2015 San Bernardino Valley
Regional Urban Water Management Plan

Prepared for:

San Bernardino Valley Municipal Water District
East Valley Water District
City of Loma Linda
City of Redlands
City of San Bernardino Municipal Water Department
West Valley Water District
Yucaipa Valley Water District
City of Colton
City of Rialto
Riverside Highland Water Company

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Prepared by:

WSC
Water Systems Consulting, Inc.

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Appendices

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B	Sustainable Water Use and Demand Reduction (SB X7-7)
C	Outreach Materials
D	Adoption Resolutions
E	DWR Population Tool Output
F	Climate Change Vulnerability Checklist
G	Water Shortage Contingency Plan Ordinance / Resolutions
H	Orange County Judgment
I	Western San Bernardino Judgment
J	Lytle Creek Judgment
K	Rialto Basin Decree
L	Agreement between RHWC and City of Riverside
M	Lease between RHWC and WMWD
N	IRWMP Vulnerability to Catastrophic Interruption
O	AWWA Water Audits
P	CUWCC Coverage Report
Q	DWR Standard SB X7-7 Tables
R	DWR UWMP Tables
S	DWR Checklists for UWMP Requirements

Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
AB	Assembly Bill
Accord	Seven Oaks Accord
AF	acre foot
AFY	acre feet per year
AHHG	Area of Historic High Groundwater
AMR	Automatic Meter Reader
APA	Administrative Procedures Act
AWWA	American Water Works Association
BBW	Beaumont Basin Watermaster
BDCP	Bay Delta Conservation Plan
Bear Valley Mutual	Bear Valley Mutual Water Company
Big Bear Municipal	Big Bear Municipal Water District
BMP	Best Management Practice
BTAC	Basin Technical Advisory Committee
CAL Green Code	2013 California Green Building Standards Code

CALWARN	California Water/Wastewater Agency Response Network
CAT	Climate Action Team
CCF	hundred cubic feet
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFS	cubic feet per second
CII	Commercial, Industrial, and Institutional
CIMIS	California Irrigation Management Irrigation System
Colton	City of Colton
Conservation District	San Bernardino Valley Water Conservation District
CUWCC	California Urban Water Conservation Council
CSUSB	California State University San Bernardino
CVP	Central Valley Project
DCR	DWR SWP Delivery Capacity Report
DDW	SWRCB Division of Drinking Water
Delta	Sacramento-San Joaquin River Delta
DFW	California Department of Fish and Wildlife
DIP	Ductile Iron Pipe
DMM	Demand Management Measure
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
ERNIE	Emergency Response Network of the Inland Empire
ESA	Endangered Species Act
ET	Evapotranspiration
ETo	Reference Evapotranspiration
EVWD	East Valley Water District
FWC	Fontana Water Company
GAC	granulated activated carbon
GIS	Geographic Information System
GPCD	gallons per capita per day
GPM	gallons per minute
HCP	Upper Santa Ana River Habitat Conservation Plan
HECW	High Efficiency Clothes Washer
HET	High Efficiency Toilet
IERCD	Inland Empire Resources Conservation District
IRWMP	Integrated Regional Water Management Plan
IX	ion exchange
JPA	Joint Powers Authority
KAF	thousand acre feet
KAFY	thousand acre feet per year

LAFCO	Local Agency Formation Commission
Loma Linda	City of Loma Linda
MAF	million acre-feet
MCL	Maximum Contaminant Level
Metropolitan	The Metropolitan Water District of Southern California
MF	Multi-family
MG	million gallons
MGD	million gallons per day
MOU	Memorandum of Understanding
MSL	Mean Sea Level
MTBE	Methyl Tertiary Butyl Ether
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OCWD	Orange County Water District
OWOW	SAWPA One Water One Watershed IRWMP
PCE	perchloroethylene
Plan	Regional Urban Water Management Plan for San Bernardino Valley
PVC	polyvinyl chloride
QWEZ	Qualified Water Efficient Landscaper
Redlands	City of Redlands
RHWC	Riverside Highland Water Company
RIX	Rapid Infiltration and Extraction
RPA	Reasonable and Prudent Alternative
RUWMP	Regional Urban Water Management Plan
RWQCB	Regional Water Quality Control Board
SAF	San Andreas Fault
SANBAG	San Bernardino Association of Governments
SAR	Santa Ana River
SARI	Santa Ana Regional Interceptor
SARWQCB	Santa Ana Regional Water Quality Control Board
SAWPA	Santa Ana Watershed Project Authority
SBBA	San Bernardino Basin Area
SBMWD	City of San Bernardino Municipal Water Department
SBX7-7	Senate Bill 7 of Special Extended Session 7
SCAG	Southern California Association of Governments
SF	Single Family
SGPWA	San Gorgonio Pass Water Agency
SOC	Synthetic Organic Chemicals
SOI	Sphere of Influence
State Water	State Water Project Water

SWP	State Water Project
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
TCE	trichloroethylene
ULFT	Ultra-Low Flush Toilet
USARW	Upper Santa Ana River Watershed
USAWRA	Upper Santa Ana Water Resources Association
UV	ultraviolet
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act
Valley District	San Bernardino Valley Municipal Water District
VOC	volatile organic compound
WBIC	Weather Based Irrigation Controller
Western	Western Municipal Water District of Riverside County
WSCP	water shortage contingency plan
WVWD	West Valley Water District
WFF	Water Filtration Facility
WRCC	Western Regional Climate Center
WRWFF	Wochholz Regional Water Recycling Facility
WSS	Water Sense Specification
WTP	water treatment plant
WWTP	waste water treatment plant
YVRWFF	Yucaipa Valley Regional Water Filtration Facility
YVWD	Yucaipa Valley Water District

Executive Summary

This Urban Water Management Plan (Plan) is a tool that provides a summary of anticipated supplies and demands for the years 2015 to 2040. This document was prepared for the following agencies within the San Bernardino Valley Municipal Water District service area:

- San Bernardino Valley Municipal Water District (wholesale water agency)
- East Valley Water District
- City of Loma Linda
- City of Redlands
- City of San Bernardino Municipal Water Department
- West Valley Water District
- Yucaipa Valley Water District
- City of Colton
- City of Rialto
- Riverside Highland Water Company

Figure ES-1 illustrates the geographic location of the agencies participating in this Regional Urban Water Management Plan (RUWMP). This Plan was prepared consistent with the Urban Water Management Plan Act (Act), the Water Conservation Act of 2009 (SB X7-7) and the Department of Water Resources (DWR) Guidebook for Urban Water Suppliers.

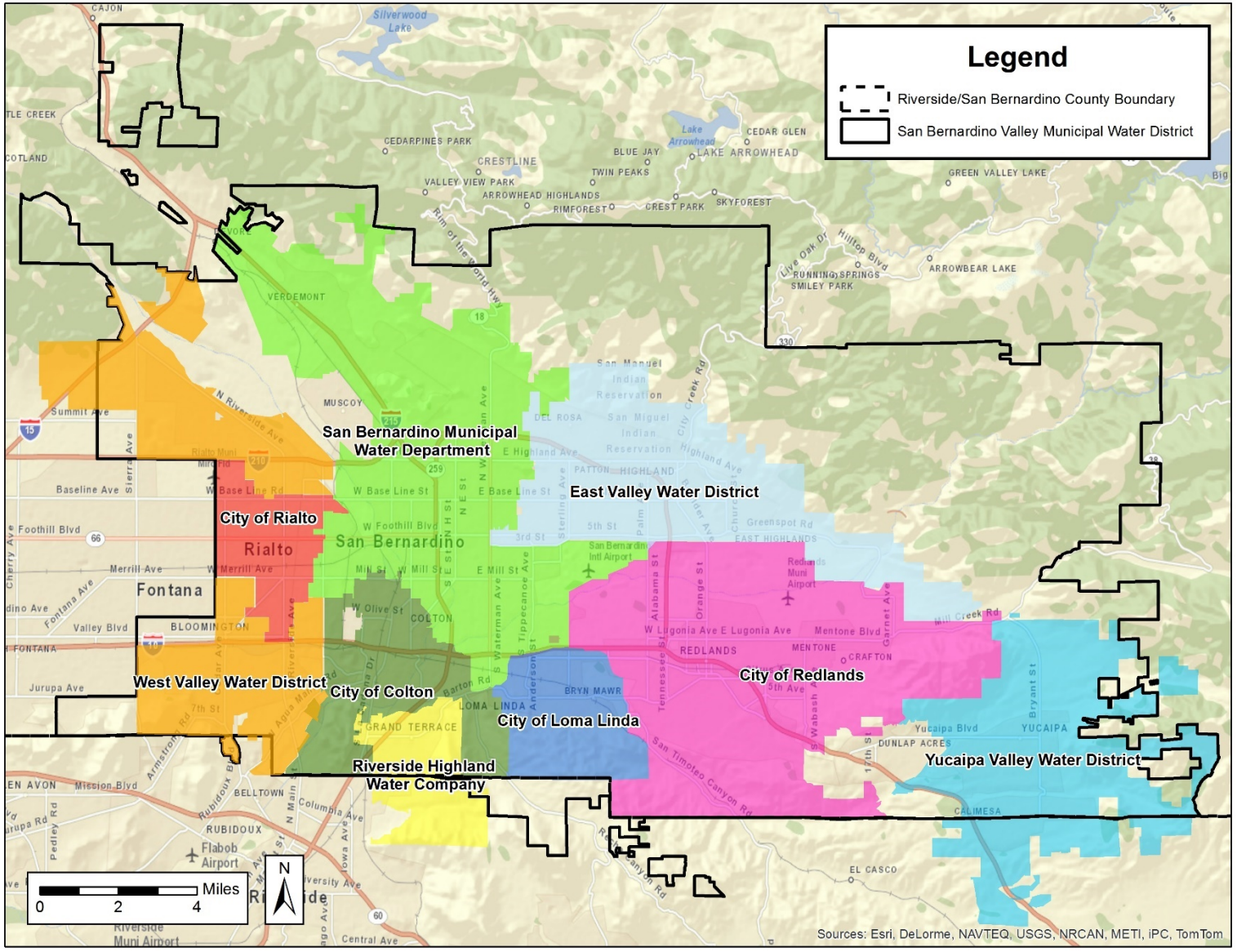


Figure ES-1. San Bernardino Valley Municipal Water District Service Area

Urban Water Management Plan Requirements

The Urban Water Management Plan Act requires evaluation of the following:

- Whether supplies will be sufficient to meet demands during the following hydrologic year types
    - Normal/average year
    - Single dry year
    - Multiple dry year sequence;
- Existing baseline water use in terms of gallons per capita per day (GPCD) (applies only to retail water suppliers);
- Targets for future water use consistent with the Water Conservation Act of 2009 (SB X7-7) which seeks a 20 percent reduction in per capita water use by 2020;
- Demand Management Measures (DMMs) implemented or planned for implementation as well as the methods proposed for achieving future water use targets;
- Water shortage contingency planning; and
- Notification and coordination with other water agencies, land use entities, and the community.

Meeting Demands in Normal, Single-Dry, and Multiple Dry Year Periods

Water Supplies

The participating agencies meet most of their demands with local groundwater and surface water. Imported water from the State Water Project (SWP) is also an important element of the supply portfolio. Recycled water makes up a relatively small part of existing supplies, but a number of programs are being planned that would increase the use of recycled water. The supplies used in 2015 by the agencies participating in the RUWMP and the 2040 anticipated regional supplies available are summarized in the figures below. Because of the on-going drought, local groundwater provided a larger share of the supply in 2015 than in an average year.

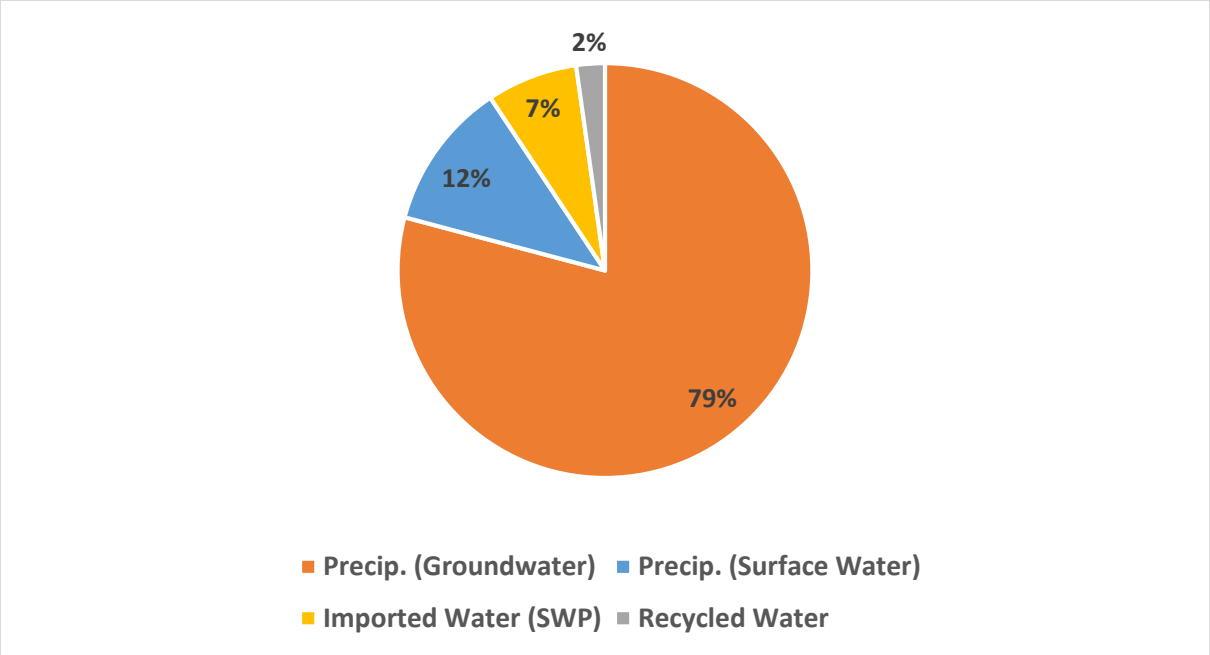


Figure ES-2. 2015 Supply Sources Utilized by Agencies Participating in RUWMP

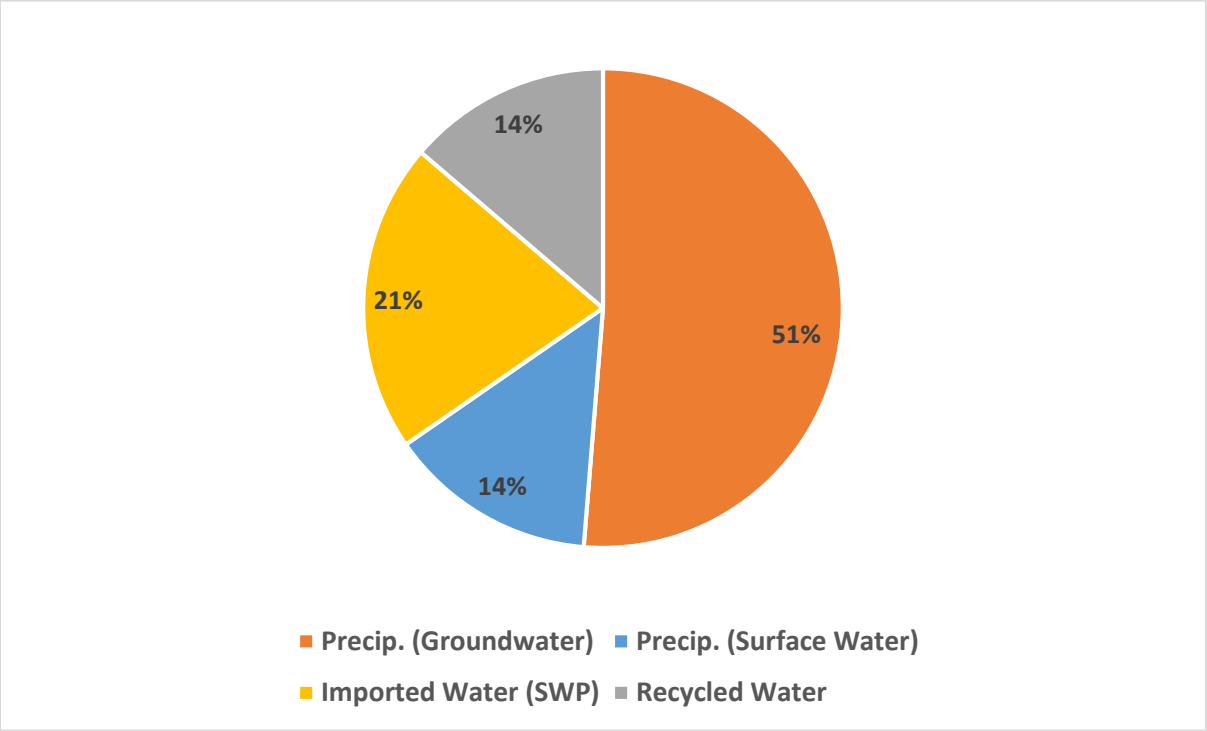


Figure ES-3. 2040 Anticipated Regional Supply Sources Available

An overview of water supplies is provided in Chapter 2, and the water sources available to each agency are presented in the individual agency chapters.

Water Demands

Each retail agency has prepared an estimate of its water demands through 2040. These demands are summarized in the figure below. The total demands are lower than the forecast in the 2010 RUWMP. The recent drought and mandatory water conservation measures have reduced demands considerably from the estimates that were presented in the 2010 RUWMP.

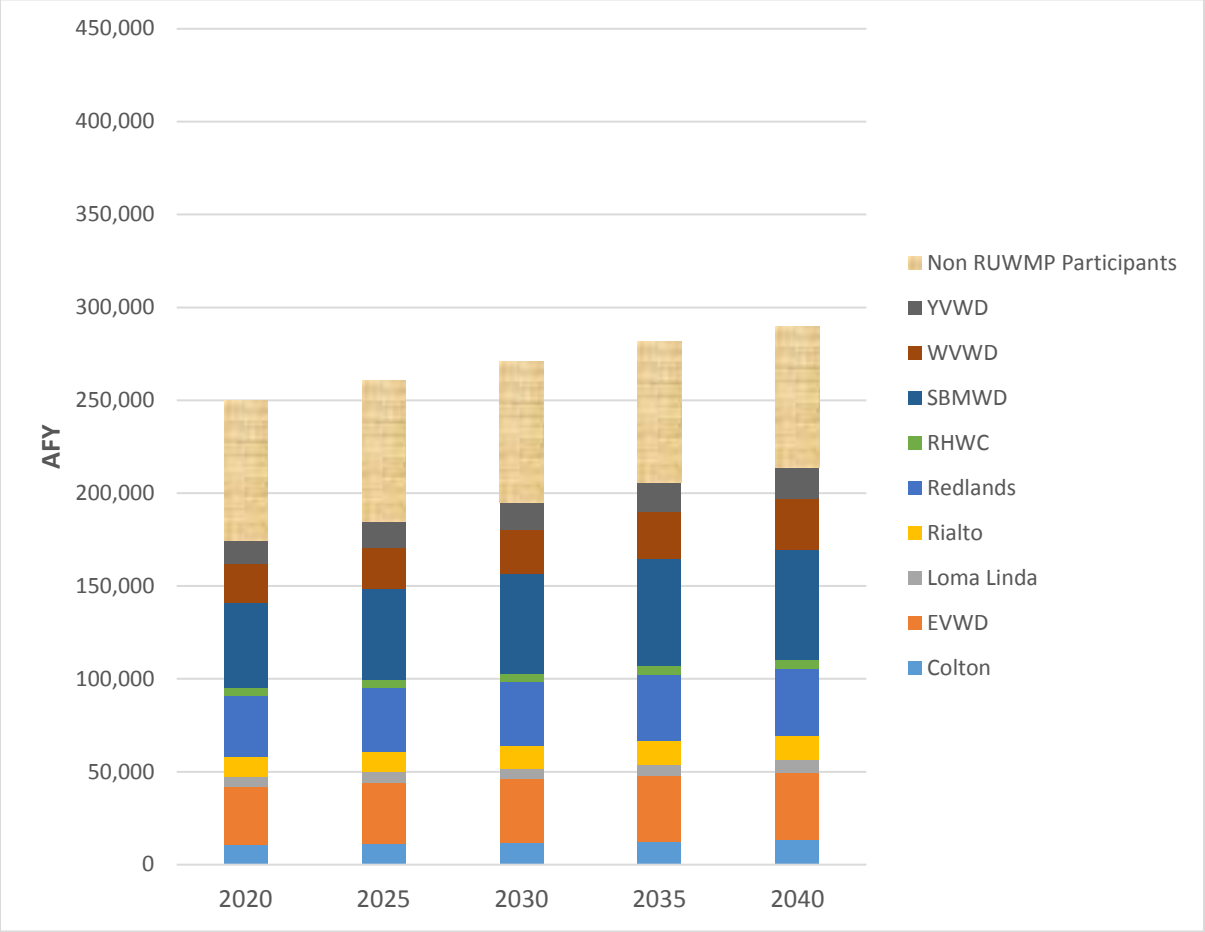


Figure ES-4. Anticipated Demands for Retail Agencies in the San Bernardino Valley

Supplies versus Demands

The UWMP Act requires urban water suppliers to compare projected water use with the expected water supply for a 20-year period. Chapter 4 presents a regional comparison of supplies and demands. In addition, each retail agency's individual chapter includes a comparison of the agency's anticipated supplies and demands through 2040. The agencies participating in this RUWMP have identified adequate supplies to meet anticipated demands through 2040. The regional supplies and demands, as well as the demands including a 10-percent reliability margin, are shown on the following figures.

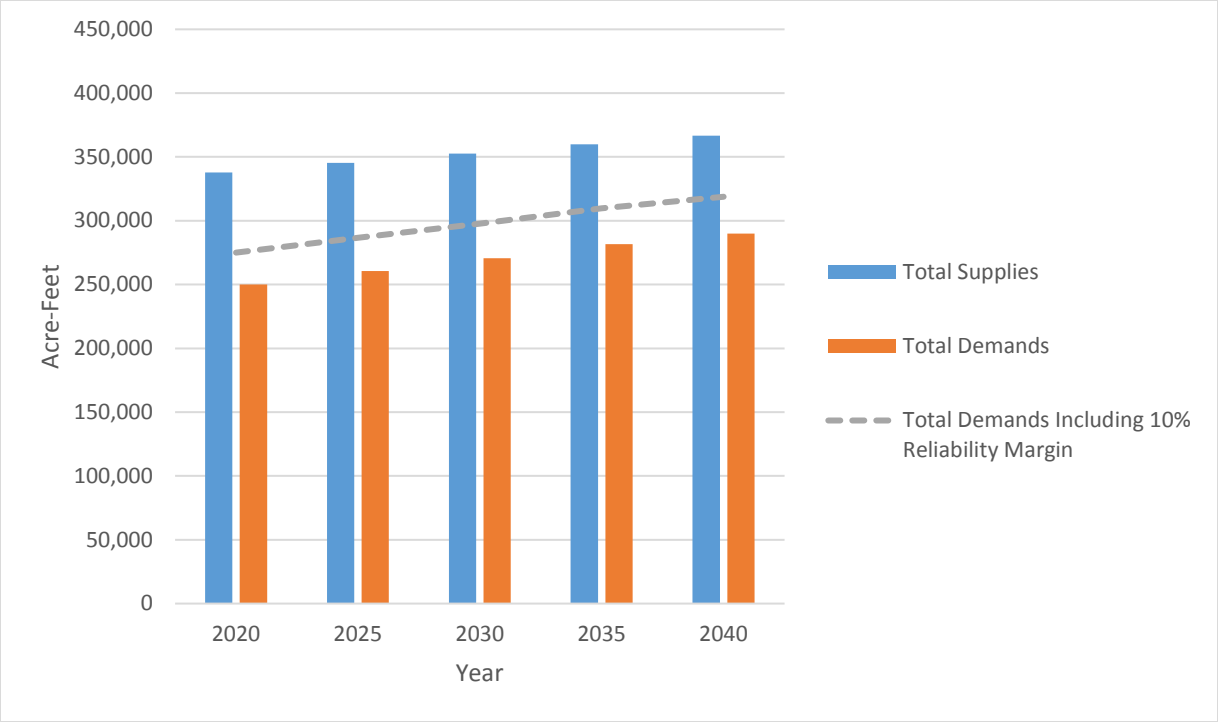


Figure ES-5. Estimated Regional Normal Year Supplies and Demands

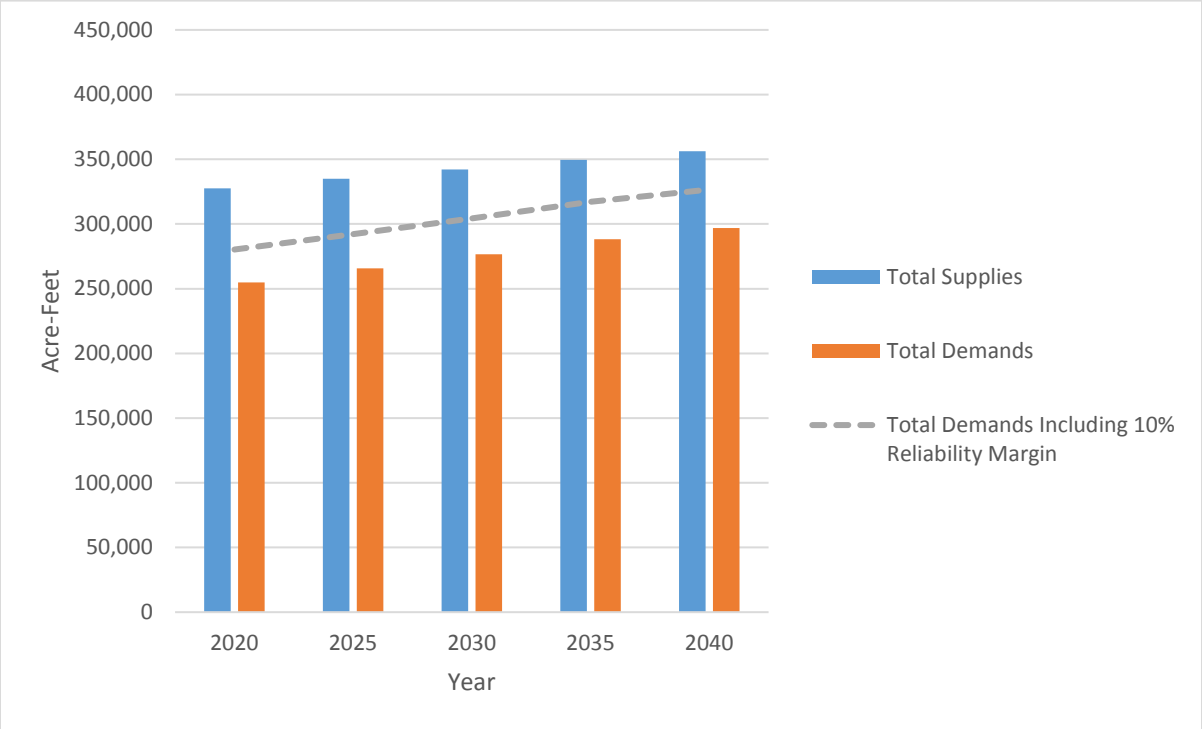


Figure ES-6. Estimated Regional Single Dry Year Supplies and Demands

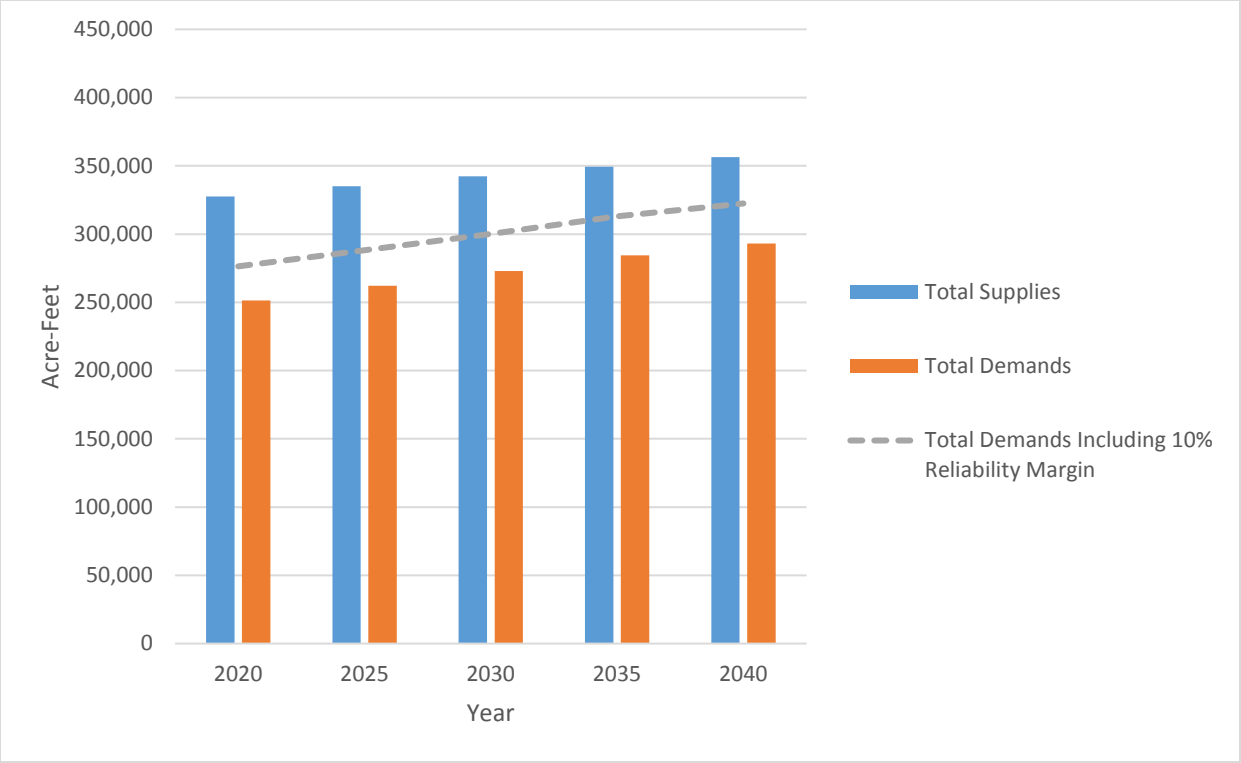


Figure ES-7. Estimated Regional Multiple Dry Year Supplies and Demands

Compliance with the Water Conservation Act of 2009 (SBX7-7)

