a hard or electronic copy of the documents to the County of Riverside (CWC §10635(c)).

Proof of submittal to the City of Jurupa Valley and County of Riverside is located in **Appendix P.**

10.5 PUBLIC AVAILABILITY

The adopted 2020 UWMP, including the adopted WSCP, are available for public review at RCSD Headquarters, located at 3590 Rubidoux Boulevard, Jurupa Valley, California, 92509 during normal business hours Monday through Friday 7:00 AM to 5:00 PM. In addition, a copy of the adopted UWMP and WSCP can be found on RCSD's Web site (www.rcsd.org) for public viewing anytime. (CWC § 10645(a) and 10645(b))

Proof of public availability is located in **Appendix P.**

10.6 NOTIFICATION TO PUBLIC UTILITIES COMMISSION

Pursuant to Water Code, those water suppliers that are regulated by the California Public Utilities Commission (CPUC) must submit their UWMP and WSCP to the CPUC as part of its general rate case filings. Because RCSD is not regulated by the CPUC, the District will not be submitting their documents to the CPUC. (CWC §10621(c))

10.7 AMENDING AN ADOPTED PLAN

If RCSD decides to amend the adopted 2020 UWMP, then each of the steps for notification, public hearing, adoption, and submittal must also be followed for the amended plan. This includes providing copies of amendments or changes to the plan to DWR, California State Library, and any city or county within which the supplier provides water within 30 days of adoption. (CWC §10644(a)(1))

10.7.1 Amending a Water Shortage Contingency Plan

If RCSD decides to revise the adopted 2020 WSCP after DWR approves the 2020 UWMP, then RCSD must submit to DWR an electronic copy through the WUE Data Portal of its revised WSCP within 30 days of its adoption. (CWC § 10644(b))

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ALBERT A.
WEBB
ASSOCIATES

Corporate Headquarters
3788 McCray Street
Riverside, CA 92506
951.686.1070

Palm Desert Office
41-990 Cook St., Bldg. I - #801B
Palm Desert, CA 92211
951.686.1070

Murrieta Office
41391 Kalmia Street #320
Murrieta, CA 92562
951.686.1070