The Water Conservation Act of 2009 (SB X7-7) provides the regulatory framework to support a statewide reduction in urban per capita water use. Each retail water supplier must demonstrate compliance with SB X7-7 by determining its baseline water consumption and then establishing a future water use target in gallons per capita per day (GPCD).

Each agency calculated its baseline water use and its water use target in 2010. However, DWR provided a new interactive tool for estimating service area population for the 2015 UWMP cycle. Therefore, this report includes updated calculations of baseline water use and the 2020 water use target for each retail agency. These values are summarized in the figure below.

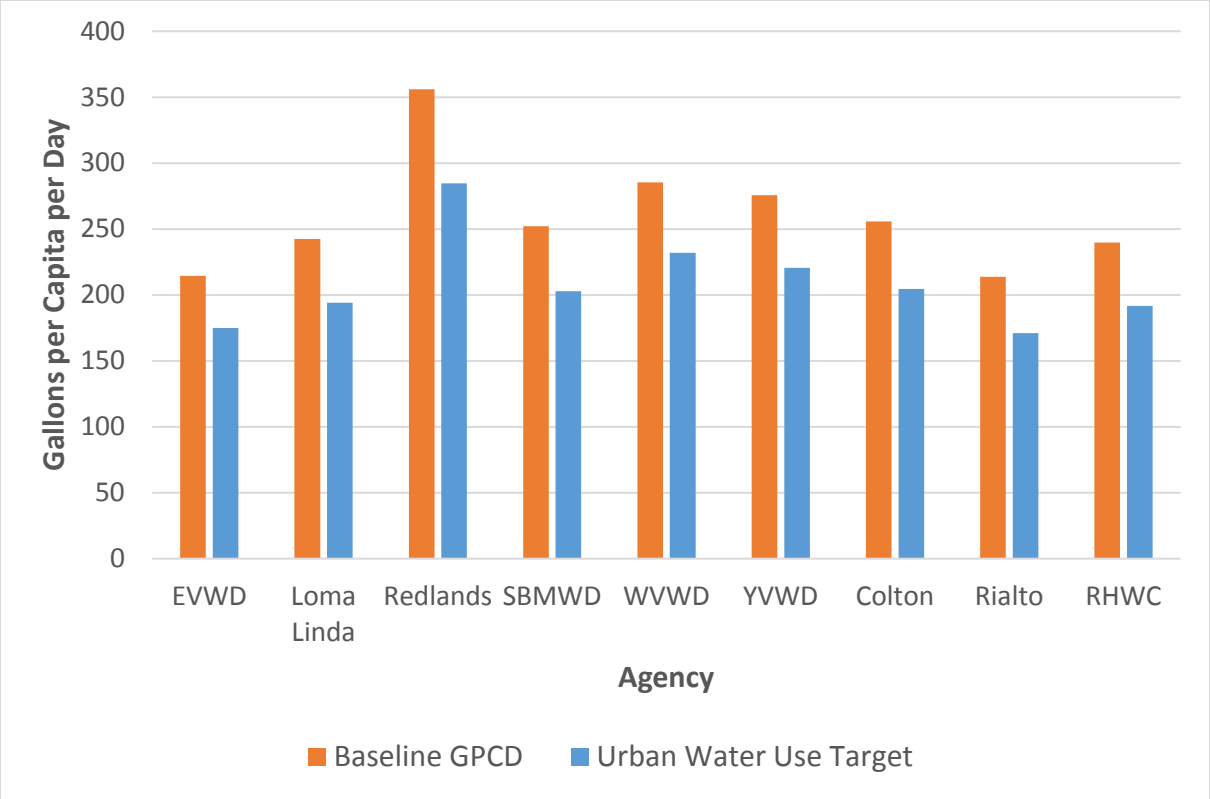


Figure ES-8. Baseline Water Use and Compliance Targets for Participating Agencies

Demand Management Measures

Demand Management Measures (DMMs) are used by each water supply agency to manage and reduce water consumption. The DWR Guidebook identifies categories of DMMs for which retail and wholesale agencies should report their progress. The individual chapters for each agency (Chapters 6 through 15) include a discussion of each agency's DMMs, and how they plan to maintain water use below the compliance targets established by SB X7-7.

Water Shortage Contingency Planning

Water supplies may be interrupted or reduced significantly through drought, natural disaster such as earthquake, a regional power outage, or a toxic spill that prevents delivery due to poor water quality. All of the participating agencies adopted the Upper Santa Ana River Watershed Integrated Regional Water Management Plan, which includes strategies and projects to overcome water shortages during emergencies. In addition, all the agencies participate in the Emergency Response Network of the Inland Empire (ERNIE) which is a water/wastewater mutual aid network within San Bernardino and Riverside counties.

Each of the retail water agencies (as detailed in the chapters for each retail agency) has identified voluntary and mandatory conservation measures that will go into effect during different stages of water shortage.

Notification and Coordination Requirements

The UWMP Act encourages input to an UWMP. Specifically, the UWMP Act requires:

- That each urban water supplier notifies any city or county within which the supplier provides water, with at least 60 days' notice of the public hearing on its UWMP.
- Prior to adopting a plan, an urban water supplier shall hold a public hearing. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier at least once 14 days prior to the hearing and again 7 days prior to the hearing.
- Prior to adopting a plan, a retail water supplier shall conduct at least one public hearing to allow community input regarding the urban retail water supplier's implementation plan for complying with SB X7-7, to consider the economic impacts of the urban retail water supplier's implementation plan for complying with SB X7-7, and to adopt a method for determining its urban water use target.
- Within 30 days of adoption, an urban water supplier shall file a copy of the plan with DWR, the California State Library, and any city or county within which the supplier provides water. No later than 30 days after filing a copy of a plan with DWR, an urban water supplier shall make the plan available for review during normal business hours.

The agencies participating in this RUWMP sent letters to cities and counties, as well as other water agencies, notifying them of RUWMP preparation and soliciting input to the Plan. Notification letters were sent in February and March 2016. Each agency published hearing notices consistent with UWMP Act requirements and conducted a public hearing to receive comments on the RUWMP.

Following adoption, the Plan will be available during normal business hours at the administrative offices of each agency:

San Bernardino Valley Municipal Water District	380 E. Vanderbilt Way San Bernardino, CA
East Valley Water District	31111 Greenspot Road Highland, CA
City of Loma Linda	Department of Public Works 2551 Barton Road Loma Linda, CA
City of Redlands	Municipal Utilities Department and Engineering Department 35 Cajon Street Redlands, CA
City of San Bernardino Municipal Water Department	Water Department 300 N. D Street San Bernardino, CA
West Valley Water District	855 W. Baseline Road Rialto, CA
Yucaipa Valley Water District	12770 Second Street Yucaipa, CA
City of Colton	Public Works and Utility Services Department 160 S. 10th Street Colton, CA
City of Rialto	335 West Rialto Avenue Rialto CA
Riverside Highland Water Company	12374 Michigan Street Grand Terrace CA

Following adoption, this RUWMP was submitted to DWR, the California State Library, and all the cities and counties within the service areas of the participating agencies.

The final report will be available on Valley District's web site at www.sbvmwd.com\reports.

1 Introduction

1.1 Overview

This document presents the 2015 Regional Urban Water Management Plan (Plan) for the San Bernardino Valley area, represented by the San Bernardino Valley Municipal Water District (Valley District) service area, and nine participating retail water purveyors: City of Colton, East Valley Water District, City of Loma Linda, City of Redlands, City of Rialto, Riverside Highland Water Company, City of San Bernardino Municipal Water Department, West Valley Water District, and Yucaipa Valley Water District.

This chapter describes the general purpose of the Plan, discusses Plan implementation, and provides general information about Valley District, the retail purveyors, and service area characteristics.

1.2 Purpose

The California Water Code requires urban water suppliers within the state to prepare and adopt Urban Water Management Plans (UWMPs) for submission to the California Department of Water Resources (DWR). The UWMPs, which are required to be filed every five years, must satisfy the requirements of the Urban Water Management Planning Act (UWMP Act) of 1983, including amendments that have been made to the UWMP Act and other applicable regulations. The UWMP Act requires urban water suppliers servicing 3,000 or more connections, or supplying more than 3,000 acre-feet (AF) of water annually, to prepare an UWMP. For wholesale water agencies without retail connections, the requirement is triggered by the annual delivery of 3,000 AF or more.

An UWMP is a planning tool that generally guides the actions of urban water suppliers. It provides managers and the public with a broad perspective on a number of water supply issues. It is not a substitute for project-specific planning documents, nor was it intended to be when mandated by the State Legislature. For example, the Legislature mandated that a plan include a section which "describes the opportunities for exchanges or water transfers on a short-term or long-term basis." (California Urban Water Planning Act, Article 2, Section 10630[d].) The identification of such opportunities, and the inclusion of those opportunities in a general water service reliability analysis, neither commit a water management agency to pursue a particular water exchange/transfer opportunity, nor precludes a water management agency from exploring exchange/transfer opportunities not identified in the plan. The preparation or adoption of an UWMP is not subject to review under the California Environmental Quality Act (CEQA) (Water Code section 10652). Before an urban water supplier is able to implement any potential future sources of water supply identified in a plan, detailed project plans are prepared and approved, financial and operational plans are developed, and all required environmental analysis is completed.

This Plan is intended to function as a planning tool to guide broad-perspective decision making by the management of water suppliers. It is important that this Plan be viewed as a long-term, general planning document, rather than as an exact blueprint for supply and demand management. Water management in California is not a matter of certainty, and planning projections may change in response to a number of factors. From this perspective, it is appropriate to look at the Plan as a general planning framework, not a specific action plan. It is an effort to generally answer a series of planning questions including:

- What are the potential sources of supply and what is the reasonable probable yield from them?
- What is the probable demand, given a reasonable set of assumptions about growth and implementation of good water management practices?
- How well do supply and demand figures match up, assuming that the various probable supplies will be pursued by the implementing agency?

Using these "framework" questions and resulting answers, the implementing agency will pursue feasible and cost-effective options and opportunities to meet demands. Valley District and the retail water purveyors will explore enhancing water supplies from traditional sources such as the State Water Project (SWP), as well as other options, including groundwater extraction, water recycling, storm water capture, and water banking/conjunctive use. Specific planning efforts will be undertaken in regard to each option, involving detailed evaluations of how each option would fit into the overall supply/demand framework, how each option would impact the environment, and how each option would affect customers. The objective of these more detailed evaluations would be to find the optimum portfolio of conservation and supply programs that ensure that the needs of the customers are met.

The UWMP Act requires preparation of a plan that:

- Accomplishes water supply planning over a minimum 20-year period in five year increments. (Valley District and the purveyors are going beyond the requirements of the Act by developing a plan which spans 25 years.)
- Identifies and quantifies adequate water supplies, including recycled water, for existing and future demands, in normal, single-dry, and multiple-dry years. (Valley District and the purveyors are going beyond the requirements of the Act by evaluating a single wet year scenario in addition to the required scenarios.)
- Documents conservation programs to encourage efficient use of urban water supplies.

Senate Bill X7-7 (SB X7-7), also known as the Water Conservation Act of 2009, which was incorporated into the UWMP Act in 2009, requires that all water suppliers increase water use efficiency with the overall goal to decrease per-capita water consumption within the state by 20 percent by the year 2020. SB X7-7 required DWR to develop certain criteria, methods, and standard reporting forms through a public process that could be used by water suppliers to establish their baseline water use and determine their water conservation targets. SBX 7-7 and guidance prepared by DWR specify methodologies for determining the baseline water demand, 2015 interim urban water use target, and the 2020 urban water use targets. The baseline and targets were required to be reported in the 2010 UWMP for each urban retail water supplier, but the baselines and targets have been re-calculated in this Plan to reflect updated service area population data. This Plan is required to assess compliance with the 2015 interim urban water use target and monitor progress toward compliance with the 2020 urban water use target.

Valley District and the retail water purveyors wish to deliver a sufficient, reliable, and high quality water supply for their customers, even during dry periods. Based on conservative water supply and demand assumptions over the next 25 years, in combination with conservation of non-essential demand during certain dry years, the Plan successfully achieves this goal.

1.3 Organization of the Plan

This Plan is organized to act as the 2015 UWMP for Valley District as a wholesale supplier. This Plan also acts as the 2015 UWMP for the nine retail purveyors participating in the plan. Together, these parts comprise the 2015 Regional Urban Water Management Plan (RUWMP).

Chapters 1 through 5 of the Plan focus on the regional analysis for the Valley District service area, serving as a "common base" on which the individual purveyor analyses rely. Regional data presented in Chapters 2 and 3 informs the individual retail purveyor analysis. Analysis of individual water agencies is provided in Chapters 6 through 15.

Each individual purveyor chapter provides service area information with 25-year projections, a description of water sources and reliability of supply, transfer and exchange opportunities, water use by customer type and timeframe (past, present, and projected), as well an evaluation of demand management measures.

Throughout this report, water volume is represented in units of acre-feet (AF). Data have been compiled on a calendar year basis.

A checklist to ensure compliance of this Plan with the Act requirements is provided for each agency in Appendix S.

1.4 Implementation of the Plan

This Plan has been prepared for Valley District, a wholesale water supplier, and for the following retail purveyors:

- East Valley Water District
- City of Loma Linda
- City of Redlands
- City of San Bernardino Municipal Water Department
- West Valley Water District
- Yucaipa Valley Water District
- City of Colton
- City of Rialto
- Riverside Highland Water Company

These ten urban water suppliers have coordinated the preparation of this Plan. The purpose of jointly preparing the Plan was to facilitate a consistent evaluation of water sources common to the various agencies, to take advantage of group knowledge and experience, and to reduce preparation costs. However, each agency has reviewed, will adopt, and will implement the portions of this Plan relevant to their agency. Errors or omissions by any one participant in this Plan should not invalidate the information put forward by the other agencies who participated in Plan preparation.

1.4.1 Joint Preparation of the Plan

Water purveyors are permitted by DWR to work together to develop a cooperative regional plan. This approach has been adopted by the Valley District and the nine purveyors which are jointly sponsoring the current Plan. Agency coordination for this Plan is summarized in Table 1-1.

1.4.2 Plan Adoption

Valley District and the retail purveyors adopted the 2015 RUWMP in June 2016. Following adoption and within 30 days of Board approval, the RUWMP was submitted to DWR, the California State Library, and any city or county within which Valley District or any of the purveyors provides water supplies. Resolutions adopting the RUWMP are provided in Appendix D.

This plan includes all information necessary to meet the requirements of Water Conservation Act of 2009 (Wat. Code, §§ 10608.12-10608.64) and the Urban Water Management Planning Act (Wat. Code, §§ 10610-10656).

1.4.3 Public Outreach

The water purveyors have encouraged community participation in water planning. Interested groups were informed about the development of the Plan along with the schedule of public activities. Copies of the Draft Plan were made available at the water purveyors' offices and websites, and notices sent to the cities, and the Counties of San Bernardino and Riverside, as well as to interested parties as identified in Table 1-1.

Copies of the public outreach materials are included in Appendix C.

Table 1-1 Agency Coordination Summary

Agency	Participated in UWMP	Invited to Participate in Draft	Commented on Draft	Attended Public Meetings	Contacted for Assistance	Sent Notice of Intent to Adopt
San Bernardino Valley Municipal Water District	X	X	X	X		X
City of Colton	X	X	X	X		X
City of Loma Linda	X	X	X	X		X
City of Redlands	X	X	X	X		X
City of Rialto	X	X	X	X		X
City of San Bernardino	X	X	X	X		X
East Valley Water District	X	X	X	X		X
Riverside Highland Water Company	X	X	X	X		X
West Valley Water District	X	X	X	X		X
Yucaipa Valley Water District	X	X	X	X		X
Baseline Garden Mutual Water Company		X				X
Bear Valley Mutual Water Company		X				X
Beaumont-Cherry Valley Water District		X				X
Big Bear Mutual Water District		X				X
Cal. State San Bernardino/Water Resources Institute		X				X
City of Beaumont		X				X
City of Calimesa		X				X
City of Fontana		X				X
City of Grand Terrace		X				X
City of Highland		X				X
City of Jurupa Valley		X				X
City of Riverside		X				X
City of Yucaipa		X	X			X
County of Riverside		X				X
County of San Bernardino		X				X
Fontana Water Company		X				X
Fontana Union Water Company		X				X
Inland Empire Resources Conservation District		X				X
Muscoy Mutual Water Company		X				X
San Bernardino County – Land Use Services Department		X				X

Agency	Participated in UWMP	Invited to Participate in Draft	Commented on Draft	Attended Public Meetings	Contacted for Assistance	Sent Notice of Intent to Adopt
San Bernardino County Local Agency Formation Commission (LAFCO)		X				X
San Bernardino National Forest, US Forest Service		X				X
San Bernardino Valley Water Conservation District		X				X
San Gorgonio Pass Water Agency		X				X
Santa Ana Watershed Project Authority		X				X
South Mesa Water Company		X				X
Terrace Water Company		X				X
Western Heights Mutual Water Company		X				X
Western Municipal Water District		X				X
Yucaipa-Calimesa Joint Unified School District		X				X

1.5 Water Agencies of the San Bernardino Valley

1.5.1 San Bernardino Valley Municipal Water District

Valley District was formed in 1954, under the Municipal Water District Act of 1911 (California Water Code Section 71000 et seq.) as a regional agency to plan a long-range water supply for the San Bernardino Valley. Valley District imports water into its service area through participation in the SWP and manages groundwater storage within its boundaries, and also provides stormwater disposal, recreation, and fire protection services. Valley District does not deliver water directly to retail water customers.

Valley District covers about 325 square miles mainly in southwestern San Bernardino County, about 60 miles east of Los Angeles. It spans the eastern two-thirds of the San Bernardino Valley, the Crafton Hills, and a portion of the Yucaipa Valley and includes the cities and communities of San Bernardino, Colton, Loma Linda, Redlands, Rialto, Fontana, Bloomington, Highland, East Highland, Grand Terrace, Mentone, and Yucaipa. Figure 1-1 shows Valley District's service area, along with the service areas of the retail water purveyors.

Valley District is responsible for long-range water supply management, including importing supplemental water, and is responsible for storage management of most of the groundwater basins within its boundaries and for groundwater extraction over the amount specified in the Orange County and Western Judgments explained below. Valley District has specific responsibilities for monitoring

groundwater supplies in the San Bernardino Basin Area (SBBA) and Rialto-Colton Subbasin, and for a portion of the minimum Santa Ana River (SAR) flow required at the Riverside Narrows.

Valley District has developed a “cooperative recharge program” that is being successfully implemented to help replenish groundwater, using both SWP water and local runoff. Valley District takes delivery of SWP water at the Devil Canyon Power Plant Afterbay, which is located just within its northern boundary. The SWP water is conveyed 17 miles eastward to various spreading grounds and agricultural and wholesale domestic delivery points in the SBBA. Water is also conveyed westward for direct delivery in the Rialto-Colton Subbasin.

In the 1960s, dry conditions resulted in the over-commitment of water resources in the SAR watershed which led to lawsuits between water users in the upper and lower watersheds regarding both surface flows and groundwater. The lawsuits culminated in 1969 in the Orange County and Western Judgments. Under the terms of the judgments, Valley District became responsible for providing a portion of the specified SAR base flow to Orange County and for replenishing the SBBA under certain conditions. If the conditions of either judgment are not met by the natural water supply, including new conservation, Valley District is required to deliver supplemental water to offset the deficiency. The judgments resolved the major water rights issues that had prevented the development of long-term, region-wide water supply plans and established specific objectives for the management of the groundwater basins.

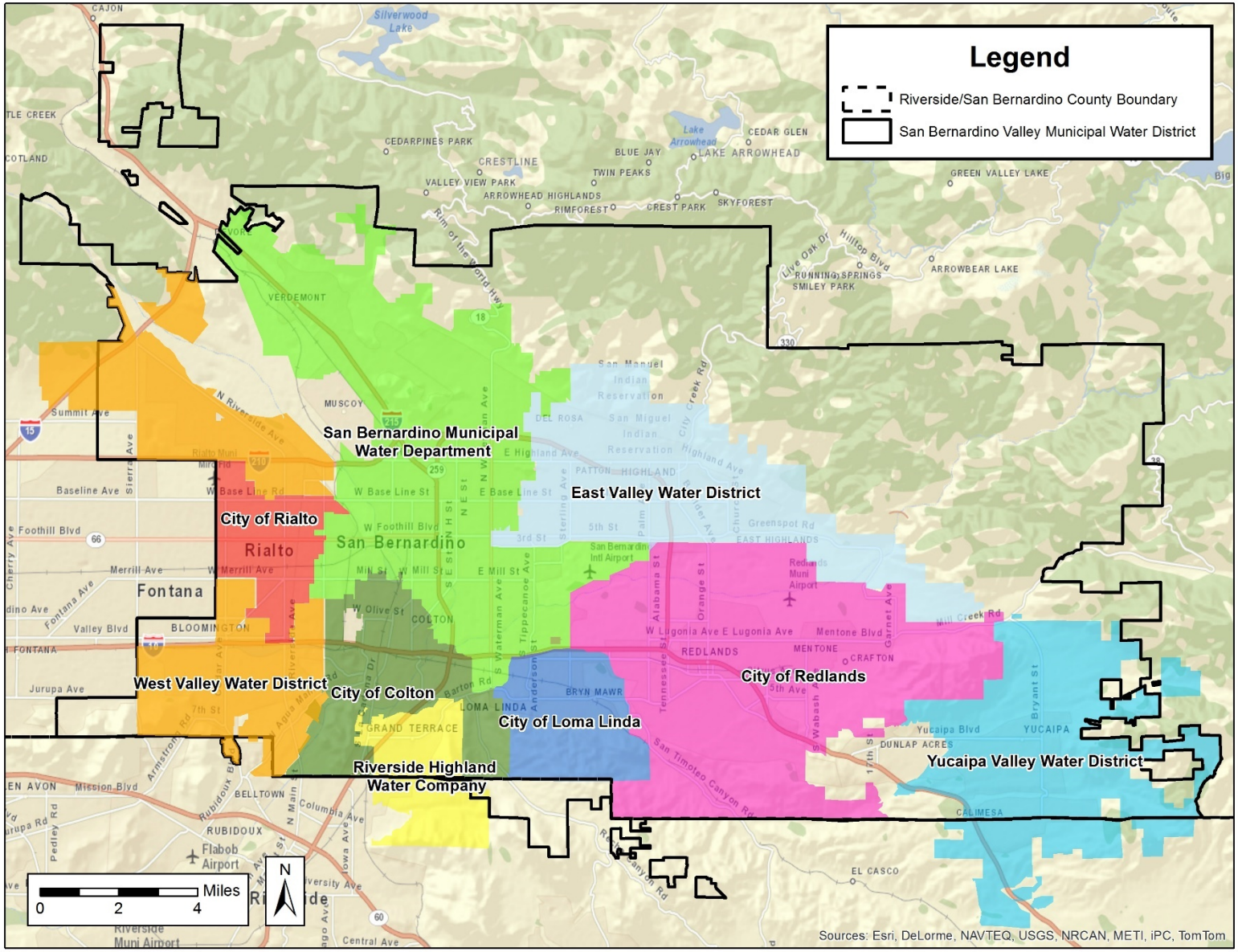


Figure 1-1. San Bernardino Valley Municipal Water District Service Area

Court-appointed Watermaster committees administer both Judgments; as a member of the Watermaster committees, Valley District is directly responsible for ensuring that groundwater and surface water resources are effectively managed for the benefit of the region.

Valley District participated in the development of the 2010 San Bernardino Valley RUWMP.

1.5.2 Retail Water Purveyors

A total of nine retail water purveyors in the Valley District service area participated in the development of this RUWMP. Seven also participated in the 2010 RUWMP, and two new purveyors have joined the RUWMP for 2015.

1.5.2.1 East Valley Water District

East Valley Water District (EVWD) is a California Special District, established in 1954, that provides water and wastewater services. EVWD encompasses 30.1 square miles along the foothills of the San Bernardino Mountains within the cities of San Bernardino and Highland, and the county of San Bernardino. As an agency tasked with managing a critical resource, EVWD is committed to innovative leadership and world class public service. Figure 1-2 illustrates the EVWD service area.

EVWD participated in the 2010 San Bernardino Valley RUWMP.

1.5.2.2 City of Loma Linda

The City of Loma Linda (hereafter Loma Linda) was incorporated in 1970. The Public Works Department provides potable water service to an area of approximately 7.8 square miles that includes the Veterans Administration Hospital and the Loma Linda Community Hospital. Loma Linda does not provide water service to the Loma Linda University Campus or Medical Center facilities, which operate on a separate self-contained system. Loma Linda's primary water supply is groundwater from the SBBA. Loma Linda also has two emergency connections to the City of San Bernardino and one to the City of Redlands to meet its supplemental needs. Loma Linda also provides wastewater collection service. Figure 1-3 illustrates the Loma Linda service area.

Loma Linda participated in the 2010 San Bernardino Valley RUWMP.

1.5.2.3 City of Redlands

For more than 90 years, the City of Redlands (hereafter Redlands) has been providing high-quality drinking water to the Redlands and Mentone areas. The water utility service area generally coincides with the area designated by the Local Area Formation Commission (LAFCO) as the City and its sphere of influence. The service area encompasses 36 square miles inside the Redlands city boundaries and a relatively small area outside the city boundaries, but within the sphere of influence. Redlands supplies a blend of local groundwater, local surface water, and imported water purchased from Valley District. Redlands also owns and operates a sewer collection system and the Redlands Wastewater Treatment Facility, which can treat 7.2 million gallons per day (mgd) of wastewater for industrial and irrigation purposes, including supplying water to the Southern California Edison Mountainview Power Plant. Figure 1-4 illustrates the Redlands service area.

Redlands participated in the 2010 San Bernardino Valley RUWMP.

1.5.2.4 City of San Bernardino

The City of San Bernardino is served by a municipal utility, the San Bernardino Municipal Water Department (SBMWD). SBMWD was created as a municipal utility by Article 9 of the City of San Bernardino Charter. The SBMWD water service area is approximately 45 square miles, providing water to approximately 200,000 persons in the City of San Bernardino and unincorporated areas of San Bernardino County. SBMWD produces all of its water supply from wells in the SBBA. In addition to potable water, SBMWD provides wastewater collection and treatment services and is developing a recycled water system for groundwater recharge and non-potable reuse. Figure 1-5 illustrates the SBMWD service area.

SBMWD participated in the 2010 San Bernardino Valley RUWMP.

1.5.2.5 West Valley Water District

West Valley Water District (WVWD) is a public agency of the State of California and was formed in 1952 under the name of the Bloomington County Water District. Since that time, West Valley has gone through several name changes and has acquired numerous other water suppliers with water rights dating back over 100 years. WVWD is located primarily within southwestern San Bernardino County and a small portion within northern Riverside County. The majority of WVWD's service area lies within Valley District's boundaries. WVWD's service area is approximately 31 square miles, serving portions of the Cities of Rialto, Fontana, Colton, and Jurupa Valley, and unincorporated areas of San Bernardino County. WVWD utilizes water from five groundwater basins and treats surface water from Lytle Creek and SWP water at its 14.4-mgd Oliver P. Roemer Water Filtration Facility to serve over 20,000 water service connections. Figure 1-6 illustrates the WVWD service area.

WVWD participated in the 2010 San Bernardino Valley RUWMP.

1.5.2.6 Yucaipa Valley Water District

Yucaipa Valley Water District (YVWD) is a special district that provides water supply, treatment, and distribution, recycled water supply and distribution services, and wastewater collection and treatment. Formed in 1971, YVWD acquired many of the private water companies serving the Yucaipa Valley. Its most recent consolidations of water services occurred with the acquisition of the Harry V. Slack Water Company in 1987 and the Wildwood Canyon Mutual Water Company in 1992. YVWD serves customers in the Cities of Calimesa and Yucaipa, and portions of Riverside and San Bernardino Counties. Figure 1-7 illustrates the YVWD service area.

YVWD participated in the 2010 San Bernardino Valley RUWMP.

1.5.2.7 City of Colton

The City of Colton is a community founded in 1875 and incorporated in 1887. The City of Colton (hereinafter, Colton), through the Water and Wastewater Division of its Public Utilities Department, provides water service to a majority of the residents and businesses located within Colton's corporate boundary, as well as to those in certain adjacent unincorporated areas of San Bernardino County. All of Colton's water supply is local groundwater pumped from the SBBA, the Rialto-Colton sub basin, and the Riverside North sub basin. Figure 1-8 illustrates the Colton service area.

Colton participated in the 2010 San Bernardino Valley RUWMP.

1.5.2.8 City of Rialto

The City of Rialto is provided water service by three different water agencies: the City of Rialto municipal water system through its water system operator (Veolia, through Rialto Water Services), the West Valley Water District (WVWD), and the Fontana Union Water Company (FUWC). Each agency has its own water supply and resources, and must meet its demands through those resources. The City of Rialto municipal water system provides potable, non-potable, and recycled water at retail to customers primarily within the City of Rialto and serves approximately one-half of the population of the City, or approximately 54,000 customers as of December, 2015. The service area is essentially the incorporated area of the City of Rialto located between Interstate 10 and State Route 210.

The City's water supply sources include local surface water from Lytle Creek, groundwater from five local groundwater basins, and water purchased from Valley District and delivered through the Baseline Feeder. Surface water treatment of Lytle Creek water is provided by the Oliver P. Roemer Water Filtration Facility owned and operated by WVWD. Rialto owns a portion of the capacity of that plant. Rialto also has an agreement to purchase excess SBBA water form SBMWD, when available. Rialto provides wastewater collection and treatment services for its residents and some residents of the City of Fontana through an Extra-Territorial Agreement. Rialto currently provides recycled water service to the California Department of Transportation for landscape irrigation. Figure 1-9 illustrates the Rialto service area.

The City of Rialto prepared a separate UWMP in 2010 and did not participate in the 2010 San Bernardino Valley RUWMP.

1.5.2.9 Riverside Highland Water Company

The Riverside Highland Water Company (RHWC) provides domestic and irrigation water services to the City of Grand Terrace, portions of the City of Colton, and portions of the unincorporated areas of the Counties of San Bernardino and Riverside. RHWC's service area lies partially within the Valley District service area and partially within the service area of Western Municipal Water District (Western). RHWC's customers include single and multi-family residential, commercial, industrial and agricultural users. The RHWC service area is approximately 85 percent built-out and has several developments currently under construction or approved by the planning departments of the governing agencies. RHWC obtains water from the Lytle Creek Subbasin, the SBBA, the Rialto-Colton Subbasin, Riverside North and Riverside South Basins. Figure 1-10 illustrates the RHWC service area.

RHWC prepared a separate 2010 UWMP and did not participate in the 2010 San Bernardino Valley RUWMP.

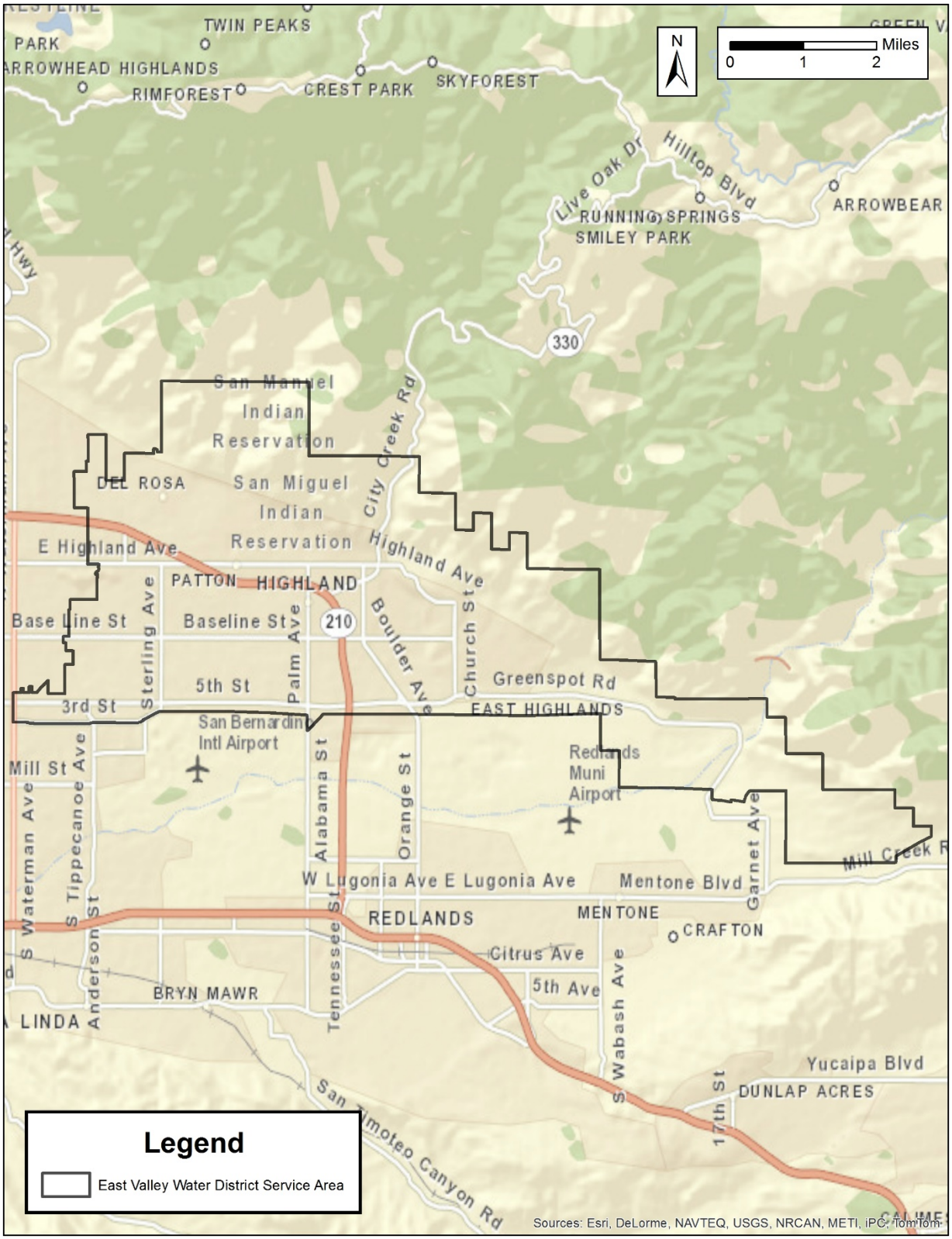


Figure 1-2. East Valley Water District Service Area

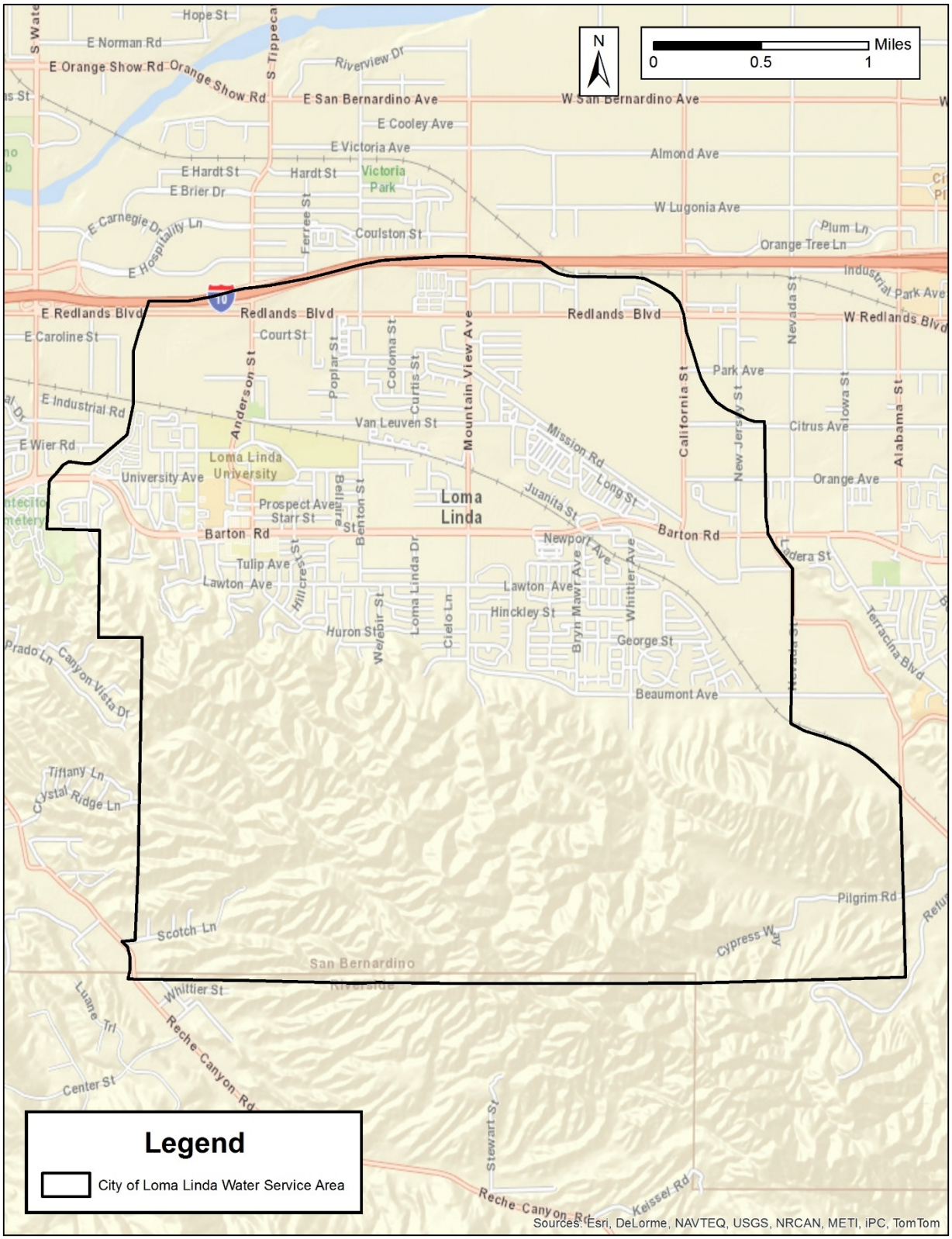


Figure 1-3. City of Loma Linda Service Area

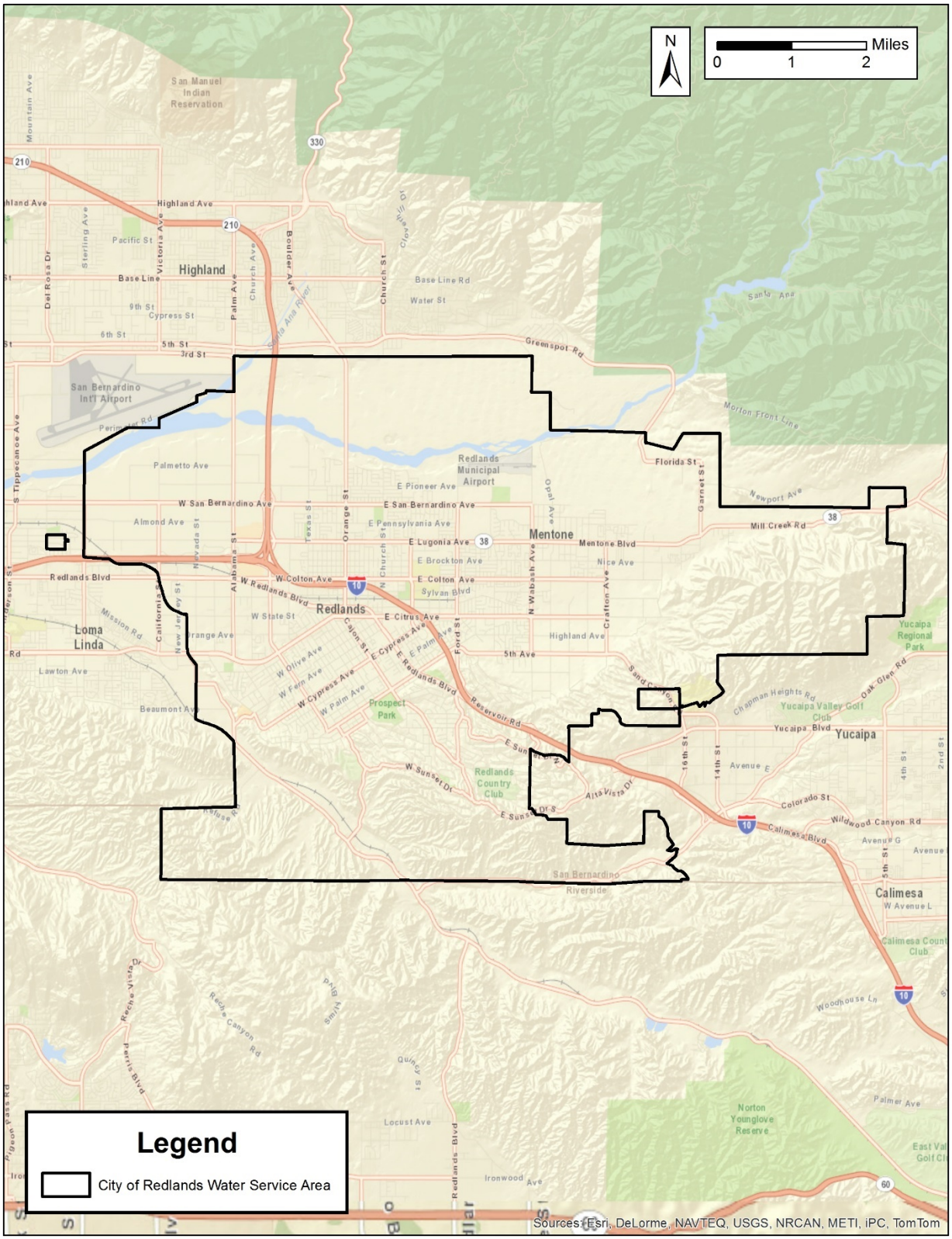


Figure 1-4. City of Redlands Service Area

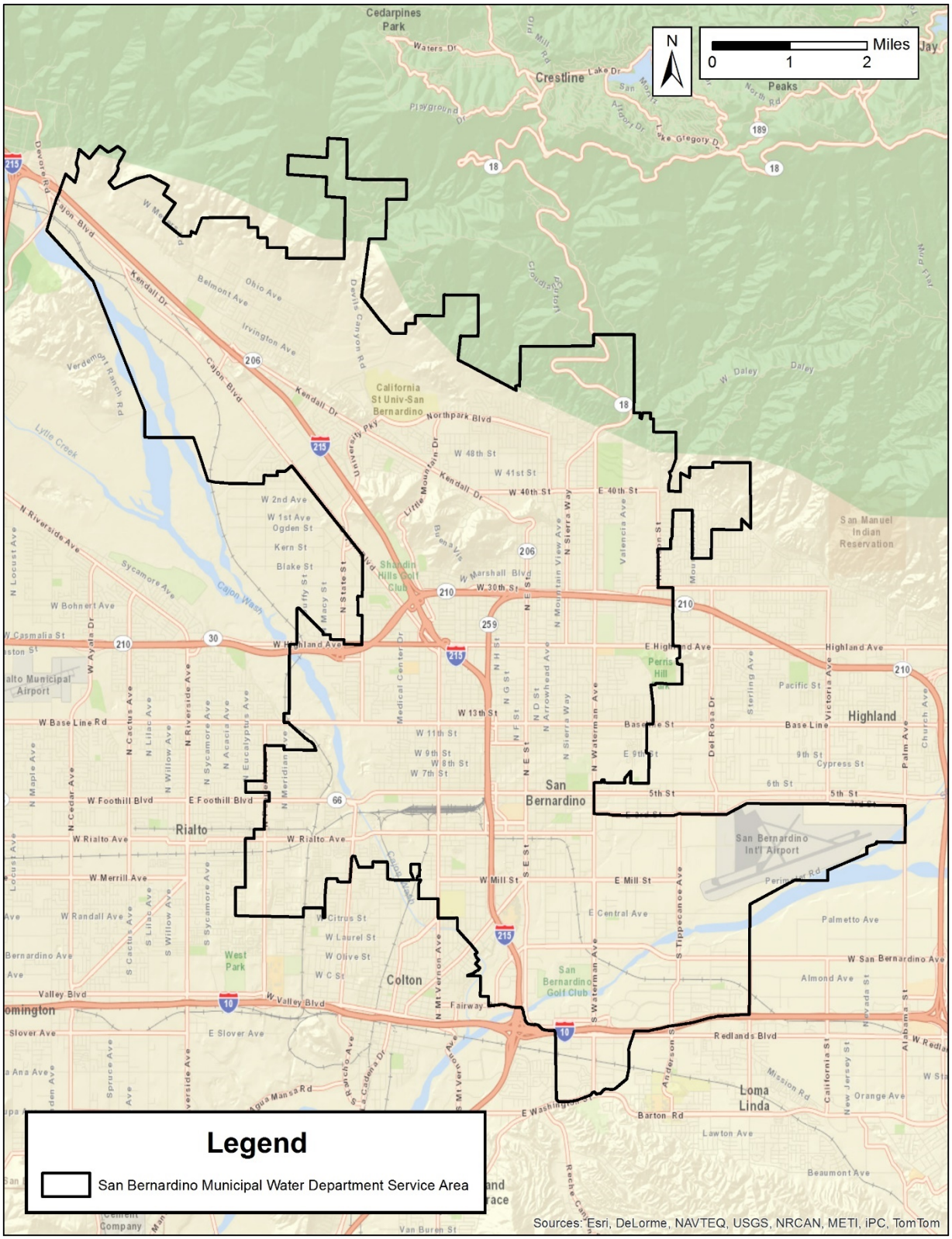


Figure 1-5. City of San Bernardino Municipal Water Department Service Area

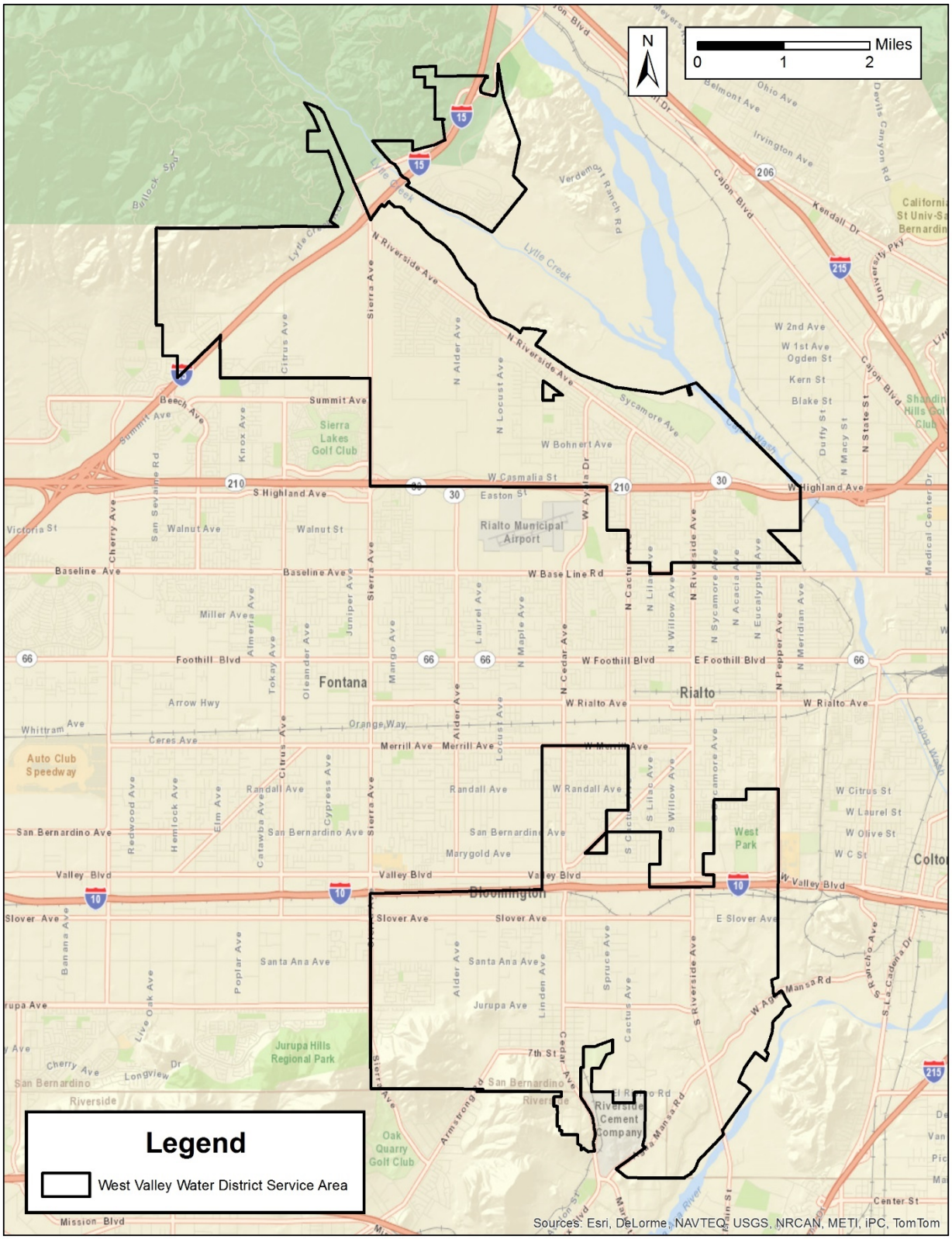


Figure 1-6. West Valley Water District Service Area

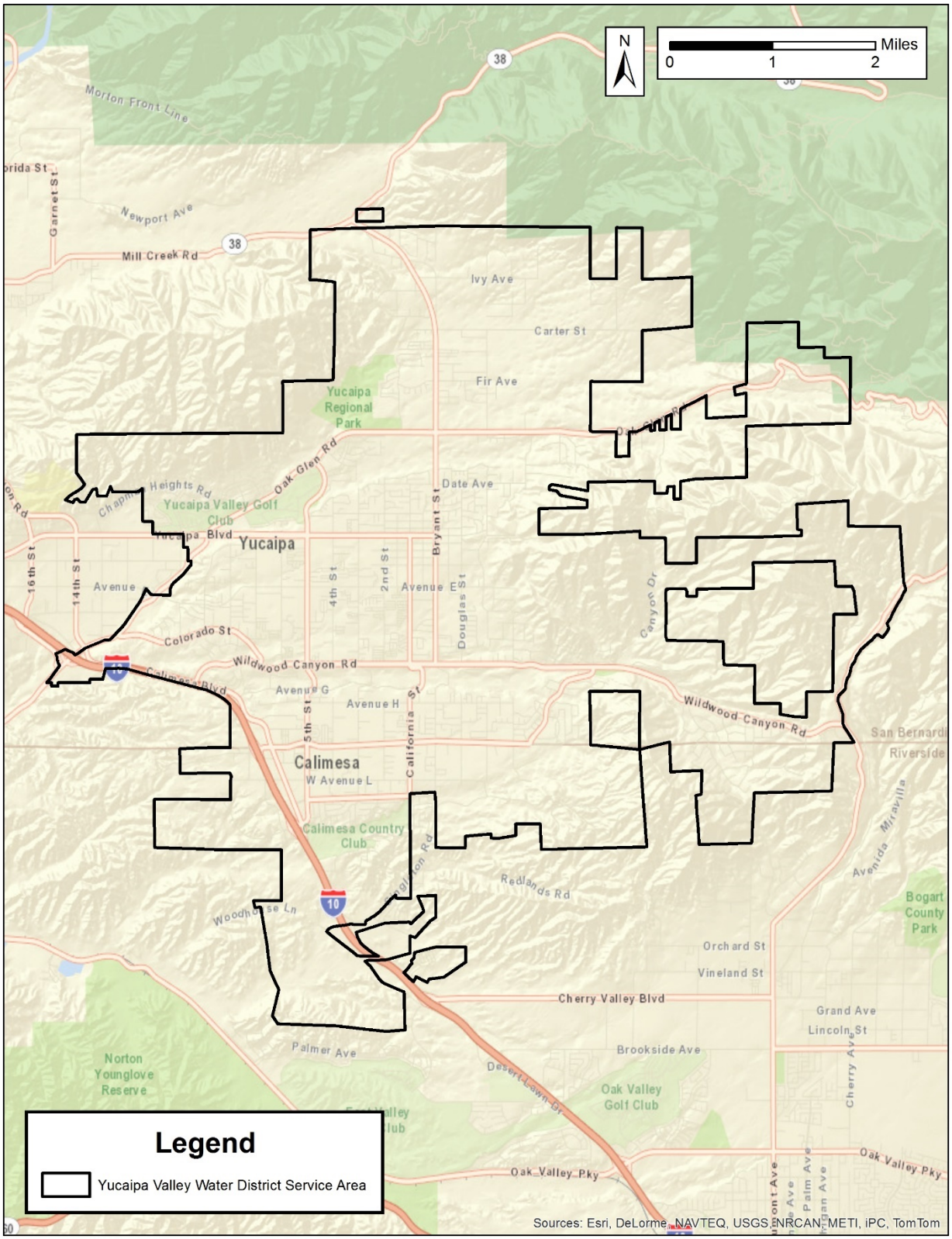


Figure 1-7. Yucaipa Valley Water District Service Area

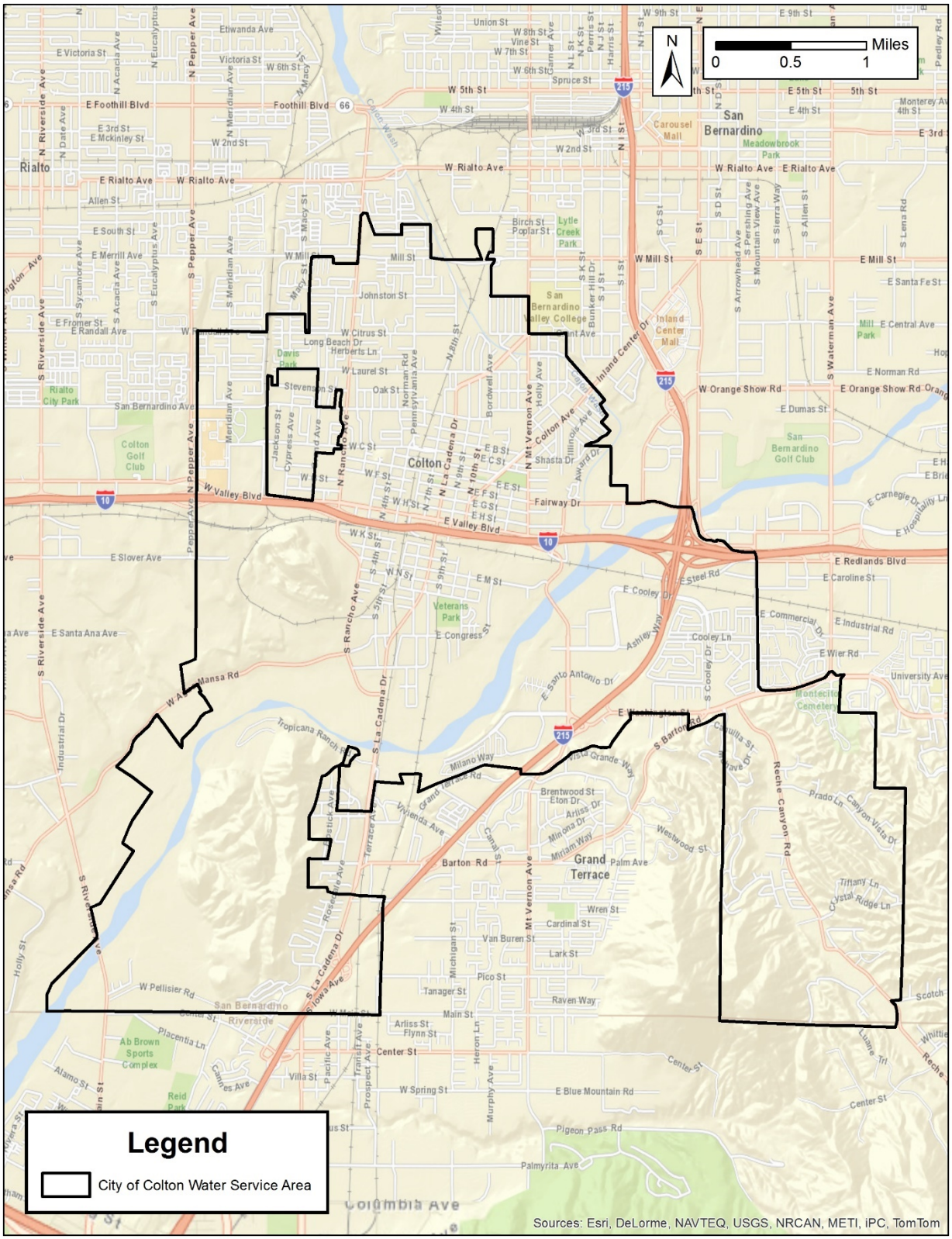


Figure 1-8. City of Colton Service Area

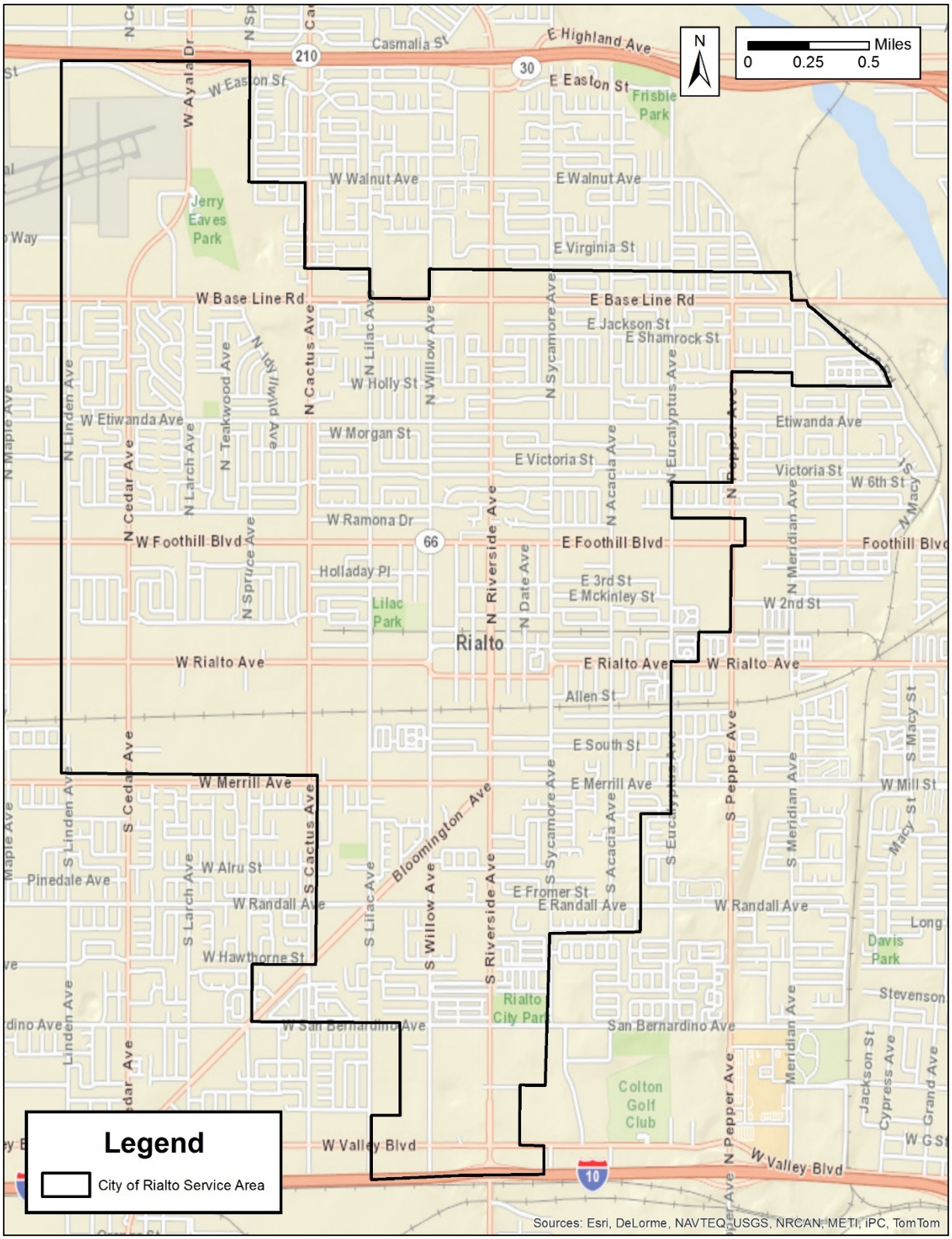


Figure 1-9. City of Rialto Service Area

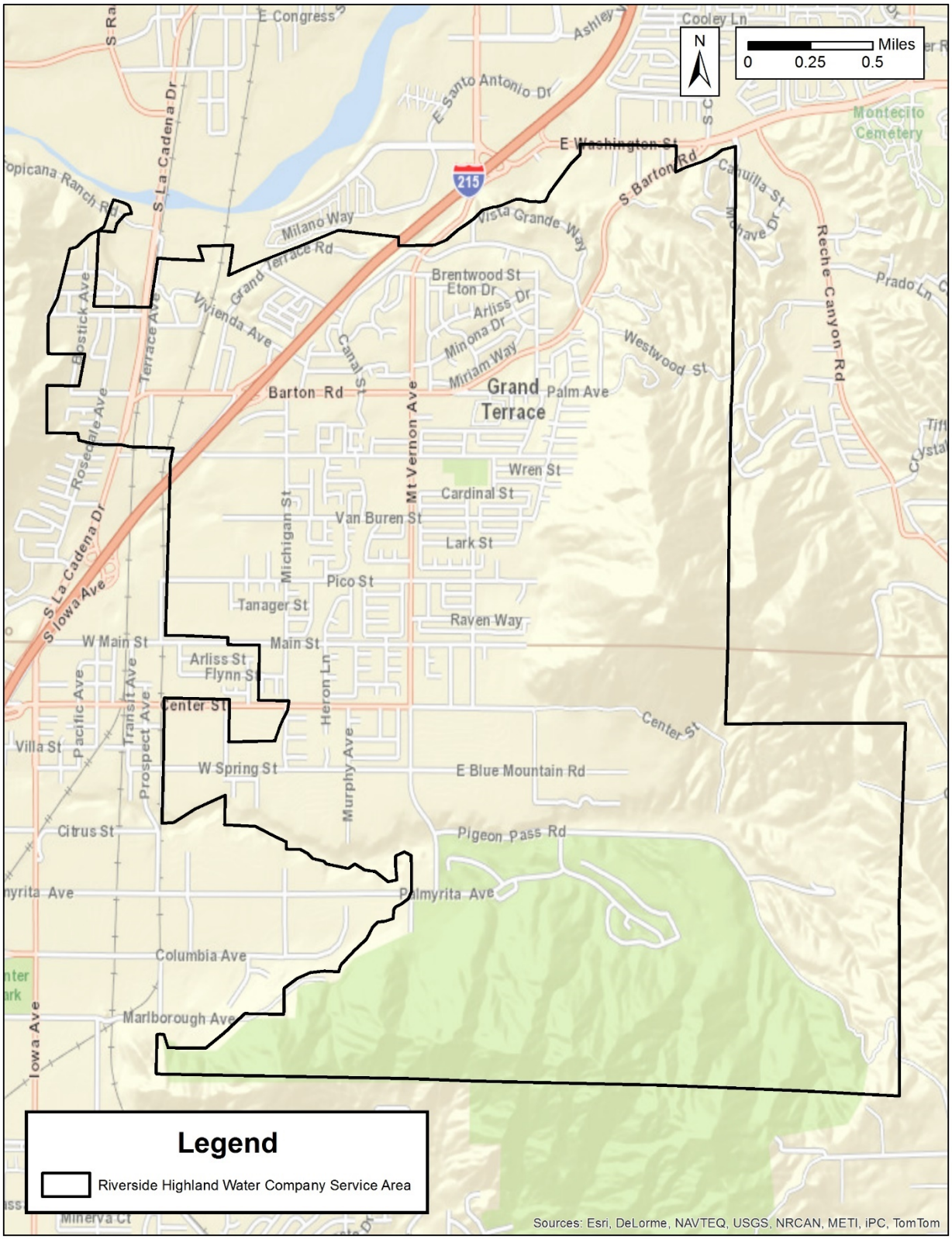


Figure 1-10. Riverside Highland Water Company Service Area

1.5.3 Other Retail Water Providers

Other retail water providers within the Valley District service area that provide water but which are not participants in this RUWMP include: Fontana Union Water Company, Bear Valley Mutual Water Company, Fontana Water Company, Muscoy Mutual Water Company, South Mesa Water Company, Terrace Water Company, and Western Heights Mutual Water Company.

1.6 Climate

Climate is a primary factor affecting water management in the San Bernardino Valley.

1.6.1 Regional Climate

The climate in the San Bernardino Valley is characterized by relatively hot, dry summers and cool winters with intermittent precipitation. The largest portion (73 percent) of average annual precipitation occurs during December through March, and rainless periods of several months are common in the summer. Precipitation is nearly always in the form of rain in the lower elevations and mostly in the form of snow beyond approximately 6,000 feet above mean sea level (MSL) in the San Bernardino Mountains.

Mean annual precipitation ranges from approximately 10 inches near Riverside to approximately 30 inches in the upper San Bernardino Mountains. The historical record indicates that a period of above-average or below-average precipitation can last more than 30 years, such as the dry period that extended from 1947 to 1977. The region has been experiencing an ongoing drought since about 1999.

Three types of storms produce precipitation in the Santa Ana River Basin: general winter storms, local storms, and general summer storms. General winter storms usually occur from December through March. They originate over the Pacific Ocean as a result of the interaction between polar Pacific and tropical Pacific air masses and move eastward over the basin. These storms, which often last for several days, reflect orographic (i.e., land elevation) influences and are accompanied by widespread precipitation in the form of rain and, at higher elevations, snow. Local storms cover small areas, but can result in high intensity precipitation for durations of approximately six hours. These storms can occur any time of the year, either as isolated events or as part of a general storm, and those occurring during the winter are generally associated with frontal systems (a “front” is the interface between air masses of different temperatures or densities). General summer storms can occur in the late summer and early fall months in the San Bernardino area, although they are infrequent.

Table 1-2 shows average monthly climate data for the mountains and valley areas in the region.

Table 1-2 Climatological Data

	Mountain[1]			Valley[2]		
Month	Average Temperature (°F)	Average Precipitation (in.)	Average Standard ETo (in.)	Average Temperature (°F)	Average Precipitation (in.)	Average Standard ETo (in.)
January	34.1	4.49	1.94	52.4	3.22	2.53
February	35.2	4.09	2.39	54.6	3.25	2.87
March	38.0	3.06	4.03	56.7	2.86	4.30
April	43.0	1.32	5.22	60.9	1.29	5.38
May	50.7	0.48	6.67	65.6	0.47	5.82
June	58.4	0.14	7.06	71.3	0.09	6.76
July	64.2	0.74	6.44	77.7	0.04	7.38
August	63.3	0.97	5.92	77.7	0.15	7.09
September	57.5	0.53	4.80	73.9	0.33	5.51
October	48.8	0.82	3.67	66.5	0.71	3.97
November	39.9	2.00	2.27	58.6	1.32	2.89
December	34.0	3.21	1.60	53.3	2.38	2.38
Total		21.85	52.01		16.11	56.88

Notes: [1]Mountain precipitation and temperature for NOAA weather station 040741 in Big Bear Lake; data from 1960 through 2015; http://wrcc.dri.edu; ETo data for CIMIS weather station 199 in Big Bear Lake; http://wwwcimis.water.ca.gov/
[2]Valley precipitation and temperature for NOAA weather station 047723 in San Bernardino; data from 1893 through 2004; http//wrcc.dri.edu; ETo data for CIMIS weather station 44 at University of California, Riverside; http://wwwcimis.water.ca.gov/

1.6.2 Potential Effects of Global Climate Change

A topic of growing concern for water planners and managers is climate change and the potential impacts it could have on California's future water supplies. The Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP) included an assessment of the potential impacts of climate change. The IRWMP Climate Change Vulnerability Assessment Checklist is included in Appendix F of this Plan. A summary of the IRWMP discussion is included here.

Recent climate change modeling for the SAR watershed suggests that a changing climate will have multiple effects on the Region. Adaptation and mitigation measures will be necessary to account for these effects.

The IRWM Region's currently consistent climate with hot summers and cool winters with mild precipitation, and rain in low elevations with snow in higher elevations, would change as temperatures increase, resulting in less precipitation as snow which would affect the snow pack. Increased precipitation as rain would make it more difficult to capture storm flows and store them for drier periods.

The Intergovernmental Panel on Climate Change has vetted and approved 112 climate models based on projections in greenhouse gas emissions and associated changes in precipitation and temperature. The models show that in the future the number of days over 95°F will increase in multiple locations. The Region chose two cities with different temperature ranges to compare the increase across the entire watershed. The cities of Riverside and Big Bear were used to see the projections of the number of days that would be above 95°F. The results are shown in Table 1-3.

Table 1-3 Days per Year exceeding 95°F

City	Historical (°F)	2020 (°F)	2050 (°F)	2070 (°F)
Riverside	43	58	72	82
Big Bear	0	0	2	4

The number of high temperature days in Riverside is expected to double between the present and 2070. Similar increases in temperature can be anticipated throughout Valley District's service area. These increased temperature levels will increase water demands across the watershed mainly for agricultural and irrigation purposes. The higher temperature days in Big Bear have the potential to affect the forest ecosystem and the snow related recreational activities in the area.

The forest ecosystems in the San Bernardino National Forest are currently on the decline. Alpine and subalpine forests are anticipated to decrease in area by fifty to seventy percent by 2100. It is believed that increased greenhouse gas emissions are a primary factor contributing to the decline of these fragile ecosystems.

While high elevation ecosystems decline, the severity of future floods is likely to increase. The likelihood of a 200-year storm event or longer is anticipated to be significantly higher in 2070. This increases the potential for negative impacts on nearby infrastructure. Furthermore, storms are expected to be more severe but less frequent. Despite these assumptions, the aftermath of a severe storm is highly variable.

In addition to changes in ecosystems and storm severity, warmer temperatures may also decrease the annual amount of snowfall and increase the instance of rain in higher elevations. This alteration of precipitation type is likely to cause negative impacts for snow-related recreational activities characteristic of the area's ski resorts. From a local standpoint, Big Bear and Snow Valley both lie below 3000 meters above MSL and are anticipated to experience a decline in snowpack by 2070. Furthermore, it is projected that there will be a decrease in overall winter precipitation of the area by 2070. On a larger scale, the increased temperatures could affect the Sierra Nevada Mountains in a similar way, threatening the reliability of the SWP.

1.6.3 Addressing Climate Change

Climate change can be addressed in two ways, mitigation and adaptation. Mitigation focuses on reducing the carbon emissions for water treatment and transportation. Decreasing carbon emissions for water treatment and transportation may also result in reduced energy costs for water purveyors. These measures will also help in compliance of the California Global Warming Solutions Act (Assembly Bill 32 or AB 32). Adaptation addresses operational changes that need to be made in order to accommodate the increasing temperatures, the increased possibility for severe flooding, and the decreasing precipitation as snow predicted by the climate models.

Plans for greenhouse gas mitigation focus on the relationship between water and energy. This relationship can be quantified and projections for future trends can be developed. The California Global Warming Solutions Act requires greenhouse gas levels to be reduced to their 1990 level by the year 2020.

A Greenhouse Gas Emissions Calculator was developed as part of a Basin Study of the Santa Ana River in a partnership between the Santa Ana Watershed Project Authority (SAWPA) and the United States Bureau of Reclamation (Reclamation). The calculator showed that for the Upper SAR watershed, the most appropriate ways to effectively reduce the volume of carbon emissions related to water treatment and meet AB 32 goals would be to reduce imported water usage and increase local supply usage and water use efficiency.

2 Regional Water Sources

This chapter describes the water resources available to Valley District and the retail purveyors for the 25-year period covered by the Plan. Both currently available and planned supplies are discussed.

2.1 Wholesale Water Supplies

This section provides a description of wholesale water supplies, entitlements to those supplies and current and planned wholesale water supplies.

2.1.1 Imported Water Supplies

Imported water is available to Valley District from the California State Water Project (SWP), which is the largest state-built, multi-purpose water project in the country. It was authorized by the California State Legislature in 1959, with the construction of most initial facilities completed by 1973. The SWP is a water storage and delivery system of reservoirs, aqueducts, power plants and pumping plants. Its main purpose is to store water and distribute it to 29 State Water Contractors in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California. Of the contracted water supply, approximately 70 percent goes to urban users and 30 percent goes to agricultural users. The SWP makes deliveries to two-thirds of California's population. It is maintained and operated by the California Department of Water Resources (DWR). The SWP is also operated to improve water quality in the Sacramento-San Joaquin Delta, control Feather River flood waters, provide recreation, and enhance fish and wildlife. Valley District is the fifth largest State Water Contractor, with an annual maximum entitlement of 102,600 acre-feet (AF).

The SWP includes 34 storage facilities, reservoirs and lakes, 20 pumping plants, four pumping-generating plants, five hydro-electric plants, and approximately 701 miles of aqueducts and pipelines. The primary water source for the SWP is the Feather River, a tributary of the Sacramento River. Water released from Oroville Dam on the Feather River flows down natural river channels to the Sacramento-San Joaquin River Delta (Delta). While some SWP supplies are pumped from the northern Delta into the North Bay Aqueduct, the vast majority of SWP supplies are pumped from the southern Delta into the 444-mile-long California Aqueduct. The California Aqueduct conveys water along the west side of the San Joaquin Valley to Edmonston Pumping Plant, where water is pumped over the Tehachapi Mountains. The aqueduct then divides into the East and West Branches.

The San Bernardino Valley lies on the East Branch of the California Aqueduct, and Valley District takes delivery of SWP water at the Devil Canyon Power Plant just northwest of California State University, San Bernardino. From this location, SWP water can be delivered in several directions in State facilities or in transmission systems belonging to State Water Contractors. Valley District can deliver water to the west via the San Gabriel Valley Municipal Water District Pipeline (Valley District owns capacity in this pipeline) or to the east through the East Branch Extension of the SWP. Once the bonds have been paid off in 2035, the taxpayers in Valley District's service area will have invested over $1.23 billion for their share of the SWP storage and delivery system.

Each SWP contractor's SWP Water Supply Contract includes a "Table A," which lists the maximum amount of water an agency is entitled to throughout the life of the contract. The Table A amount is each contractor's proportionate share, or "allocation," of the SWP water supply. However, actual

deliveries of SWP water each year vary, based mainly on the amount of precipitation (for other factors, see Section 2.1.3 below).

While the primary supply of water available from the SWP is allocated Table A supply, SWP supplies in addition to Table A water are periodically available, including "Article 56C" carryover water, "Article 21" water, "Turnback Pool" water, and DWR "Dry Year Purchase Programs". Pursuant to the long-term water supply contracts, SWP contractors have the opportunity to carry over a portion of their allocated water approved for delivery in the current year for delivery during the next year. Valley District has exercised this option in the past. Contractors can also "carry over" water under Article 56C of the SWP long-term water supply contract with advance notice when they submit their initial request for Table A water, or within the last three months of the delivery year. The carryover program was designed to encourage the most efficient and beneficial use of water and to avoid obligating the contractors to "use or lose" the water by December 31 of each year. The water supply contracts state the criteria for carrying over Table A water from one year to the next. Normally, carryover water is water that has been exported during the year, has not been delivered to the contractor during that year, and has remained stored in the SWP share of San Luis Reservoir to be delivered during the following year. Storage for carryover water no longer becomes available to the contractors if it interferes with storage of SWP water for project needs.

Article 21 water (which refers to the SWP contract provision defining this supply) is water that may be made available by DWR when excess flows are available in the Delta (i.e., when Delta outflow requirements have been met, SWP storage south of the Delta is full, and conveyance capacity is available beyond that being used for SWP operations and delivery of allocated and scheduled Table A supplies). Article 21 water is made available on an unscheduled and interruptible basis and is typically available only in average to wet years, generally only for a limited time in the late winter.

In wet periods, the amount of water available may exceed the amount of storage in the SWP system. During these times, State Water Contractors may have excess SWP water. In the past, when excess water was available to Valley District, it sold the excess SWP water to the Metropolitan Water District of Southern California (MWDSC).

Table 2-1 presents historical total SWP water deliveries to Valley District.

Table 2-1. Historical State Water Project Deliveries to Valley District

Calendar Year	Total Deliveries (AF)
2010	49,406
2011	38,126
2012	112,972
2013	30,585
2014	6,452
Source: 2015 DWR Delivery Capability Report	

2.1.1.1 SWP Contractors Explanation of SWP Contract Term

The Department of Water Resources (DWR) provides water supply from the State Water Project (SWP) to 29 SWP Contractors (Contractors) in exchange for Contractor payment of all costs associated with providing that supply. DWR and each of the Contractors entered into substantially uniform long-term

water supply contracts (Contracts) in the 1960s with initial 75-year terms, which will begin to expire in 2035. While the Contracts provide for continued water service to the Contractors beyond the initial term, efforts are currently underway to extend the Contracts to improve financing for the SWP.

The majority of the capital costs associated with the development and maintenance of the SWP is financed using revenue bonds. These bonds have historically been sold with 30-year terms. It has become more challenging in recent years to affordably finance capital expenditures for the SWP because bonds used to finance these expenditures are limited to terms that only extend to the year 2035, less than 30 years from now. To ensure continued affordability of debt service to Contractors, it is necessary to extend the term of the Contracts, which will allow DWR to continue to sell bonds with 30-year terms.

Negotiations on extending the Contracts took place between DWR and the Contractors during 2013 and 2014, and were open to the public. The following terms were agreed to and are currently the subject of analysis under the requirements of the California Environmental Quality Act (CEQA) (Notice of Preparation dated September 12, 2014):

- Extend the term of the 29 Water Supply Contracts to December 31, 2085;
- Provide for increased SWP financial operating reserves during the extended term of the Contracts;
- Provide additional funding mechanisms and accounts to address SWP needs and purposes;
- Develop a revised payment methodology with a corresponding billing system that better matches the timing of future SWP revenues to future expenditures.

It is anticipated that the term of the SWP Contracts will be extended to December 31, 2085 and the data and information contained in this UWMP reflect that assumption to improve coordination between supply and demand projections beyond the year 2035 as provided in the UWMP Act. (CWC Section 10631(b).)

2.1.2 Imported Water Supply Reliability

The amount of SWP water delivered to State Water Contractors in a given year depends on a number of factors, including the demand for the supply, amount of rainfall, snowpack, runoff, water in storage, pumping capacity from the Delta, and legal/regulatory constraints on SWP operation. Water delivery reliability depends on three general factors: the availability of water, the ability to convey water to the desired point of delivery, and the magnitude of demand for the water. Urban SWP contractors' requests for SWP water, which were low in the early years of the SWP, have been steadily increasing over time. Regulatory constraints have changed over time, becoming more restrictive.

DWR prepares a biennial report to assist SWP contractors and local planners in assessing the near and long-term availability of supplies from the SWP. DWR issued its most recent update, the 2015 DWR State Water Project Delivery Capability Report (DCR), in July 2015. In the 2015 update, DWR provides SWP supply estimates for SWP contractors to use in their planning efforts, including for use in their 2015 UWMPs. The 2015 DCR includes DWR's estimates of SWP water supply availability under both current and future conditions.

DWR's estimates of SWP deliveries are based on a computer model that simulates monthly operations of the SWP and Central Valley Project systems. Key assumptions and inputs to the model include the

facilities included in the system, hydrologic inflows to the system, regulatory and operational constraints on system operations, and projected contractor demands for SWP water. For example, the 2015 DCR uses the following assumptions to model current conditions: existing facilities, hydrologic inflows to the model based on 82 years of historical inflows (1922 through 2003), current regulatory and operational constraints, and contractor demands at maximum Table A amounts. The Bay Delta Conservation Plan (BDCP) is a large project intended to help mitigate for the environmental problems and restore the delivery capability for the SWP.

In spring 2015, DWR announced that BDCP would move from a Section 10 permit to a Section 7 permit process under the Federal Endangered Species Act. As a practical matter, this split the project into two distinct parts known as California WaterFix (Alternative 4A), the conveyance portion, and California EcoRestore, the restoration portion. California WaterFix is Alternative 4A in the recirculated environmental document, and the preferred alternative. Alternative 4A is different than any of the future scenarios modeled by DWR in the DCR. The California WaterFix project is currently in the environmental review process which is not anticipated to be final until at least 2016. In addition, several regulatory and legal requirements must be met prior to construction.

To evaluate SWP supply availability under future conditions, the 2015 DCR included four model studies. The first of the future-conditions studies, the Early Long Term (ELT) scenario, used all of the same model assumptions for current conditions, but reflected changes expected to occur from climate change, specifically, a 2025 emission level and a 15 cm sea level rise. The other three future-conditions include varying model assumptions related to the California WaterFix, such as changes to facilities and/or regulatory and operational constraints.

This UWMP uses the ELT scenario in the 2015 DCR to estimate future SWP supply availability because it is based on existing facilities and regulatory constraints, with hydrology adjusted for the expected effects of climate change. This scenario is consistent with the studies DWR has used in its previous SWP Delivery Reliability Reports for supply availability under future conditions.

The estimated long-term average availability for Valley District from the 2015 DCR is shown in Table 2-2.

Table 2-2. Wholesale Water Supplies Available (Long-term Average)

Wholesaler (Supply Source)	2020	2025	2030	2035	2040
State Water Project					
% of Table A Amount Available	61%	61%	61%	61%	61%
Anticipated Deliveries (AFY)	63,000	63,000	63,000	63,000	63,000
Source: 2015 DWR Delivery Capability Report					

The 2015 DCR includes a probability curve for each contractor's estimated delivery of Table A water. The curve for Valley District is shown in Figure 2-1.

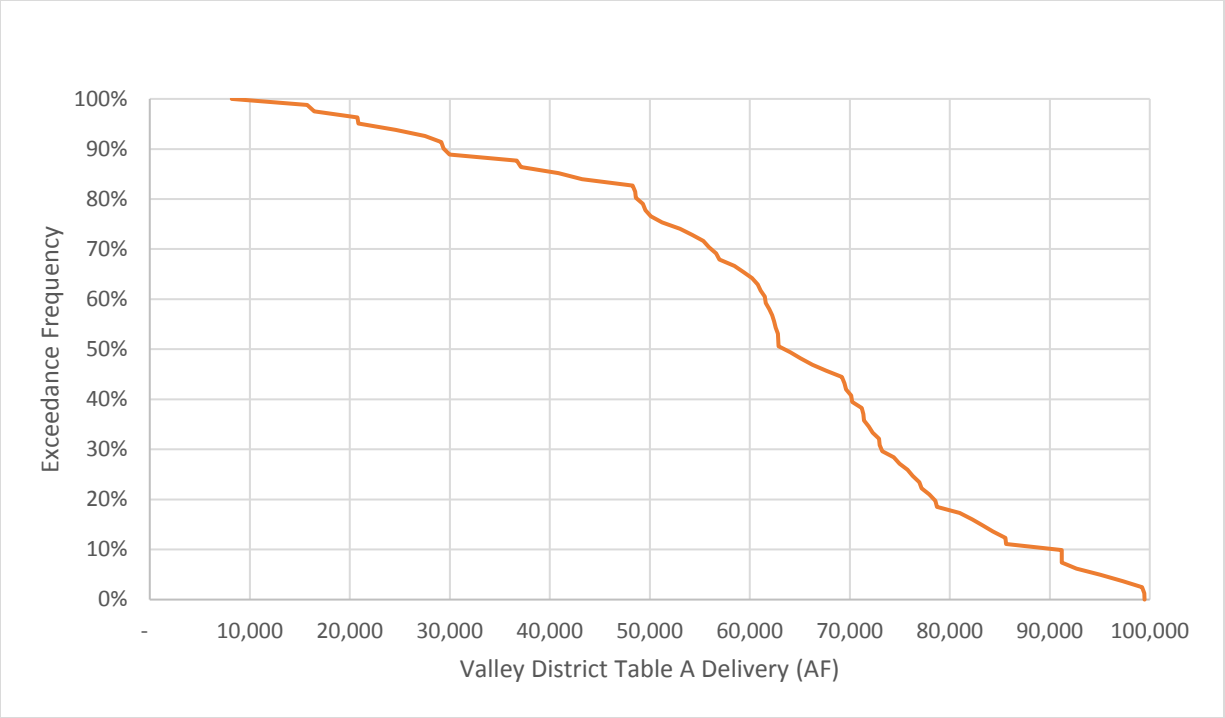


Figure 2-1. Estimated Table A Deliveries Probability Curve for Valley District (2015 DWR DCR)

Table 2-3 summarizes estimated SWP supply availability to Valley District in a single-dry year (based on a repeat of the worst-case historic hydrologic conditions of 2014) and over a multiple-dry year period (based on a repeat of the worst-case historic four-year drought of 1931 to 1934). The table also shows estimated delivery in a wet year, based on a repeat of hydrologic conditions of 1983.

Table 2-3 Estimated Wholesale Supply Reliability

Wholesale		Single Wet Year (1983)	Single Dry Year (2014)	Multiple Dry Year (1931-34)
State Water Project				
	% of Table A Amount Available	98%	5%	33%
	Anticipated Deliveries (AFY)	100,548	5,130	33,858
Source: 2015 DWR Delivery Capability Report Table 6-4				

As urban contractor demands increase in the future, the amount of water turned back and available for purchase will likely diminish. In critical dry years, DWR has formed Dry Year Water Purchase Programs for contractors needing additional supplies. Through these programs, water is purchased by DWR from willing sellers in areas that have available supplies and is then sold by DWR to contractors willing to purchase those supplies. Because the availability of these supplies is somewhat uncertain, they are not included as supplies available to Valley District in this Plan. However, Valley District's access to these supplies when they are available may enable it to improve the reliability of its SWP supplies beyond the values used throughout this report. The main strategy Valley District will use to supplement supplies in dry years is by storing water in wet years so that it can be used in dry years. Valley District is developing two conjunctive use programs that would be used for this purpose and would, hopefully, reduce, or eliminate, the need to participate in the DWR dry year programs.

2.1.2.1 Explanation of 2014 SWP Water Supply Allocation

The extremely dry sequence from the beginning of January 2013 through the end of 2014 was one of the driest two-year periods in the historical record. Water year 2013 was a year with two hydrologic extremes. October through December 2012 was one of the wettest fall periods on record, but was followed by the driest consecutive 12 months on record. Accordingly, the 2013 SWP supply allocation was a low 35 percent of SWP Table A amounts. The 2013 hydrology ended up being even drier than DWR's conservative hydrologic forecast, so the SWP began 2014 with reservoir storage lower than targeted levels and less stored water available for 2014 supplies. Compounding this low storage situation, 2014 also was an extremely dry year, with runoff for water year 2014 the fourth driest on record. Due to extraordinarily dry conditions in 2013 and 2014, the 2014 SWP water supply allocation was a historically low 5 percent of Table A amounts. The dry hydrologic conditions that led to the low 2014 SWP water supply allocation were extremely unusual, and to date have not been included in the SWP delivery estimates presented in DWR's 2015 Delivery Capability Report. It is anticipated that the hydrologic record used in the DWR model will be extended to include the period through 2014 during the next update of the model, which is expected to be completed prior to issuance of the next update to the biennial SWP DCR. For the reasons stated above, this UWMP uses a conservative assumption that a 5-percent allocation of SWP Table A amounts represents the "worst case" scenario.

2.2 Local Water Supplies

Local precipitation that runs off as surface water and local precipitation that soaks into the ground, called "groundwater", meets about 60% of the regional demand in an average year. This section provides a description of local surface water and groundwater management in the San Bernardino Valley, including court judgments, groundwater management plans, and groundwater pumping rights.

The groundwater basins utilized by RUWMP agencies are depicted in Figure 2-2. The figure also shows the San Bernardino Basin Area (SBBA), which encompasses several named basins, including the Bunker Hill and Lytle Creek Basins.

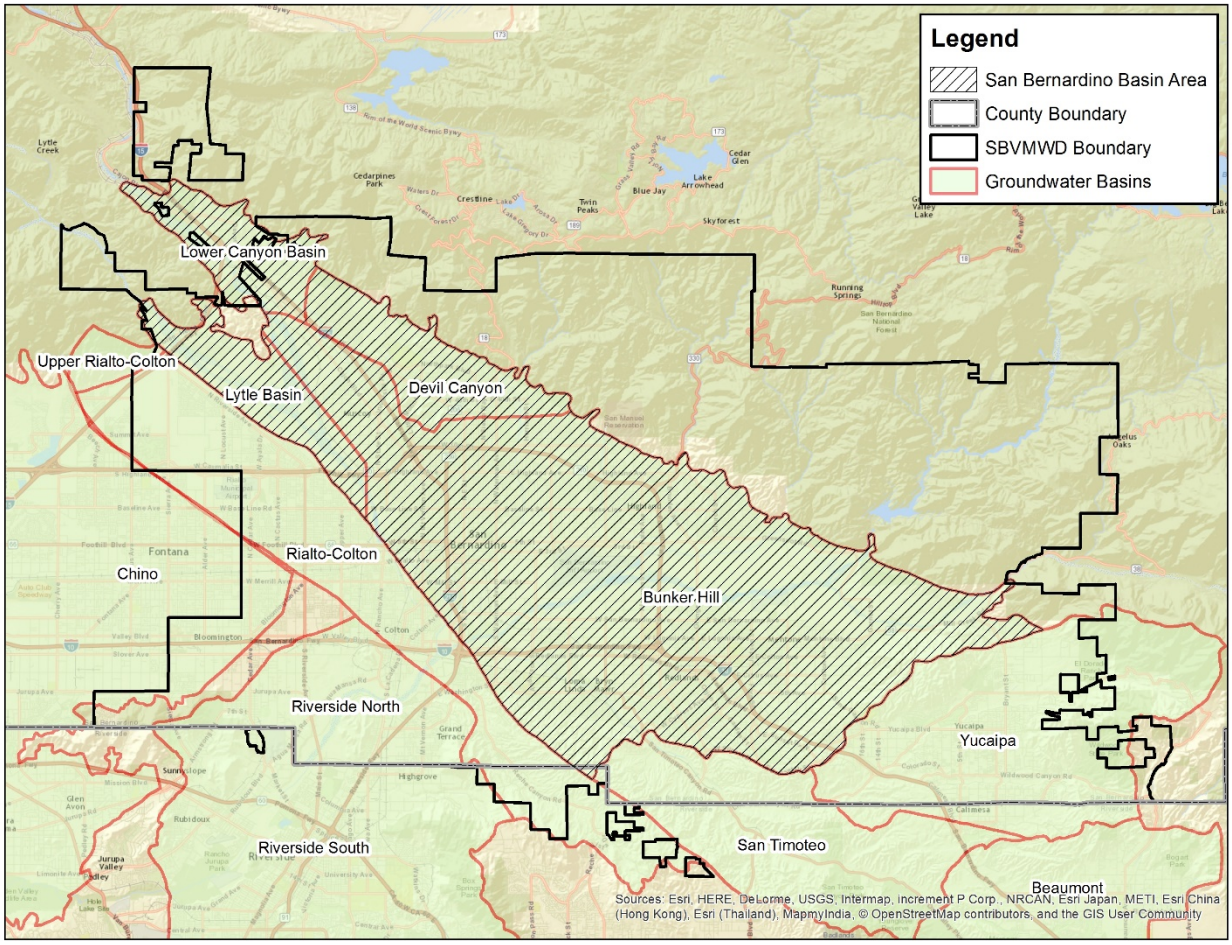


Figure 2-2. Groundwater Basins of the San Bernardino Valley Area

The basins of the RUWMP area are among the most rigorously managed in the State. Planning and management efforts evaluating needs and supplies have been established for most of the basins within the watershed through the next 20 to 40 years. Groundwater extractions and conditions are monitored and tracked by the Western-San Bernardino Watermaster and the Basin Technical Advisory Committee.

2.2.1 San Bernardino Basin Area

The San Bernardino Basin Area (SBBA) was defined by, and adjudicated in gross, by the Western-San Bernardino Judgment (Western Judgment) in 1969. The SBBA has a surface area of approximately 141 square miles and lies between the San Andreas and San Jacinto faults. The basin is bordered on the northwest by the San Gabriel Mountains and Cucamonga fault zone; on the northeast by the San Bernardino Mountains and San Andreas fault zone; on the east by the Banning fault and Crafton Hills; and on the south by a low, east-facing escarpment of the San Jacinto fault and the San Timoteo Badlands. Alluvial fans extend from the base of the mountains and hills that surround the valley and coalesce to form a broad, sloping alluvial plain in the central part of the valley. The SBBA encompasses the Bunker Hill sub basin (DWR Number 8.02-06) defined by DWR and also includes a small portion of the Yucaipa Basin (8-02.07) and Rialto-Colton Basin (8-02.04) as defined by DWR. The SBBA also encompasses surface water.

The Western Judgment established the natural safe yield of the SBBA to be a total of 232,100 AF per year (AFY) for both surface water diversions and groundwater extractions (the Western Judgment is provided in Appendix I). Surface water is diverted from Mill Creek, Lytle Creek, and the SAR. The average surface water diversions in the SBBA for direct use from 1968 to 2000 were 39,000 AFY.

The Western Judgment allocates 64,862 AFY of the safe yield, which equates to 27.95 percent, to the Plaintiffs. The Plaintiffs include the City of Riverside (the successor to the Riverside Water Company and the Gage Canal Company), Riverside Highland Water Company, Meeks & Daley Water Company, and Regents of the University of California. The Riverside County agencies may not exceed their allocation unless they participate in "New Conservation" (explained below).

The Non-Plaintiffs' (agencies within San Bernardino County) rights were defined in the Judgment as 167,238 AFY, which equates to 72.05 percent of the safe yield. San Bernardino agencies are allowed to extract more than 167,238 AFY from the SBBA, as long as they import and recharge a like amount of water into the SBBA. The Western-San Bernardino Watermaster provides an annual accounting of both the plaintiff and non-plaintiff extractions and a comparison to the safe yield. The Watermaster bases the Valley District replenishment water requirement on the cumulative accounting of non-plaintiff extractions. If the cumulative extractions are less than the cumulative safe yield, there is a groundwater "credit" in the basin. In years when cumulative extractions are greater than their allocation, a "debit" is given. Recharge is also required to offset the export of water outside the SBBA in excess of the amount recorded during the base period (1959-1963). Credits are earned for any new supplies such as stormwater capture. As of the accounting performed for the 2015 Annual Western-San Bernardino Watermaster Report, the Non-Plaintiffs have 104,994 AF of net credit accumulated in the SBBA and are, therefore, not required to recharge. Although there is no recharge requirement under the Judgment, the Non-Plaintiffs have continued to recharge the SBBA.

2.2.1.1 Lytle Creek Sub basin

Lytle Creek Basin is part of the SBBA, and it is not identified as a separate sub-basin in DWR Bulletin 118-2003; however, the sub basin is an integral part of the Upper Santa Ana Valley Groundwater Basin and a major recharge area for both the Bunker Hill and Rialto-Colton sub basins. Historically, local agencies have recognized Lytle Creek sub basin as a distinct groundwater sub basin. In the Western Judgment, the Bunker Hill and Lytle Creek sub basins are combined into the SBBA. However, the three separate water-bearing zones and intervening confining zones of the Bunker Hill sub basin are not observed in the Lytle sub basin. Sediments within the Lytle sub basin are, for the most part, highly permeable, and the aquifer has a high specific yield. High permeability and specific yield tend to result in an aquifer that responds rapidly to changes in inflow (precipitation and streamflow) and outflow (groundwater pumping, streamflow, and subsurface outflow).

Lytle Creek sub basin is adjoined on the west by the Rialto-Colton sub basin along the Lytle Creek fault, and on the east and southeast by the Bunker Hill sub basin along the Loma Linda fault and Barrier G. The northwestern border of the sub basin is delineated by the San Gabriel Mountains, and runoff from the mountains flows south/southeast through Lytle and Cajon Creeks into the basin.

Numerous groundwater barriers are present within Lytle Creek sub basin, resulting in six compartments within the sub basin. Barriers A through D divide the northwestern portion of the sub basin into five sub-areas and the southeastern portion of the sub basin comprises the sixth sub-area. Barrier F divides the northwestern sub-areas from the southeastern sub-area. Studies have shown that the groundwater

barriers are less permeable with depth. When groundwater levels are high during wet years, more leakage occurs across the barriers than when groundwater levels are lower (i.e., during dry years). The amount of pumping in each sub-area, in large part, controls the movement of groundwater across the barrier within the older alluvium but not the younger alluvium.

It is important to note that the water rights in Lytle Creek are set forth in long-standing court judgments governing the rights of the parties in that basin. The Lytle Creek Basin was adjudicated under the 1924 Judgment No. 17,030 from the Superior Court of San Bernardino County and is managed by the Lytle Creek Water Conservation Association, which is made up of the successors to the stipulated parties of the judgment (a copy of the 1924 judgment is provided in Appendix J).

Table 2-4 shows historical extractions from the SBBA for years 2010-2014.

Table 2-4. Historic Groundwater Extractions and Surface Water Diversions from SBBA (AFY)

Entity	2010	2011	2012	2013	2014
Non-Plaintiffs					
Bear Valley Mutual Water Company (a)	17,524	16,862	15,560	15,259	17,102
City of Colton (a)	4,740	4,783	6,222	5,170	4,879
East Valley Water District (a)	18,120	18,408	19,538	18,796	17,896
City of Loma Linda (a)	4,863	5,401	5,776	5,571	5,449
City of Redlands (a)	28,960	31,908	31,918	29,641	29,100
City of Rialto (a)	5,325	3,377	3,109	4,082	4,132
San Bernardino Valley MWD (a)	291	618	3,790	7,485	8,178
City of San Bernardino (a)	49,185	50,331	50,250	46,853	44,798
West Valley Water District (a)	7,986	7,697	8,637	7,723	6,397
Yucaipa Valley Water District (a)	166	97	120	220	154
Other Agencies in San Bernardino and Private Entities (b)	16,474	19,288	23,053	17,597	15,062
Subtotal for Non-Plaintiffs	**153,634**	**158,770**	**167,973**	**158,397**	**153,147**
Plaintiffs					
Riverside Highland Water Company (c)	1,136	1,655	2,135	2,873	2,077
Agencies in Riverside County (d)	52,987	54,151	60,159	60,885	57,072
Subtotal for Plaintiffs	**54,123**	**55,806**	**62,294**	**63,758**	**59,149**
Total	**207,757**	**214,576**	**230,267**	**222,155**	**212,296**

Notes:

(a) Data from Volume 1 of the Western-San Bernardino Watermaster Annual Report for 2015.

(b) Includes Crafton Water Company, Devore Water Company, Fontana Union Water Company, Loma Linda University, Mentone Citrus Growers, Mount Vernon Water Company, Mountain View Generating Station, Muscoy Mutual Water Company, San Bernardino County – Facility Management, Tennessee Water Company, Terrace Water Company, and Redlands water Company. Data from Volume 1 of the Western-San Bernardino Watermaster Annual Report for 2015.

(c) Riverside-Highland Water Company's service area extends into both San Bernardino and Riverside counties. However, Riverside-Highland Water Company is a Plaintiff within the Western Judgment and therefore extractions for Riverside-Highland are typically included with those of Riverside County entities. Data from Table No. 11, Western-San Bernardino Watermaster Annual Report for 2015.

(d) Includes Agua Mansa Water Company and Meeks & Daley Water Company, Regents of the University of California, and the City of Riverside. Data from Table Nos. 10, 12, and 13 of the Western-San Bernardino Annual Report for 2015.

2.2.2 Rialto-Colton Sub basin (DWR 8-02.04)

The Rialto-Colton sub basin underlies a portion of the upper Santa Ana Valley in southwestern San Bernardino County and northwestern Riverside County. This sub basin is about 10 miles long and varies in width from about 3.5 miles in the northwestern part to about 1.5 miles in the southeastern part. This sub basin is bounded by the San Gabriel Mountains on the northwest, the San Jacinto fault on the northeast, the Badlands on the southeast, and the Rialto-Colton fault on the southwest. The Santa Ana River cuts across the southeastern part of the basin. The basin generally drains to the southeast, toward the Santa Ana River. Warm and Lytle Creeks join near the southeastern boundary of the basin and flow to meet the Santa Ana River near the center of the southeastern part of the sub basin.

The principal recharge areas are Lytle Creek, Reche Canyon in the southeastern part, and the Santa Ana River in the south-central part. Lesser amounts of recharge are provided by percolation of precipitation to the valley floor, underflow, and irrigation and septic returns. Underflow occurs from fractured basement rock and through the San Jacinto fault in younger Santa Ana River deposits at the south end of the sub basin and in the northern reaches of the San Jacinto fault system. Groundwater recharge has been augmented through the use of spreading basins.

The groundwater extractions in the Rialto-Colton Basin are governed by the Rialto Basin Decree and the Western Judgment. The Western Judgment uses the terminology "Colton Basin Area". Fontana Water Company (FWC), the City of Rialto, the City of Colton, and West Valley Water District are subject to the Rialto Basin Decree, entered on December 22, 1961, by the Superior Court for the County of San Bernardino. Entitlement extractions for any given water year (October 1 to September 30) are affected by groundwater elevations between March and May for three specific "index" wells (Duncan Well, Willow Street Well, and Boyd Well). Under specified conditions, groundwater extractions may be limited during certain months.

The Western Judgment requires the average lowest static water levels in three index wells in the Rialto-Colton Basin and Riverside North Basins to be no lower than 822.04 feet above mean sea level (MSL). If the water levels fall below 822.04 feet above MSL, Valley District is obligated to recharge the basin with imported water or reduce extractions. Extractions for use in Riverside County are limited to 3,381 AFY.

The safe yield for the Rialto-Colton Basin was not defined by the Western Judgment or the Rialto Basin decree. Valley District developed an estimate of the safe yield, as shown in Table 2-5. The estimate uses data from 1979 through 2014, the same hydrologic period that is being used for detailed groundwater modeling of the basin. During that period, the average production from the basin was 15,567 AF which includes water imported from the State Water Project. During that period, basin storage levels also declined. After adjusting for the decline in storage and the recharge of imported water, the estimated safe yield is 13,623 AFY. The Western Judgment set aside 3,381 AFY for Riverside entities, leaving the balance, 10,242 AFY for San Bernardino entities within the Valley District service area.

Table 2-5 Estimated Safe Yield from Rialto-Colton Basin

Parameter	Value (AF)
Average groundwater production from 1979 through 2014	15,567
Adjustment for average change in storage, 1979 through 2014	(864)
Adjustment for average imported water recharged,1979 through 2014	(1,080)
Estimated Safe Yield	*13,623*
Portion of Safe Yield reserved for Riverside entities	3,381
Portion of Safe Yield for San Bernardino entities	**10,242**

2.2.3 Riverside-Arlington Sub-basin (DWR 8-02.03)

The Riverside-Arlington sub basin underlies part of the Santa Ana River Valley in northwest Riverside County and southwest San Bernardino County. This sub basin is bounded by impermeable rocks of Box Springs Mountains on the southeast, Arlington Mountain on the south, La Sierra Heights and Mount Rubidoux on the northwest, and the Jurupa Mountains on the north. The northeast boundary is formed

by the Rialto-Colton fault, and a portion of the northern boundary is a groundwater divide beneath the community of Bloomington. The Santa Ana River flows over the northern portion of the sub basin. Annual average precipitation ranges from about 10 to 14 inches. The Riverside-Arlington sub basin is replenished by infiltration from Santa Ana River flow, underflow past the Rialto-Colton fault, intermittent underflow from the Chino sub basin, return irrigation flow, and deep percolation of precipitation.

The Western Judgment includes the Riverside Basin Area which consists of a portion of the Riverside-Arlington sub-basin upstream of Riverside Narrows. Groundwater extractions in the Riverside North Groundwater Basin (the portion of the Riverside Basin Area in San Bernardino County) are governed by the Western Judgment. Extractions from the Riverside North Basin for use in Riverside County are limited to 21,085 AFY by the Judgment. Extractions for use in San Bernardino County are unlimited, provided that water levels at three index wells in the Rialto-Colton and Riverside North Basins stay above 822.04 feet MSL. The 2015 IRWMP provided an estimate of 30,100 AFY as the sustainable supply from Riverside North for use in San Bernardino County, based on extractions from 1996 to 2005.

2.2.4 Yucaipa Sub basin (DWR 8-02.07)

The Yucaipa sub basin underlies the southeast part of San Bernardino Valley. It is bounded on the northeast by the San Andreas fault, on the northwest by the Crafton fault, on the west by the Redlands fault and the Crafton Hills, on the south by the Banning fault, and on the east by the Yucaipa Hills. The average annual precipitation ranges from 12 to 28 inches. This part of the San Bernardino Valley is drained by Oak Glen, Wilson, and Yucaipa Creeks south and west into San Timoteo Wash, a tributary to the Santa Ana River.

Dominant recharge to the sub basin is from percolation of precipitation and infiltration within the channels of overlying streams, particularly Yucaipa and Oak Glen Creeks; underflow from the fractures within the surrounding bedrock beneath the sub basin; and artificial recharge at spreading grounds.

The Yucaipa Subbasin is not adjudicated; however, a groundwater management plan (AB 3030 Plan) is underway to proscribe collective management of the subbasin. According to a recent study, the Yucaipa Basin has a sustainable yield of approximately 9,600 AFY and a storage capacity totaling more than 356,000 AF. From 2007 to 2012, artificial recharge efforts increased the total groundwater storage in the Yucaipa Basin to 1998 levels. In the last few years, groundwater storage levels have bene going down as the area relies on stored groundwater to get through the drought.

With ample storage, ability to recharge the basin by spreading surface waters, and apparent flexibility in managing groundwater levels without subsidence problems, the Yucaipa subbasin could be conjunctively managed both to meet normal annual demands and to meet water resource needs in the event of a drought and curtailment or loss of inconsistent surface water supplies, resulting in a highly reliable water supply. Current goals are to secure agreements to not pump beyond the safe yield of the basin, supplementing supplies with imported surface water. Valley District, YVWD, Redlands, San Gorgonio Pass Water Agency (SGPWA), South Mesa Water Company, Western Heights Water Company, and the City of Yucaipa are currently working together to develop a basin wide conjunctive use program in the Yucaipa Basin.

2.2.5 San Timoteo Sub basin (DWR 8-02.08)

The San Timoteo Sub basin is largely outside of the Valley District service area, but is one of the sources used by YVWD. The San Timoteo sub basin underlies Cherry Valley and the City of Beaumont in southwestern San Bernardino and northwestern Riverside counties. The sub basin is bounded to the north and northeast by the Banning fault and impermeable rocks of the San Bernardino Mountains, Crafton Hills, and Yucaipa Hills; on the south by the San Jacinto fault; on the west by the San Jacinto Mountains; and on the east by a topographic drainage divide with the Colorado River hydrologic region. The surface is drained by Little San Gorgonio Creek and San Timoteo Canyon to the Santa Ana River. Average annual precipitation ranges from 12 to 14 inches in the western part to 16 to 18 inches in the eastern part of the sub basin.

Holocene-age alluvium, which consists of unconsolidated clay, silt, sand, and gravel, is the principal water-bearing unit in this sub basin. The alluvium, which is probably thickest near the City of Beaumont, thins toward the southwest and is not present in the central part of the sub basin. The Pliocene-Pleistocene-age San Timoteo Formation consists of alluvial deposits that have been folded and eroded. These deposits are widely distributed and principally composed of gravel, silt, and clay, with comparatively small amounts of calcite-cemented conglomerate. The clasts are chiefly granitic, with lesser amounts of volcanic and metamorphic pebbles and cobbles. The total thickness of the San Timoteo Formation is estimated to be between 1,500 and 2,000 feet, but logs of deep wells near the central part of the sub basin indicate water-bearing gravels to depths of only 700 to 1,000 feet.

The Banning and Cherry Valley faults and two unnamed faults in the northeast part of the sub basin offset impermeable basement rocks, stepping down to the south. Water levels change across the Banning fault, dropping 100 to 200 feet to the south. In the western part of the sub basin, water levels drop to the south about 75 feet across the Loma Linda fault and about 50 feet across the San Timoteo barrier. In the northeastern part of the sub basin, water levels drop to the south across two unnamed faults. Each of these faults appears to disrupt groundwater movement in the sub basin.

Groundwater is replenished by subsurface inflow and percolation of precipitation, runoff, wastewater discharge, and imported water. Runoff and imported water are delivered to streambeds and spreading grounds for percolation. The San Timoteo Subbasin is not adjudicated, and reliable estimates of total groundwater extractions are not available. However, water table elevations within the San Timoteo Subbasin have not declined over the years which is likely due to the constant flow of treated wastewater from YVWD that flows through San Timoteo Creek.

2.2.5.1 Beaumont Groundwater Basin

DWR considers the Beaumont Groundwater Basin to be composed of three other groundwater basins, primarily the San Timoteo sub basin, the Upper Santa Ana Valley Groundwater Basin (No. 8-02), and the San Gorgonio Pass Sub basin (No. 7-21.04). Locally, the Beaumont Basin is treated as a distinct basin. The Beaumont Basin is outside of the Valley District service area, but is one of the sources used by YVWD.

The Beaumont Basin is located in northwestern Riverside County, south of the Yucaipa Basin. The basin eventually drains to San Timoteo Creek, a tributary of the Santa Ana River, and covers approximately 26 square miles. Groundwater elevations generally slope from the northeast to southwest in the basin.

Groundwater within the basin is predominantly found in Holocene age alluvium and in the San Timoteo Formation. While the San Timoteo Formation extends to depths in excess of 1,500 feet, water bearing sediments within the Beaumont Basin exist to depths of 700 to 1,000 feet. Estimates for total groundwater storage capacity within the basin vary. The Beaumont Basin storage capacity is estimated at approximately 1,000,000 AF.

In February 2004, the San Timoteo Watershed Management Authority filed a judgment adjudicating the groundwater rights in the Beaumont Basin and assigned the Beaumont Basin Watermaster (BBW) with the authority to manage the groundwater basin. The Beaumont Basin Watermaster is comprised of managers from the Beaumont Cherry Valley Water District, City of Banning, City of Beaumont, South Mesa Mutual Water Company, and YVWD. The Beaumont Basin Watermaster originally established a long-term yield for the Beaumont Basin of 8,560 AFY. The safe yield is reevaluated every ten years and on April 1st 2015, the BBW approved the adoption of Resolution 2015-01 (2013 Reevaluation of the Beaumont Basin Safe Yield Report and Redetermination of the Safe Yield of the Beaumont Basin), which reduced the safe yield to 6,700 AFY.

The Judgement includes a controlled overdraft (temporary surplus) provision that allows extraction up to 160,000 AF over the 10-year period immediately following the Judgement inception. During the first 10 years, the agencies could extract 16,000 AFY; after the first 10 years, extractions are limited to the amount each agency has in storage or credit. Agencies must provide the BBW with funds necessary to replace any amount of overproduction that may have occurred over a 5-year consecutive period. During the past four years, the Watermaster reports annual groundwater extractions in the basin that range from 11,800 to 15,100 AFY, with 2014 representing the third highest production year since the Judgement was in place. YVWD pumping from the Beaumont basin was 1,198 AF in 2014.

The adjudication of the Beaumont Basin has defined overlying and appropriator pumping rights and also allows for supplemental water to be stored and recovered from the basin. The Beaumont Basin, under this adjudication, is considered to be in a condition of overdraft with assigned maximum annual overlying production rights of 8,650 AF. YVWD has a right to an operating yield of 2,552 AFY from the Beaumont Basin, which consists of 381 AF of appropriative right and 2,173 AF of Controlled Overdraft and Supplemental Water Recharge Allocation. YVWD can deliver amounts in addition to the 2,552 AF as supported from overlying water right holders.

2.2.6 Chino Sub basin (DWR 8-02.01)

Fontana Water Company, the City of Rialto, and WVWD extract water from Chino Sub basin, an adjudicated basin managed by the Chino Basin Watermaster. The Chino Sub basin lies in the southwest corner of San Bernardino County. The Chino Sub basin is bordered to the east by the Rialto-Colton fault. In the other three directions, the Chino Sub basin is ringed by impermeable mountain rock, the San Gabriel Mountains to the north, the Jurupa Mountains and Puente Hills to the south and southwest. Average annual precipitation across the basin is 17 inches. This part of the San Bernardino Valley is drained by San Antonio Creek and Cucamonga Creek southerly to the Santa Ana River.

On January 2, 1975, several Chino Basin producers filed suit in California State Superior Court for San Bernardino County (the "Court") to settle the problem of allocating water rights in the Chino Basin. On January 27, 1978, the Court entered a judgment in Chino Basin Municipal Water District v. City of Chino et al. adjudicating water rights in the Chino Basin and establishing the Chino Basin Watermaster. The Judgment adjudicated all groundwater rights in Chino Basin and contains a physical solution to meet the

requirements of water users having rights in or dependent upon the Chino Basin. The Judgment also appointed the Watermaster to account for and implement the management of the Chino Basin. The Judgment declared that the initial operating safe yield of the Chino Basin is 145,000 AFY. The Basin is managed through implementation of the Chino Optimum Basin Management Plan. Per the Judgment, WVWD has a minimum of approximately 1,000 AFY of extraction rights. Extractions above that amount must be replenished with SWP water through a program with the Chino Basin Watermaster.

2.2.7 No Man's Land Sub basin

Fontana Water Company and the City of Rialto extract water from a small area believed by some to be an unadjudicated groundwater basin between the Chino Basin and the Rialto-Colton Basin known as "No Man's Land." Water rights in the area, the hydrogeological nature of this area, as well as the quantities of water produced in this area, are the subject of a lawsuit currently pending in the Superior Court for the County of San Bernardino entitled San Bernardino Valley Municipal Water District et al. v. San Gabriel Valley Water Co. et al., Case No. CVDS1311085.

2.3 Local Water Management

2.3.1 Western Judgment

The Western Judgment, entered simultaneously with the Orange County Judgment, settled rights within the upper Santa Ana River watershed to ensure that those resources would be sufficient to meet the flow obligations in the lower Santa Ana River watershed set by the Orange County Judgment (Western Municipal Water District of Riverside County v. East San Bernardino County Water District, Superior Court of Riverside County, Case No. 78426 [April 17, 1969]). Toward this end, the Western Judgment generally provides for:

- A determination of safe yield of the SBBA at 232,100 AFY;
- Establishment of specific amounts (64,862 AF) of water that can be extracted from the SBBA by plaintiff parties (parties in Riverside County). This is equal to 27.95 percent of safe yield;
- An obligation of Valley District to provide replenishment for any extractions from the SBBA by non-plaintiffs (entities in the Valley District service area) in aggregate in excess of 167,238 AF, or72.05 percent of safe yield;
- An obligation of Western to replenish the Colton Basin Area and the Riverside North Basins if extractions for use in Riverside County in aggregate exceed 3,381 AF and 21,085 AF respectively; and
- An obligation of Valley District to replenish the Colton Basin Area and Riverside North Basin Areas if water levels are lower than 822.04 MSL in specified index wells.

The Western Judgment identifies regional representative agencies to be responsible, on behalf of the numerous parties bound thereby, for implementing the replenishment obligations and other requirements of the judgment. The representative entities for the Western Judgment are Valley District and Western. Valley District acts on behalf of all non-plaintiffs (San Bernardino County agencies) and Western acts on behalf of the Plaintiffs (Riverside County agencies). Plaintiff parties with specific rights to produce 27.95 percent of the safe yield from the SBBA are the City of Riverside, Riverside Highland Water Company, Meeks & Daley Water Company, and the Regents of the University of California.

The Western Judgment contemplates that the parties will undertake "new conservation" which is defined as any increase in replenishment from natural precipitation which results from operation of

works and facilities not in existence as of 1969, other than works installed to offset losses from flood control channelization. The Western Judgment specifies that the parties to the Judgment have the right to participate in any new conservation projects, provided they pay the appropriate share of the cost. The net effect of new conservation is an increase in pumping rights by the Plaintiffs and "credits" for the non-Plaintiffs. A copy of the Western Judgment is provided in Appendix I.

In 2013, both the Plaintiffs and Non-Plaintiffs agreed to participate in the cost to capture water that historically flowed to the ocean. This New Conservation was due to the construction and operation of the Seven Oaks Dam. The 2015 Annual Report for the Western-San Bernardino Annual Report increases the rights for both Parties as shown in Table 2-6.

Table 2-6. Adjusted SBBA Rights Due to New Conservation Allocation

Parties	Percentage	Safe Yield Allocation (AF)	New Conservation Allocation (AF)	Adjusted Right (AF)
Non- Plaintiffs	**72.05%**	**167,238**	**5,507**	**172,745**
Plaintiffs	**27.95%**	**64,862**	**2,136**	**66,998**
City of Riverside		52,199	1,719	53,918
Riverside Highland Water Company		4,294	141	4,435
AM and MD Water Company		7,833	258	8,091
Regents of the University of California		536	18	554
Total Sum of Extractions	**100%**	**232,100**	**7,643**	**239,743**

2.3.2 Orange County Judgment

In 1963, the Orange County Water District (OCWD) filed suit against substantially all water users in the area tributary to Prado Dam seeking adjudication of water rights on the Santa Ana River. The litigation ultimately involved over 4,000 served water users and water agencies, the four largest of which were OCWD, Valley District, Western, and the Chino Basin Municipal Water District (now the Inland Empire Utilities Agency). Given the magnitude of the potential litigation, these four districts and other parties developed a settlement that was approved by the Orange County Superior Court in a stipulated judgment entered on April 17, 1969, Orange County Water District v. City of Chino et al., Case No. 117628 (Orange County Judgment). The Orange County Judgment imposes a physical solution that requires parties in the upper Santa Ana River watershed to deliver a minimum quantity of water to points downstream including Riverside Narrows and Prado Dam. A provision of the Orange County Judgment related to conservation establishes that, once the flow requirements are met, the Upper Area parties "may engage in unlimited water conservation activities, including spreading, impounding, and other methods, in the area above Prado Reservoir." The Orange County Judgment is administered by the five-member Sana Ana River Watermaster that reports annually to the court and the four representative agencies. Valley District, the Inland Empire Utilities Agency, and Western nominate one member each to the Watermaster, OCWD nominates two members, and members are appointed by the court. A copy of the Orange County Judgment is provided in Appendix H.

2.3.3 1961 Rialto Basin Decree

The Rialto Basin Decree was described previously in Section 2.2.2. A copy of the Rialto Basin Decree is provided in Appendix K.

2.3.4 Seven Oaks Accord

On July 21, 2004, Valley District, Western, the City of Redlands, EVWD, Bear Valley Mutual Water Company, Lugonia Water Company, North Fork Water Company, and Redlands Water Company signed a settlement agreement known as the Seven Oaks Accord (Accord). The Accord calls for Valley District and Western to recognize the prior rights of the water users for a portion of the natural flow of the Santa Ana River. In exchange, the water users agree to withdraw their protests to the water right application submitted by Valley District on behalf of itself and Western. All the parties to the Accord have agreed to support the granting of other necessary permits to allow Valley District and Western to divert water from the Santa Ana River. By means of the Accord, Valley District agreed to modify its water right applications to incorporate implementation of the Accord. Additionally, the Accord requires Valley District and Western to develop a groundwater spreading program in cooperation with other parties, "that is intended to maintain groundwater levels at the specified wells at relatively constant levels, in spite of the inevitable fluctuations due to hydrologic variation." In response, local agencies included groundwater management in the USARW IRWMP and have collectively prepared a Regional Water Management Plan annually since 2008.

2.3.5 Integrated Regional Water Management Plan

The Valley District service area is incorporated into two Integrated Regional Water Management Plans.

The Santa Ana Watershed Project Authority (SAWPA) was formed in 1968 as a planning agency and was transformed in 1972 through a change in its mission to plan and build facilities that would protect the water quality of the SAR watershed. SAWPA is a Joint Powers Authority, classified as a Special District (government agency) in which it carries out functions useful to its member agencies: Inland Empire Utilities Agency, Eastern Municipal Water District, Orange County Water District, Valley District, and Western. SAWPA developed an Integrated Regional Water Management Plan (IRWMP) for the entire SAR watershed titled the One Water One Watershed (OWOW) Plan. This broad planning document is the framework for overall water management in the watershed and is largely based upon the planning efforts of its member agencies. The OWOW Plan is a "macro-level" plan that is consistent with DWR's *California Water Plan* (Bulletin 160) and State Water Resources Control Board's (SWRCB) Strategic Plan, Watershed Management Initiative, and the basin planning process.

The 2015 Upper Santa Ana River Watershed IRWMP (USARW IRWMP) provides data for the OWOW Plan. By focusing on a finer scale, the USARW IRWMP reveals that the Upper SAR watershed has several unique water management challenges and issues. The purpose of the USARW planning process is to focus on local issues specific to the upper watershed and to assess water management opportunities in greater detail. This collaborative process addresses some of the long-term water management strategies of the Upper SAR watershed and will greatly contribute to protecting and enhancing reasonable and beneficial uses of the watershed's water resources. This planning process is a part of the overall SAR water management planning process and is in agreement with past and current SAWPA regional planning initiatives. In addition, several agencies in the IRWM Region, including Valley District, also take part in SAWPA planning efforts.

The 2015 USARW IRWMP serves as an update to the IRWMP developed in 2007 and was developed by the following agencies:

1. Big Bear Lake Department of Water and Power
2. Big Bear City Community Services District

3. City of Loma Linda
4. City of Redlands Municipal Utilities and Engineering Department
5. City of Rialto
6. City of Riverside Public Utilities Department
7. East Valley Water District
8. Fontana Union Water Company
9. San Bernardino County Flood Control District
10. San Bernardino Municipal Water Department
11. San Bernardino Valley Municipal Water District
12. San Bernardino Valley Water Conservation District
13. San Gorgonio Pass Water Agency
14. West Valley Water District
15. City of Yucaipa
16. Yucaipa Valley Water District

The primary purpose of the USARW IRWMP is to provide a roadmap for the management of water resources in the area to ensure long-term, reliable water supply availability for the IRWM Region. The first step in developing this roadmap is the formulation of broad water management goals and more specific water management objectives that can help achieve those goals. The IRWMP identifies four key goals:

1. Improve water supply reliability
2. Balance flood management and increase stormwater recharge
3. Improve water quality
4. Improve habitat and open space

The USARW IRWMP also identifies 15 specific and measurable objectives to support achievement of the four goals. The USARW IRWMP stakeholders formed a Basin Technical Advisory Committee (BTAC) to facilitate implementation of the IRWMP.

Future updates of the OWOW Plan and the USARW IRWMP will build on the water supply and demand information presented in this RUWMP.

2.3.6 Annual Regional Water Management Plan

The BTAC develops the annual water management plan. Participation in the BTAC is open to any interested agency. The agencies currently participating in the BTAC are:

- City of Loma Linda
- City of Redlands Municipal Utilities and Engineering Department
- City of Rialto
- City of Riverside Public Utilities Department
- Western Municipal Water District
- San Bernardino Valley Municipal Water District
- East Valley Water District
- Bear Valley Mutual Water Company
- West Valley Water District
- San Bernardino Municipal Water Department

- San Bernardino Valley Water Conservation District
- Yucaipa Valley Water District
- San Bernardino County Flood Control District
- City of Colton

The BTAC works cooperatively and strives to make decisions by consensus. It focuses on long-term management of water resources by implementing the strategies in the USARW IRWMP. Currently, BTAC meets monthly with the primary purpose of providing technical advice for the management of local resources to the Western-San Bernardino Watermaster agencies, Western Municipal Water District and Valley District.

The latest version of the BTAC Regional Water Management Plan is available at http://www.sbvmwd.com/about-us/local-water-conditions.

2.3.7 Settlement Agreement with San Bernardino Valley Water Conservation District

Valley District, Western, and the San Bernardino Valley Water Conservation District entered into a settlement agreement on August 9, 2005 whereby the agencies will work cooperatively to develop an annual groundwater management plan. Since both parties are members of the BTAC, this requirement is being met by the BTAC's Regional Water Management Plan, which largely emphasizes groundwater management.

2.4 Transfers, Exchanges, and Groundwater Banking Programs

2.4.1 Transfers and Exchanges

Transfers and exchanges are discussed in chapters for each individual agency.

2.4.2 Groundwater Banking Programs

As stated previously, storing water in local groundwater basins for later use during droughts is one of the primary management strategies in the USARW IRWMP. Valley District has been conducting groundwater recharge activities in the SBBA since 1972. The San Bernardino Valley Water Conservation District and its predecessors have conducted water conservation (groundwater recharge) activities since 1912 in areas that overlie the SBBA.

The USARW IRWMP evaluated additional conjunctive use scenarios and concluded that they were feasible. Conjunctive use projects currently under development in the Valley District Service area are described in Section 2.6.3.

2.5 Local Water Supply Reliability

2.5.1 Groundwater Quality

Groundwater quality varies among the Region's groundwater basins, particularly in the subbasins of the Upper SAR due to geology and faulting patterns and recharge points, and from anthropogenic sources of contamination. Much of the groundwater sampling and evaluation was reported in California's Groundwater Bulletin 118 and in the 2015 IRWMP. Groundwater quality is regularly monitored and reported to the Regional Water Quality Control Board - Santa Ana Region.

Valley District and the retail agencies participate in regional efforts to monitor water quality. As part of efforts to use SWP Water to recharge local groundwater basins, Valley District prepares a triennial report for the Santa Ana RWQCB. Each report documents the water quality of SWP Water, as indicated by TDS and nitrogen, in comparison to the applicable groundwater objectives. Reports for different basins are prepared on a rotating schedule to provide a more robust view of water quality. Reports are prepared for groundwater recharge in Bunker Hill A, Bunker Hill B and portions of the Lytle Creek, Rialto, Yucaipa, San Timoteo, Colton and Riverside Basins Management Zones.

Valley District prepared a report for the Yucaipa and San Timoteo Basins in 2015, as well as one for the Bunker Hill A and B, Lytle, and Rialto-Colton Management Zones. The reports found that the TDS and nitrogen levels in the SWP Water were typically below the applicable groundwater objective for the groundwater management zone.

Valley District, Western, the City of Riverside, and the City of San Bernardino are collaborating on the development of a water quality model for the Riverside and Arlington Groundwater Basins. The model will be used to evaluate the potential impacts of groundwater recharge on basin TDS and nitrate levels.

2.5.2 Salinity Objectives

The 1995 Water Quality Control Plan for the Santa Ana River Basin, as amended in 2004, contains water quality objectives for nitrogen and total dissolved solids (collectively called "Salinity Objectives") in groundwater. These standards were set with the objective of protecting long-term conjunctive use of the basin. In June 2007, multiple water entities in the Upper Santa Ana River watershed and the SARWQCB entered into a Cooperative Agreement to "Protect Water Quality and Encourage the Conjunctive Uses of Imported Water in the Santa Ana River Basins." The Cooperative Agreement is intended to allow parties that recharge imported water within the Santa Ana Region to continue recharge while monitoring and improving groundwater basin quality. Specifically, the Cooperative Agreement requires parties that undertake groundwater recharge with imported water to:

- collect data on ambient water quality in each groundwater management zone;
- track the amount and quality of imported water recharged in each groundwater management zone;
- project ambient water quality in each groundwater management zone for the subsequent 20 years; and
- report the data described above every 3 years.

As part of the 2007 IRWMP, entities in the SBBA evaluated how and if nitrogen and TDS levels could impact the ability to use imported water for recharge. Modeling performed for the IRWMP found that historic yearly and monthly SWP nitrogen levels were always lower than the lowest ambient level in any of the groundwater management zones. Thus nitrogen is not anticipated to limit the use of SWP water in the San Bernardino Valley. However, review of SWP water quality data indicates that in some dry-year and multiple dry-year periods, SWP water TDS levels could exceed ambient groundwater TDS levels. However, since SWP water project supplies would be limited in dry-periods to between 12,300 to 35,900 AFY, and since TDS levels would be much lower during other times, the long-term impacts are difficult to quantify.

In January 2008, Valley District entered into an agreement with the SARWQCB which requires the development of a water quality report every three years. The intent of this report is to identify any potential water quality issues early on so they can be mitigated and to avoid any long-term impacts.

At the current time, water quality is not expected to limit the use of SWP water. However, water quality issues are constantly evolving. Agencies of the San Bernardino Valley will continue to take action to protect and treat supply when needed, but it is well recognized water quality treatment can have significant costs.

2.5.3 Inland Empire Brine Line

The Inland Empire Brine Line (herafter "Brine Line"), the portion of the Santa Ana Regional Interceptor (SARI) owned by SAWPA, was built over a period of 25 years (1975-2000) to collect and transport industrial brine that could not be treated at local (inland) wastewater treatment facilities. The Brine Line runs from the City of San Bernardino to a point just downstream of the Prado Dam. Another branch of the Brine Line runs from Lake Elsinore northwesterly until joining the Brine Line. The two branches combine into one branch and extend through Orange County to an ocean outfall. The entire SARI is 93 miles long. In 2012, YVWD constructed a thirteen mile Yucaipa Valley Brine Line to convey brine from YVWD's Wochholz Regional Water Recycling Facility to the Brine Line. The Brine Line is a tremendous asset to the Valley District service area by enabling the transport of salts out of the area.

2.5.4 Chino and Yucaipa Basins Salt Management

The buildup of TDS and nitrogen in groundwater is an on-going water quality challenge in the Chino and Yucaipa basins. Despite the construction and operation of the Brine Line, a salt imbalance remains. Modeling performed by SAWPA has indicated that water from the Chino and Yucaipa basins could consistently exceed the 500 mg/L secondary MCL in the future if mitigation measures are not taken.[1]

SAWPA's Salinity Management Plan identifies potential long-term options to address the need for additional salt removal, including:

- Best management practices: source control measures aimed at reducing salt mass balances that would otherwise be discharged to ground or surface waters, or introduced into the wastewater stream. Examples include: eliminating salt-based domestic water softening devices, promoting the use of low-salt detergents, addressing salt runoff, and implementing pre-treatment programs.
- Desalters for water supply: Increase the amount of water desalted so as to create blended water with salinity less than 500 mg/L.
- Desalters for wastewater: Avoid adding salt to groundwater by adding desalination to all or a portion of the wastewater effluent stream. Providing advanced treatment to secondary effluent would also increase the possibility of reusing the effluent, including indirect potable water reuse via groundwater recharge or surface storage augmentation.
- Brine concentration: Increase the efficiency of desalters to limit the amount of liquid waste included in the brine stream entering the SARI.

WVWD can pump water from the Chino Basin, and YVWD can pump water from the Yucaipa Basin. Both these agencies recognize that groundwater from these basins may require treatment for TDS and nitrates.

[1] EPA has established National Secondary Drinking Water Regulations. EPA does not enforce these "secondary MCLs." They are established only as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color and odor. These contaminants are not considered to present a risk to human health at the secondary MCL.

2.5.5 Known Groundwater Contaminant Plumes

The SBBA has the following groundwater contaminant plumes:

- The Crafton-Redlands plume, with trichloroethylene (TCE) and lower levels of perchloroethylene (PCE), debromochloropropane (DBCP) and perchlorate;
- The Norton Air Force Base TCE and PCE plume, stretching 2.5 miles from its source and contaminating 100,000 AF of groundwater;
- The Muscoy and Newmark plumes near the Shandon Hills, which are Superfund sites with TCE and PCE; and
- The Santa Fe plume with PCE, TCE, and 1,2 dichloroethylene (1,2-DCE)

Other plumes include:

- Rialto Area Perchlorate Plume (Rialto-Colton Basin)
- North Riverside Basin MTBE Contamination (Riverside North Basin)

Separately from the foregoing remediation efforts, Fontana Water Company currently operates and maintains a groundwater remediation project at its Plant F10 pursuant to a long-term agreement with San Bernardino County, the owner and operator of the Mid Valley Sanitary Landfill and corresponding Clean-Up and Abatement Order issued to San Bernardino County by the RWQCB. The 5,000-gallons per minute (gpm) treatment plant utilizes liquid phase granular activated carbon to treat for volatile organic compounds including, but not limited to, PCE, TCE, 1,1-DCE, and cis-1,2-DCE. The plant treats and removes those contaminants from groundwater extracted from both the Rialto-Colton and No Man's Land sub basins.

2.5.5.1 Crafton-Redlands Plume

Two commingled plumes, comprising the Crafton-Redlands plume, have impacted water supply wells for the cities of Riverside, Redlands, and Loma Linda, including Loma Linda University wells. One plume contains TCE and the other perchlorate; both are in the upper 300 to 400 feet of groundwater. TCE has been measured in water supply wells at over 100 parts per billion (ppb), over 20 times the MCL of 6 ppb. Currently, however, water supply well concentrations are around 7 ppb. Perchlorate is present in water supply wells at concentrations up to 77 ppb.

As required by the Santa Ana Regional Water Quality Control Board (SARWQCB), the Lockheed Martin Corporation (Lockheed) has prepared contingency plans to address impacts of the plume on water supply wells. These include blending, treatment, and/or providing alternative water supply sources. The plumes are currently being captured by the City of Riverside's Gage Well Field. Lockheed has installed granular activated carbon treatment units at some of the gage wells to remove TCE and has installed ion exchange units on some of these wells for the removal of perchlorate.

2.5.5.2 Norton Air Force Base Plume

The Norton Air Force Base plume, located just to the southwest of the former installation in the City of San Bernardino, is a major contaminant plume, consisting primarily of TCE and PCE. The plume has impaired 10 wells owned by the City of Riverside and the City of San Bernardino. Cleanup efforts by the Air Force, consisting of soil removal, soil gas extraction, and groundwater treatment, have significantly reduced this plume. The treatment plants now operate in a standby mode.

2.5.5.3 Newmark and Muscoy Plumes

Within the City of San Bernardino, the Newmark plume and the Muscoy plume consist primarily of PCE. The plumes have impacted San Bernardino water supply wells. Under the federal Superfund Program, the U.S. Environmental Protection Agency (EPA) has implemented cleanup of these plumes, including use of groundwater extraction and treatment using granulated activated carbon. The treated water is then used to supplement the City of San Bernardino's potable water supply. It appears that cleanup efforts will be adequate to protect 32 down-gradient water supply wells. However, groundwater model simulations suggest that containment of the plume will need additional extraction wells that will result in pumping of at least 14,000 AFY.

2.5.5.4 Sante Fe Plume

The Santa Fe groundwater plume consists primarily of 1,2-DCE, TCE, and PCE. This plume is currently being monitored.

2.5.5.5 Rialto Area Perchlorate Plume

Since 2002, the SARWQCB has been conducting an investigation of groundwater contamination in the area of the City of Rialto. The focus of the investigation has been facilities located on a 160-acre site in Rialto. The site has also been designated as a Superfund site by the US EPA. In 2005 the SARWQCB Executive Officer issued a Cleanup and Abatement Order and subsequent amendments naming a number of responsible parties. Since that time, the Cleanup and Abatement Order has been the subject of challenges in petitions filed by entities named as parties responsible for the contamination. The ongoing legal wrangling and persistent chemical contamination by TCE, perchlorate, and nitrates has required both WVWD and the City of Rialto to avoid use of certain wells and certain water sources.

WVWD and the City of Rialto have planned and designed a wellhead treatment system to protect local groundwater supplies. The wellhead treatment system will use a fluidized bed biological treatment system to breakdown perchlorate to chloride, and nitrate to nitrogen gas. The system will treat groundwater at a rate of about 2,000 gpm. WVWD and the City plan to treat groundwater pumped from two existing wells: Rialto Well No. 6 and WVWD Well No. 11. The Groundwater Wellhead Treatment System Project represents a scientific first in California; utilizing a state-approved biological treatment process employing micro-organisms to destroy the perchlorate and other contaminants in drinking water and minimize the need for waste handling and disposal.

The Groundwater Wellhead Treatment System Project will allow WVWD to restore a portion of its groundwater basin supply. Given the treatment to be provided by the Groundwater Wellhead Treatment System Project, the Rialto Area Perchlorate Plume is not anticipated to further negatively affect WVWD supply. However, water quality issues are constantly evolving. Agencies of the San Bernardino Valley will continue to take action to protect and treat supply when needed, but it is well recognized that water quality treatment can have significant costs.

2.5.5.6 North Riverside Basin MTBE Contamination

In 1988, the SARWQCB issued a Cleanup and Abatement Order to the SFPP Colton Fuel Terminal (owned by Kinder Morgan) located in Bloomington, California. The Terminal, which is located just south of the I-10 freeway on the east side of Riverside Avenue, is a bulk petroleum storage and distribution facility which was built in the 1950s. It currently occupies 82 acres and contains 32 refined petroleum product tanks and fuel-loading racks where transport tanker trucks are filled.

In response to the Cleanup and Abatement Order, a monitoring and extraction well network for the Terminal was constructed. It consists of 131 wells in and around the Terminal as well as 14 soil vapor extraction wells. The site samples for Benzene, methyl tertiary butyl ether (MTBE) and tertiary butyl alcohol (TBA).

WVWD has identified that a few wells located near the Terminal are vulnerable to MTBE contamination. Two WVWD wells are located south of the Terminal. Wells No. 40 and 41 are sampled monthly. No MTBE has been detected in these wells or any other WVWD Wells.

WVWD will continue to monitor MTBE in its wells. Existing technologies are available to treat groundwater affected by MTBE (air stripping, granulated activated carbon, biofiltration, advanced oxidation processes). For these reasons, MTBE is not anticipated to create a long-term effect on water supplies. It is recognized however, that treatment of supplies can have significant costs and delay the full use of a supply source.

2.5.6 Summary of Water Quality Impacts on Supply Reliability

Water quality is monitored, tracked, and addressed by implementing treatment, as necessary. In addition to the groundwater plumes described above, there are other contaminants in the basin, including but not limited to nitrate and DBCP, which can require treatment. There are also emerging contaminants and new water quality regulations which could increase the level of required treatment. Based on current conditions and knowledge, water quality is not anticipated to affect regional water supply reliability.

2.6 Planned Water Supply Projects and Programs

The USARW has collaborated to manage the region's unique water supply, water quality, flood, and habitat challenges. These challenges are key considerations in the implementation of new water supply projects and are reflected in the goals of the USARW IRWMP.

2.6.1 Water for Habitat

The region is home to a variety of threatened or endangered species. No projects may be completed without obtaining permits from the wildlife agencies. Rather than obtaining permits on a project-by-project basis, the agencies in the region decided to collectively apply for one permit for their proposed projects. This approach is believed to be better for the environment, less costly and faster than obtaining permits one at a time.

The Upper Santa Ana River Habitat Conservation Plan (HCP) is a collaborative effort currently underway among the water resource agencies of the SAR watershed, in partnership with the United States Fish and Wildlife Service, California Department of Fish and Wildlife, and several other government agencies and stakeholder organizations. The purpose of the HCP is to develop a comprehensive plan that provides sufficient water for species and allows the water agencies to construct their projects. The HCP will specify how species and their habitats will be protected and managed in the future and will provide the incidental take permits needed by the water resource agencies under the Federal and State endangered species acts to maintain, operate, and improve their water resource infrastructure. In addition to the HCP, there are multiple environmental and ecological management plans currently in place, including the Western Riverside County Multi-Species Habitat Conservation Plan and Upper Santa Ana Wash Land Management and Habitat Conservation Plan.

2.6.2 Recycled Water

Development of recycled water in a strategy in the USARW IRWMP. Although recycling wastewater is costly, it is very reliable. Although it is costly, it is also highly reliable since there will be flows to wastewater plants whether the weather is wet or dry. For that reason, recycled water is often labeled "drought-proof". Because it is the costliest supply, the region has not heavily developed this supply choosing instead to develop other, less costly supplies first. The recent drought highlighted the advantage of having a drought-proof supply, like recycled water, as a part of the regional water portfolio. This led to Valley District and the agencies within its service area, as well as Western and the City of Riverside, to prepare a Regional Recycled Water Concept Study. This is a collaborative process to identify recycled water projects that maximize regional benefits to water supply reliability, water quality, and habitat sustainability. The stakeholder group is targeting development of 10,000 to 12,000 AFY of new recycled water supply in the near term, with that volume expanding in the future as population growth in the area generates additional recycled water supply. The recycled water projects identified in this process will also be incorporated into the HCP analysis to ensure that implementation of these projects supports both water supply and habitat sustainability.

Currently, some individual agencies are using recycled water for non-potable reuse. Recycled water produced in the Valley District service area that is not currently used for non-potable reuse is discharged to the SAR or its tributaries and has become a critical source of water that sustains habitat in natural rivers and streams, including the Santa Ana Sucker, which is a Federally listed endangered species. Development of new recycled water supplies in the upper SAR watershed must be balanced with the need to conserve and maintain this habitat.

Potential recycled water supplies for each retailer are described in their respective chapters. Anticipated recycled water supplies are included in the regional summary of supplies.

2.6.3 Conjunctive Use Projects

One of the foundational water management strategies in the USARW IRWMP is conjunctive use which has been generally described as using our groundwater basins to store water that is available in wet years so that it is available to be pumped out during dry years (dry year yield). Groundwater modeling for the IRWMP concluded that conjunctive use is feasible. In February 2012, the Basin Technical Advisory Committee (BTAC) recommended a cumulative total of 40,000 acre-feet per year of dry year yield. This capacity represents an efficient, initial project size with the possibility to expand to as much as 80,000 acre-feet per year.

Valley District, in cooperation with water agencies throughout the Santa Ana River Watershed and in cooperation with agencies within its service area have been developing a comprehensive conjunctive use program in the San Bernardino Basin Area (SBBA). The two programs will share facilities, wherever possible, to reduce costs. The watershed-scale program is called the Santa Ana River Conservation and Conjunctive Use Program (SARCCUP) and the local program is called the Bunker Hill Conjunctive Use Program (BHCUP). Both programs will benefit the retail water agencies within Valley District's service area by increasing water levels and by providing an alternate source of water in dry years. The programs will collectively store up to 112,500 acre-feet in the SBBA which will provide up to 37,500 acre-feet per year of dry year yield initially for up to 3 consecutive years. The portion of these projects available to agencies in Valley District's service area is 88,500 (36,000 + 52,500) acre-feet of storage and 29,500 (12,000 + 17,500) acre-feet of dry year yield.

2.6.4 Groundwater Recharge

In addition to the ongoing recharge operations throughout the Valley District service area, this section describes new recharge projects that are currently being developed.

2.6.4.1 Cactus Basin Recharge

Valley District is working cooperatively with the San Bernardino County Flood Control District (Flood Control) to recharge SWP supplemental water in the Cactus Basins, which would recharge high quality water into the Rialto-Colton sub basin. The project includes the construction of new basins 3 and 3A, which are being built for flood control. Basin development will include the construction of a bypass pipeline to manage flood flows. To optimize the joint use of these basins for flood control, the recharge is planned to occur during the dry-season, from April to October.

2.6.5 Stormwater Capture

One of the goals of the USARW IRWMP is to balance flood management and increase stormwater recharge. Stormwater management has been an ongoing challenge in the USARW Region and flood control facilities, such as detention basins, have provided much needed control of these flows. While conveying flood water safely through the upper SAR watershed is of critical importance, detaining runoff for recharge is also desirable. The region's groundwater managers are working with flood control agencies to optimize the use of these flood control facilities to increase the recharge of stormwater into the groundwater basin. The goal is to strike a balance between flood control and recharge that will ensure protection from flooding, while providing additional supplies to meet growing future demands and to supplement these supplies during drought years.

2.6.5.1 Santa Ana River Enhanced Recharge Project

The Enhanced Recharge Project is located on the Santa Ana River and will divert up to 500 cubic feet per second (cfs) and up to approximately 80,000 AFY. Water will be temporarily captured at the Seven Oaks Dam and diverted flows will flow to recharge basins for recharge into the SBBA or be delivered for direct use through the first phase of the Plunge Pool Pipeline. This project is estimated to provide up to 12,000 acre-feet per year.

2.6.5.2 Active Recharge Project

The Active Recharge Project is envisioned to help better manage surface water available to the SBBA. In 2015, a stormwater flow and capture analysis was performed to determine:

- The volume of surface water which has historically migrated out of the SBBA,
- The volume of surface water that is generated internally within the SBBA as the result of historical and on-going urbanization of the SBBA,
- The quantity of stormwater that is generated by the major tributary creeks to the Santa Ana River,
- The location and preliminary (conceptual) designs of potential new stormwater capture facilities that could maximize the capture and recharge of surface water flows,
- Potential environmental constraints for each of the selected tributaries,
- Potential modifications to existing retention basins and spreading grounds to further increase surface water capture and recharge, and
- The volume of potential additional recharge to the SBBA and the effect to surface water volumes leaving the SBBA that will occur as a result of implementation of an active recharge

project (this remaining flow out of the SBBA would be available for recharge in the proposed Riverside North Aquifer Storage and Recovery Project; see Section 2.6.5.3).

The study included preparation of proposed conceptual designs for new and improved existing surface water capture and recharge facilities in areas of the tributary creeks having the greatest stormwater flows and the least amount of environmental constraints. The project stakeholders are currently working to refine the conceptual designs and estimates of recharge.

2.6.5.3 Riverside North Aquifer Storage and Recovery

The Riverside North Aquifer Storage and Recovery Project is a proposed storm water capture project located in the southern portion of the City of Colton and north of the City of Grand Terrace. The project consists of proposed in-channel and off-channel recharge. The proposed off-channel recharge facility location is along the west side of the Santa Ana River and proposes the construction of up to eight individual recharge basins encompassing approximately 25 acres. The in-channel recharge basin proposes construction of an inflatable dam across the Santa Ana River channel, which can be raised and lowered depending on the amount of water flowing in the river.

This project is estimated to provide up to 12,800 acre-feet of water per year. The in-channel and off-channel water captured will be recharged into the Riverside North sub basin and a portion of the retained water will be diverted to the Riverside Canal pipeline for direct use.

2.7 Development of Desalination

2.7.1 Opportunities for Brackish Water and/or Groundwater Desalination

Desalination, or desalting, is a process to create drinking water from water containing higher salt levels. Desalination can use a thermal distillation process or a membrane process (such as electrodialysis or reverse osmosis). All desalination processes produce a brine waste stream that must be disposed. The need for brackish groundwater desalting is somewhat limited in the San Bernardino Valley.

Although elevated salts are currently not a concern in the San Bernardino Valley, elevated salts are an issue for retailers that overlie the San Timoteo Groundwater Basin where agencies in this basin are considering implementing desalter operations. The area is fortunate to have a Brine Line which can transport non-reclaimable waste, by gravity, from the City of San Bernardino Wastewater Reclamation Plant to the Orange County Sanitation District's treatment plant.

2.7.2 Opportunities for Seawater Desalination

Seawater desalination would require two major components:

1. The development or financial contribution to a seawater desalination facility and associated facilities (e.g., brine disposal facility); and
2. The exchange of a like amount of SWP water for the amount of water desalted.

The development of (or financial participation in) a new seawater desalination project, while costly, is being investigated and implemented by other wholesale and retail water agencies in southern California. Because the San Bernardino Valley is an inland area, participation in desalination would require agencies in the San Bernardino Valley to join with other water purveyors in the development of a coastal desalination facility and then receive water from the SWP supplies of other participants via an

exchange. Due to conveyance requirements, it is not cost-effective for the San Bernardino Valley to receive direct delivery of desalted ocean water.

Seawater desalination is an alternative that is technically viable. However, production and treatment costs have historically been several times higher than those of groundwater costs and SWP costs with conventional treatment. San Bernardino Valley agencies will continue to evaluate the viability of desalinated water supplies.

2.8 Anticipated Regional Water Supply Sources in Normal, Wet, Dry, and Multiple Dry Years

The following tables summarize anticipated regional water supply sources in normal, wet, dry, and multiple dry year periods. These tables summarize the supplies available to the region as a whole, not just the agencies participating in the RUWMP.

Table 2-7. Regional Water Supply – Normal Year (AF)

Water Source	2020	2025	2030	2035	2040
Precip. (Surface Water)					
SBBA Surface Water	33,620	33,620	33,620	33,620	33,620
SBBA New Conservation Allocation	5,507	5,507	5,507	5,507	5,507
Oak Glen	500	500	500	500	500
Riverside North ASR	2,000	2,000	2,000	2,000	2,000
Active Recharge Program	10,000	10,000	10,000	10,000	10,000
Sub-Total Precip. (Surface Water)	51,627	51,627	51,627	51,627	51,627
Precip. (Groundwater)					
SBBA Groundwater	133,618	133,618	133,618	133,618	133,618
Rialto-Colton	10,242	10,242	10,242	10,242	10,242
Riverside North	30,100	30,100	30,100	30,100	30,100
Yucaipa	9,600	9,600	9,600	9,600	9,600
Beaumont	2,552	2,552	2,552	2,552	2,552
No Man's Land	1,000	1,000	1,000	1,000	1,000
Chino	900	900	900	900	900
Sub-Total Precip. (Groundwater)	188,012	188,012	188,012	188,012	188,012
SWP Water					
Expected SWP Allocation	63,000	63,000	63,000	63,000	63,000
Direct Deliveries	36,607	37,388	37,758	38,502	37,858
SWP into Storage	26,393	25,612	25,242	24,498	25,142
Return Flow Direct Deliveries (36% of Direct Deliveries)	13,179	13,460	13,593	13,861	13,629
Sub-Total SWP Water	76,179	76,460	76,593	76,861	76,629
Recycled Water					
City of Redlands, City of San Bernardino, East Valley Water District, Yucaipa Valley Water District	21,951	29,260	36,320	43,280	50,340
Total All Supplies	**337,769**	**345,359**	**352,552**	**359,780**	**366,608**

Notes:

(a) The San Bernardino Basin is managed whereby total safe yield is a combination of Surface Water and Groundwater totaling 239,743 AFY. Per the Western Judgment, supply available to the Valley District service area is 172,745 AFY. A decrease in available surface water in any given year does not change available yield from the basin.

(b) Assumes SWP Water is stored in wet years so that it can supplement lower deliveries of SWP water in dry years.

(c) The Watermaster estimates a 36% return from the direct deliveries of SWP in the SBBA.

(d) Does not include SWP water from San Gorgonio Pass Water Agency.

(e) Estimates of Direct Deliveries and Recycled Water from Chapters 7 through 15 of this RUWMP.

Table 2-8. Regional Supply - Single Wet Year (AF)

Water Source	2020	2025	2030	2035	2040
Precip. (Surface Water)					
SBBA Surface Water	37,000	37,000	37,000	37,000	37,000
SBBA New Conservation Allocation	5,507	5,507	5,507	5,507	5,507
Oak Glen	500	500	500	500	500
Riverside North ASR	2,000	2,000	2,000	2,000	2,000
Active Recharge Program	20,000	20,000	20,000	20,000	20,000
Sub-Total Precip. (Surface Water)	65,007	65,007	65,007	65,007	65,007
Precip. (Groundwater)					
SBBA Groundwater	130,238	130,238	130,238	130,238	130,238
Rialto-Colton	10,242	10,242	10,242	10,242	10,242
Riverside North	30,100	30,100	30,100	30,100	30,100
Yucaipa	9,600	9,600	9,600	9,600	9,600
Beaumont	2,552	2,552	2,552	2,552	2,552
No Man's Land	1,000	1,000	1,000	1,000	1,000
Chino	900	900	900	900	900
Sub-Total Precip. (Groundwater)	184,632	184,632	184,632	184,632	184,632
SWP Water					
Expected SWP Allocation	100,550	100,550	100,550	100,550	100,550
Direct Deliveries	36,607	37,388	37,758	38,502	37,858
SWP into Storage	63,943	63,162	62,792	62,048	62,692
Return Flow Direct Deliveries (36% of Direct Deliveries)	13,179	13,460	13,593	13,861	13,629
Sub-Total SWP Water	113,729	114,010	114,143	114,411	114,179
Recycled Water					
City of Redlands, City of San Bernardino, East Valley Water District, Yucaipa Valley Water District	21,951	29,260	36,320	43,280	50,340
Total All Supplies	**385,319**	**392,909**	**400,102**	**407,330**	**414,158**

Notes:

(a) The San Bernardino Basin is managed whereby total safe yield is a combination of Surface Water and Groundwater totaling 239,743 AFY. Per the Western Judgment, supply available to the Valley District service area is 172,745 AFY. A decrease in available surface water in any given year does not change available yield from the basin.

(b) Assumes SWP Water is stored in wet years so that it can supplement lower deliveries of SWP water in dry years.

(c) The Watermaster estimates a 36% return from the direct deliveries of SWP in the SBBA.

(d) Does not include SWP water from San Gorgonio Pass Water Agency

(e) Estimates of Direct Deliveries and Recycled Water from Chapters 7 through 15 of this RUWMP.

Table 2-9. Regional Water Supply – Single Dry Year (AF)

Water Source	2020	2025	2030	2035	2040
Precip. (Surface Water)					
SBBA Surface Water	10,757	10,753	10,748	10,743	10,743
SBBA New Conservation Allocation	5,507	5,507	5,507	5,507	5,507
Oak Glen	175	175	175	175	175
Riverside North ASR	2,000	2,000	2,000	2,000	2,000
Active Recharge Program	0	0	0	0	0
Sub-Total Precip. (Surface Water)	18,439	18,435	18,430	18,425	18,425
Precip. (Groundwater)					
SBBA Groundwater	156,481	156,485	156,490	156,495	156,495
Rialto-Colton	10,242	10,242	10,242	10,242	10,242
Riverside North	30,100	30,100	30,100	30,100	30,100
Yucaipa	9,600	9,600	9,600	9,600	9,600
Beaumont	2,552	2,552	2,552	2,552	2,552
No Man's Land	1,000	1,000	1,000	1,000	1,000
Chino	900	900	900	900	900
Sub-Total Precip. (Groundwater)	210,875	210,879	210,884	210,889	210,889
SWP Water					
Expected SWP Allocation	5,130	5,130	5,130	5,130	5,130
Direct Deliveries	36,607	37,388	37,758	38,502	37,858
SWP from Storage	57,870	57,870	57,870	57,870	57,870
Return Flow Direct Deliveries (36% of Direct Deliveries)	13,179	13,460	13,593	13,861	13,629
Sub-Total SWP Water	76,179	76,460	76,593	76,861	76,629
Recycled Water					
City of Redlands, City of San Bernardino, East Valley Water District, Yucaipa Valley Water District	21,951	29,260	36,320	43,280	50,340
Total All Supplies	**327,444**	**335,034**	**342,227**	**349,455**	**356,283**

Notes:

(a) The San Bernardino Basin is managed whereby total safe yield is a combination of Surface Water and Groundwater totaling 239,743 AFY. Per the Western Judgment, supply available to the Valley District service area is 172,745 AFY. A decrease in available surface water in any given year does not change available yield from the basin.

(b) Assumes SWP Water is stored in wet years so that it can supplement lower deliveries of SWP water in dry years.

(c) The Watermaster estimates a 36% return from the direct deliveries of SWP in the SBBA.

(d) Does not include SWP water from San Gorgonio Pass Water Agency.

(e) Estimates of Direct Deliveries and Recycled Water from Chapters 7 through 15 of this RUWMP.

Table 2-10. Regional Water Supply – Multiple Dry Year (AF)

Water Source	2020	2025	2030	2035	2040
Precip. (Surface Water)					
SBBA Surface Water	10,757	10,753	10,748	10,743	10,743
SBBA New Conservation Allocation	5,507	5,507	5,507	5,507	5,507
Oak Glen	175	175	175	175	175
Riverside North ASR	2,000	2,000	2,000	2,000	2,000
Active Recharge Program	0	0	0	0	0
Sub-Total Precip. (Surface Water)	18,439	18,435	18,430	18,425	18,425
Precip. (Groundwater)					
SBBA Groundwater	156,481	156,485	156,490	156,495	156,495
Rialto-Colton	10,242	10,242	10,242	10,242	10,242
Riverside North	30,100	30,100	30,100	30,100	30,100
Yucaipa	9,600	9,600	9,600	9,600	9,600
Beaumont	2,552	2,552	2,552	2,552	2,552
No Man's Land	1,000	1,000	1,000	1,000	1,000
Chino	900	900	900	900	900
Sub-Total Precip. (Groundwater)	210,875	210,879	210,884	210,889	210,889
SWP Water					
Expected SWP Allocation	33,860	33,860	33,860	33,860	33,860
Direct Deliveries	36,607	37,388	37,758	38,502	37,858
SWP from Storage	29,140	29,140	29,140	29,140	29,140
Return Flow Direct Deliveries (36% of Direct Deliveries)	13,179	13,460	13,593	13,861	13,629
Sub-Total SWP Water	76,179	76,460	76,593	76,861	76,629
Recycled Water					
City of Redlands, City of San Bernardino, East Valley Water District, Yucaipa Valley Water District	21,951	29,260	36,320	43,280	50,340
Total All Supplies	**327,444**	**335,034**	**342,227**	**349,455**	**356,283**

Notes:

(a) The San Bernardino Basin is managed whereby total safe yield is a combination of Surface Water and Groundwater totaling 239,743 AFY. Per the Western Judgment, supply available to the Valley District service area is 172,745 AFY. A decrease in available surface water in any given year does not change available yield from the basin.

(b) Assumes SWP Water is stored in wet years so that it can supplement lower deliveries of SWP water in dry years.

(c) The Watermaster estimates a 36% return from the direct deliveries of SWP in the SBBA.

(d) Does not include SWP water from San Gorgonio Pass Water Agency.

(e) Estimates of Direct Deliveries and Recycled Water from Chapters 7 through 15 of this RUWMP.

2.9 Water Use Efficiency

Water conservation programming for each of the retail water agencies can be found in their specific chapter.

Valley District has also supported the retail agencies in its service area with the following regional water conservation programs:

1. iEfficient.com: provides information and guides water customers to their specific rebates,
2. Weather Based Irrigation Controllers Program
3. Water Saving Garden Friendly: promotes low water use plants including plant sales at Home Depot stores and other stores and nurseries
4. water conservation demonstration garden and California State University San Bernardino
5. Inland Empire Landscape Contest: promotes water efficient landscapes by offering prizes for attractive installations
6. Turf removal programs
7. Inland Solar Challenge: high school students write a report about water conservation

These programs were coordinated and supported by Valley District to help retailers with their conservation objectives and are further discussed in Chapter 6.

3 Regional Water Use

This chapter describes anticipated water demands in the Valley District service area for imported water, groundwater, and surface water. Specific water use by sector and demands for each of the retail water agencies participating in the RUWMP are detailed in the chapter for that agency.

3.1 Imported Water Recharge to Maintain Sustainability of Local Groundwater Supplies

As detailed in Section 2.2.1, groundwater sustainability in the SBBA is maintained by comparing cumulative extractions to cumulative safe yield. Whenever the cumulative extractions exceed the cumulative safe yield, recharge is required. In the SBBA, the amount of recharge is offset by any "return flow" from sources outside of the safe yield calculation, namely, the amount of imported water and the amount of water extracted above the safe yield. To simplify the analysis in this report, it will not account for cumulative extractions and recharge. Instead, whenever the total extractions exceed the estimated safe yield, recharge of a like amount will be required. The offsets for return flow used in the SBBA will also be used for the other basins as shown in the below tables.

Table 3-1. Estimate of Imported Water Need in the SBBA (AF)

	2020	2025	2030	2035	2040
Potential Extractions					
City of Colton	6,783	6,994	7,408	7,991	7,991
East Valley Water District	28,312	32,150	36,042	39,992	39,992
City of Loma Linda	6,418	6,814	7,236	7,683	7,683
City of Redlands	55,496	55,564	55,632	55,696	55,696
City of Rialto	5,620	5,620	5,620	5,620	5,620
City of San Bernardino	52,671	54,730	56,866	59,082	59,082
West Valley Water District	15,000	19,500	22,500	25,000	25,000
Valley District	7,500	7,500	7,500	7,500	7,500
Fontana Water Company	15,100	15,100	15,100	15,100	15,100
Marygold Mutual Water Company	1,500	1,500	1,500	1,500	1,500
Muscoy Mutual Water Company	2,100	2,100	2,100	2,100	2,100
Terrace Water Company	900	900	900	900	900
Other/Private	19,600	19,300	19,000	19,000	19,000
Total Estimated Demands by Non-Plaintiffs	**217,000**	**227,772**	**237,404**	**247,164**	**247,164**
Adjusted Safe Yield with New Conservation	172,745	172,745	172,745	172,745	172,745
Over-extraction (Extractions above Safe Yield)	44,255	55,027	64,659	74,419	74,419
Return flow from over-extraction (36% of extractions above the safe yield).	15,932	19,810	23,277	26,791	26,791
Direct Deliveries of Imported Water	28,047	28,828	29,198	29,942	29,298
Return flow credits for imported water deliveries (36% of direct deliveries)	10,097	10,378	10,511	10,779	10,547
Estimated Need for Imported Water (Over-extraction minus return flow credits)	**18,226**	**24,839**	**30,870**	**36,849**	**37,081**

Notes:

(a) Data from Chapters 7 through 15 for retail agencies in this UWMP

(b) Data from 2015 IRWMP for Fontana Water Company, Marygold Mutual WC, Muscoy Mutual WC, Terrace WC, Other/Private.

(c) The Watermaster estimates a 36% return from the direct deliveries of SWP in the SBBA.

(d) Potential need equal to over-extraction less the return flow from extractions above the safe yield and return flow credits for imported water deliveries.

Table 3-2. Estimate of Imported Water Need in the Rialto-Colton Basin (AF)

	2020	2025	2030	2035	2040
Potential Pumping					
City of Colton	4,375	4,511	4,778	5,154	5,154
City of Rialto	1,456	1,456	1,456	1,456	1,456
West Valley Water District	6,000	6,000	6,000	6,000	6,000
Fontana Water Company	7,600	7,600	7,600	7,600	7,600
RPU	2,728	2,728	2,728	2,728	2,728
Other/Private	2,100	2,100	2,100	2,100	2,100
Total Estimated Demands	**24,259**	**24,395**	**24,662**	**25,038**	**25,038**
Estimated Safe Yield from Chapter 2	10,242	10,242	10,242	10,242	10,242
Over-extraction (Extractions above Safe Yield)	14,017	14,153	14,420	14,796	14,796
Return flow from over-extraction (36% of extractions above the safe yield).	5,046	5,095	5,191	5,327	5,327
Estimated Need for Imported Water (Over-extraction minus return flow credits)	**8,971**	**9,058**	**9,229**	**9,470**	**9,470**

Notes:
(a) Data from Chapters 7 through 15 for retail agencies in this UWMP
(b) Data from 2015 IRWMP for Fontana Water Company, RPU, Other/Private.
(c) The Watermaster estimates a 36% return from extractions over the safe yield.
(d) Potential need equal to over-extraction less the return flow from extractions above the safe yield and return flow credits for imported water deliveries.

Table 3-3. Estimate of Imported Water Need in the Riverside North Basin (AF)

	2020	2025	2030	2035	2040
Potential Pumping					
City of Colton	1,450	1,495	1,584	1,708	1,708
City of Rialto	1,000	1,000	1,000	1,000	1,000
West Valley Water District	2,500	3,500	4,000	4,500	4,500
Riverside Highland WC	4,000	4,000	4,000	4,000	4,000
San Bernardino RIX Overextraction	7,900	7,900	7,900	7,900	7,900
RPU	12,902	12,902	12,902	12,902	12,902
Other/Private	6,000	6,000	6,000	6,000	6,000
Total Estimated Demands	**35,752**	**36,797**	**37,386**	**38,010**	**38,010**
Estimated Safe Yield from 2015 IRWMP	30,100	30,100	30,100	30,100	30,100
Over-extraction (Extractions above Safe Yield)	5,652	6,697	7,286	7,910	7,910
Return flow from over-extraction (36% of extractions above the safe yield).	2,035	2,411	2,623	2,848	2,848
Estimated Need for Imported Water (Over-extraction minus return flow credits)	**3,617**	**4,286**	**4,663**	**5,062**	**5,062**

Notes:
(a) Data from Chapters 7 through 15 for retail agencies in this UWMP
(b) Data from 2015 IRWMP for RPU, Other/Private.
(c) The Watermaster estimates a 36% return from extractions over the safe yield.
(d) Potential need equal to over-extraction less the return flow from extractions above the safe yield and return flow credits for imported water deliveries.

3.2 Demands for Imported Water

In addition to recharge operations undertaken by Valley District, imported water is also used to make direct deliveries to several retail water producers and used in-lieu of releases from Big Bear Lake.

3.2.1 Demands for Direct Deliveries

Delivering water directly to water treatment plants is the most efficient way to utilize imported water because there are less losses when compared to groundwater recharge. Several retail water producers have water treatment plants to treat imported water. The City of San Bernardino uses the ground as a filter (Sweetwater Turnout on Valley District's Foothill Pipeline), recharging imported water and then immediately extracting it downstream using wells. The following agencies have indicated that they anticipate taking direct delivery of imported water: East Valley Water District, the City of Redlands, City of San Bernardino, West Valley Water District, Yucaipa Valley Water District, Fontana Water Company, and Crestline-Lake Arrowhead Water Company.

3.2.2 Other Needs for Imported Water

Bear Valley Mutual Water Company (Bear Valley Mutual) constructed the original Bear Valley Dam in 1884 to create Big Bear Lake as a storage reservoir for their customers, downstream farmers. In 1964, the residents of Big Bear Lake formed the Big Bear Municipal Water District (Big Bear Municipal) in an effort to eliminate Lake releases to Bear Valley Mutual so that the lake level would remain high for recreational use and tourism. After more than a decade of litigation, a Judgment was executed in 1977 which reduced the amount of Lake releases to Bear Valley Mutual. Under the terms of this Judgment, Big Bear Municipal purchased from Bear Valley Mutual the lake bottom, Bear Valley Dam, and the right to utilize and manage the surface of Big Bear Lake for recreation and wildlife. In return, deliveries to Bear Valley Mutual were capped at a total of 65,000 AF in any ten-year period. These deliveries can be made in the form of Lake releases or can be provided from other sources "in-lieu" of Lake releases (in-lieu deliveries). In-lieu deliveries to Bear Valley Mutual are preferable to Big Bear Municipal since they do not result in water being removed from the lake.

In 1996, Big Bear Municipal entered into a water purchase agreement with Valley District. For an annual payment to Valley District, this agreement provides that when the Lake is at specified levels, no water will be released from the Lake to meet the downstream water needs. Instead, Valley District provides Bear Valley Mutual with in-lieu water from the SWP or any other available sources authorized under the Judgment. This historic agreement helped Big Bear Municipal achieve its mission of Lake stabilization while providing Bear Valley Mutual with the water it needs for its customers. Under the terms of the Agreement, Bear Valley Mutual may request any amount of delivery for a given year, provided that the total of all their requested deliveries do not exceed 65,000 AF in any ten-year period. Bear Valley Mutual's typical request each year has been the ten-year average, or 6,500 AFY.

The Judgment directed the in-lieu water program be monitored through a series of accounts that are managed by the Big Bear Watermaster Committee. The three-member committee consists of one representative from each of the three member agencies: Big Bear Municipal Water District, Bear Valley Mutual Water Company and San Bernardino Valley Water Conservation District. This is a committee whose sole responsibility is to monitor the "physical solution" set forth in the Judgment. The basic premise behind the physical solution is the comparison of Big Bear Municipal's actual Lake management versus Bear Valley Mutual's historic management. Big Bear Municipal is then responsible for making up

any net groundwater deficiency in the San Bernardino basin which may occur as a result of maintaining a higher Lake level than would have occurred under Bear Valley Mutual's historic operations. The amount of the deficiency or surplus is maintained in the basin make-up water account (commonly referred to as "basin compensation account"). A number of other accounting mechanisms are in place to calculate totals for Lake releases, inflow, spills, evaporation, wastewater export and other related data. An annual Watermaster report is prepared documenting the annual accounting procedures.

3.2.3 Storage of Imported Water

One of the primary water management strategies in the San Bernardino Valley is to store imported water when it is available so that it can be used during drought periods. The amount of SWP water that is planned to be stored for later pumping is shown in Table 3-4.

3.2.4 Total Anticipated Demands on Imported Water

Table 3-4 summarizes potential total demands for imported water during the period of this Plan. Yucaipa Valley Water District, in addition to receiving imported water from Valley District, can also receive imported water from San Gorgonio Pass Water Agency (SGPWA). YVWD's estimated demand for imported water from SGPWA is shown in Table 3-4. Additional discussion of these demands is included in Chapter 12.

Table 3-4. Estimated Total Demands for Imported Water through 2040 (AF)

	2020	2025	2030	2035	2040
Retail Agencies Receiving SWP Water					
East Valley Water District	8,960	8,960	8,960	8,960	8,960
City of Redlands	1,500	2,000	2,500	3,000	3,000
West Valley Water District	7,000	7,000	7,000	7,000	7,000
Yucaipa Valley Water District	10,587	10,868	10,738	10,982	10,338
Crestline Lake Arrowhead Water Company	60	60	60	60	60
Fontana Water Company	2,000	2,000	2,000	2,000	2,000
Total Direct Deliveries(a)	**30,107**	**30,888**	**31,258**	**32,002**	**31,358**
Big Bear Municipal Water District/Big Bear Lake	6,500	6,500	6,500	6,500	6,500
Total Demands	36,607	37,388	37,758	38,502	37,858
Estimated Need for Recharge in SBBA	18,226	24,839	30,870	36,849	37,081
Estimated Need for Recharge in Rialto-Colton	8,971	9,058	9,229	9,470	9,470
Estimated Need for Recharge in Riverside North	3,617	4,286	4,663	5,062	5,062
Total Demand Applied to Imported Water	**67,422**	**75,571**	**82,520**	**89,883**	**89,471**
YVWD Purchase from SGPWA	4,313	5,007	5,758	6,735	6,051
Total Demand Applied to Imported Water (including SGPWA)	**71,735**	**80,578**	**88,278**	**96,618**	**95,522**

Notes:
(a) Demands for imported water for East Valley Water District, City of Redlands, West Valley Water District, and Yucaipa Valley Water District provided as part of this RUWMP. Demands for Crestline Lake Arrowhead Water Company and Fontana Water Company estimated from 2015 IRWMP.

The projected uses for imported water in 2020 are shown in Figure 3-1.

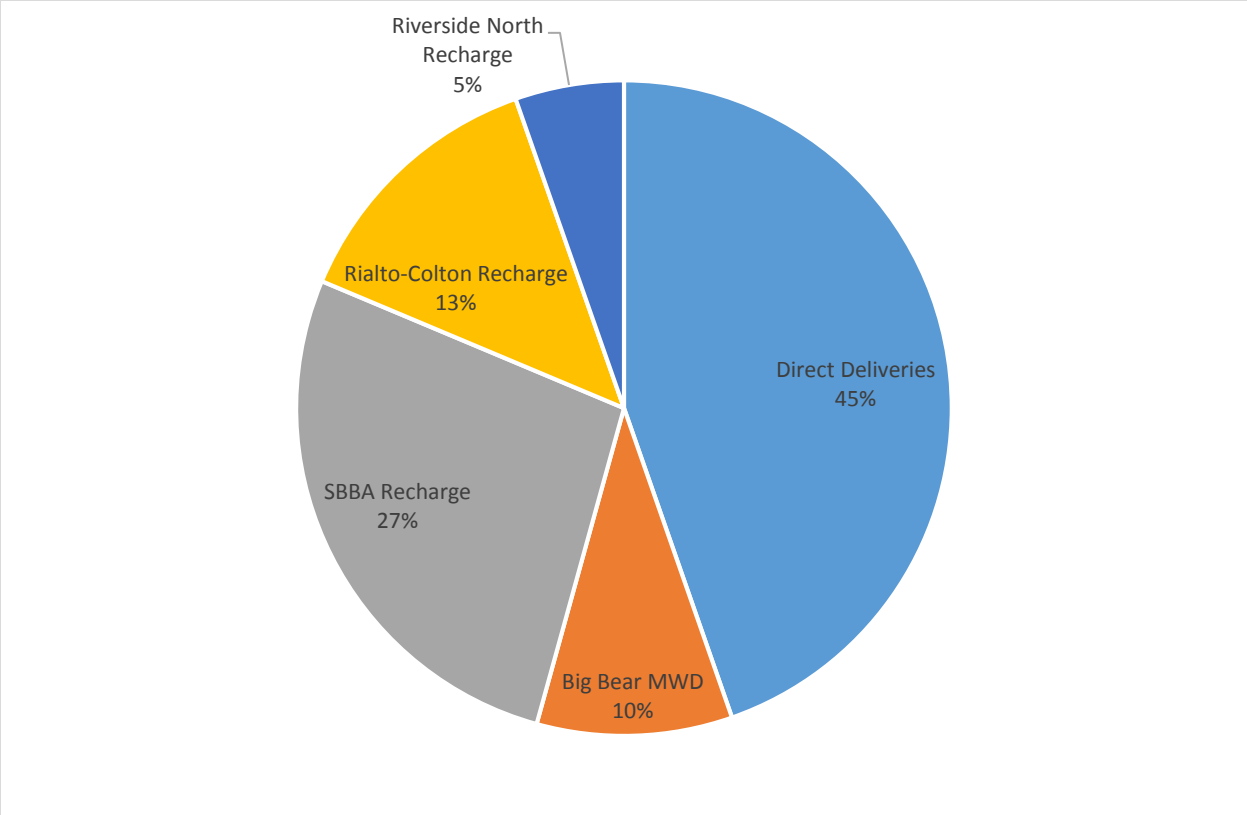


Figure 3-1. Projected Uses for Imported Water in 2020

3.3 Demands for Recycled Water

In addition to regional water sources (SBBA water and other local surface and groundwater, imported water), some water agencies have plans to use recycled water. Table 3-5 summarizes the anticipated future demand for recycled water.

Table 3-5. Estimated Demands for Recycled Water 2020 to 2040 (AF)

Agency	2020	2025	2030	2035	2040
City of Redlands	5,152	5,402	5,402	5,402	5,402
City of Rialto	20	20	20	20	20
City of San Bernardino	5,600	7,800	10,300	12,800	12,800
East Valley Water District	6,700	6,700	6,700	6,700	6,700
Yucaipa Valley Water District	1,651	2,177	2,792	3,490	4,282
Total Recycled Water	**19,123**	**22,099**	**25,214**	**28,412**	**29,204**
Notes: Further details about recycled water use are included in each agency's individual chapter.					

3.4 Water Losses

In accordance with DWR requirements, the individual retail agencies have quantified their water losses, using the American Water Works Association (AWWA) Water Audit process, and their total nonrevenue water, using the difference between production and sales. Water lost through leaks represents a loss of revenue for the retail agencies and increases the amount of groundwater or surface water that must be produced. Because the region relies so heavily on groundwater, this water is not permanently lost; it eventually contributes to recharge of the local groundwater basin. Each individual agency's chapter discusses nonrevenue water and estimated losses.

3.5 Total Demands by Agency

Table 3-6 presents an estimate of total demands for agencies within Valley District.

Table 3-6. Total Demand by Agency 2020 to 2040 (AF)

	2020	2025	2030	2035	2040
City of Colton	10,458	11,301	11,978	12,698	13,462
East Valley Water District	31,609	32,879	33,943	35,050	36,203
City of Loma Linda	5,200	5,527	5,875	6,245	6,638
City of Rialto	10,583	11,216	11,887	12,597	13,350
City of Redlands	33,138	34,164	34,940	35,715	35,715
Riverside Highland Water Company	4,107	4,294	4,492	4,702	4,923
City of San Bernardino	45,969	49,094	53,339	57,623	59,449
West Valley Water District	20,799	22,256	23,802	25,492	27,311
Yucaipa Valley Water District	12,891	13,751	14,730	15,815	17,009
Subtotal of Agencies Participating in RUWMP	**174,754**	**184,482**	**194,987**	**205,937**	**214,061**
Fontana Water Company	44,613	45,700	45,700	45,700	45,700
Marygold Mutual Water Company	1,500	1,500	1,500	1,500	1,500
Muscoy Mutual Water Company	2,100	2,100	2,100	2,100	2,100
Terrace Water Company	900	900	900	900	900
Crestline Lake Arrowhead Water Company	60	60	60	60	60
Big Bear Municipal Water District	6,500	6,500	6,500	6,500	6,500
Other/Private	19,600	19,300	19,000	19,000	19,000
Subtotal of Agencies Not Participating in RUWMP	75,273	76,060	75,760	75,760	75,760
Total	**250,027**	**260,542**	**270,747**	**281,697**	**289,821**
10% reliability Margin	25,003	26,054	27,075	28,170	28,982
Total Including Reliability Margin	**275,030**	**286,596**	**297,821**	**309,867**	**318,803**

Notes:
(a) Demands for participating agencies from Chapters 7 through 15 of this UWMP.
(b) Demands for non-participating agencies estimated from 2015 IRWMP.

These demands are shown graphically in Figure 3-2.

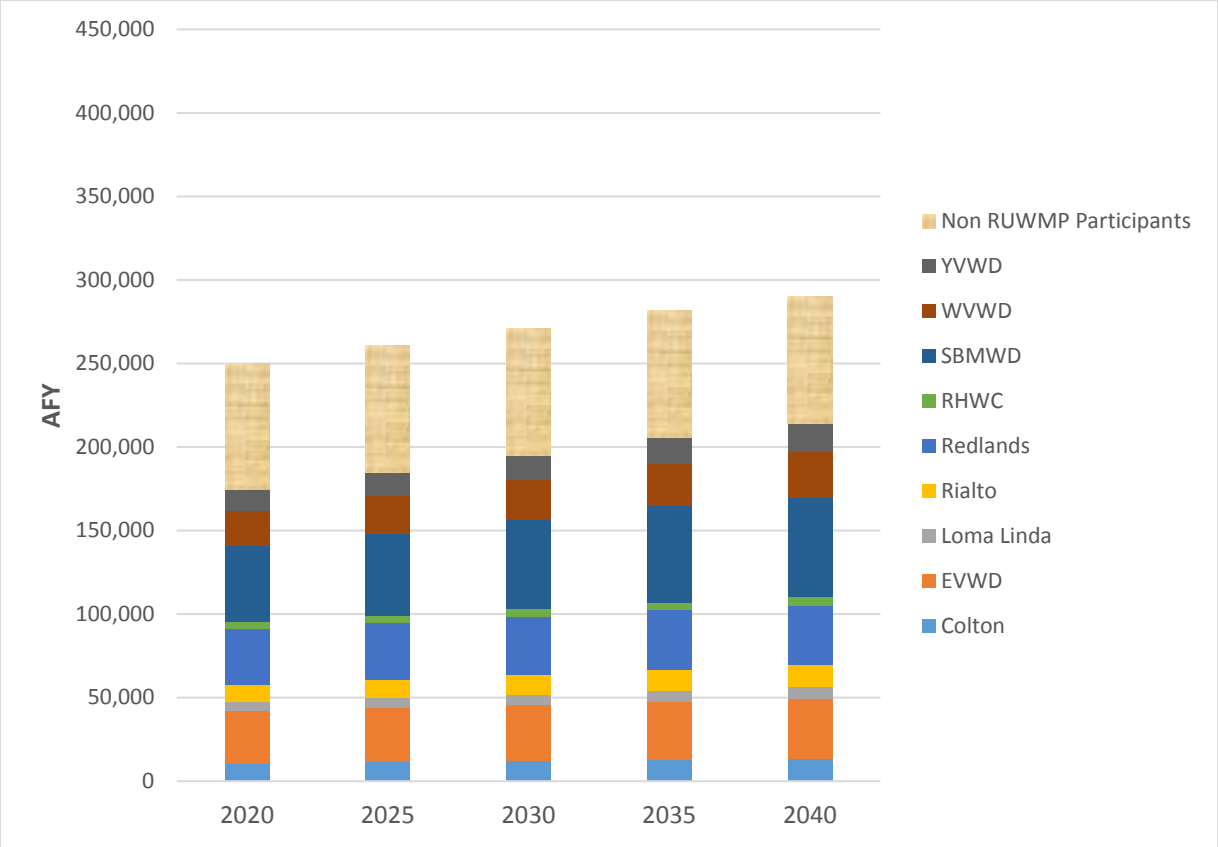


Figure 3-2. Total Normal Year Demands by Agency

Two major factors that affect water usage are weather and water conservation. Historically, when the weather is hot and dry, water usage increases. The increases vary according to the number of consecutive years of hot, dry weather and the conservation activities imposed. During cool-wet years, historical water usage has decreased to reflect less water usage for external landscaping. Past studies have indicated that demands increase 6 to 12 percent during dry periods. For this analysis it is estimated that demands will increase 10 percent during dry periods, unless otherwise stated in the individual agency chapters.

In recent years, water conservation has become an increasingly important factor in water supply planning in California. Since 2005, there have been a number of regulatory changes related to conservation including new standards for plumbing fixtures, a new landscape ordinance, a state universal retrofit ordinance, metering and billing requirements, new Green Building standards, demand reduction goals and more. SB X7-7 requires a 20-percent reduction in urban per capita water use in California by December 31, 2020 ("20 by 2020"). The bill requires each urban retail water supplier to determine their "base daily per capita water use," develop an urban water use target for year 2020, and set a 2015 interim urban water use target. For the 2015 UWMP cycle, DWR established updated requirements for the use of census data in estimating historic service area populations. Therefore, retail agencies have re-calculated their baseline water use and their targets for the 2015 RUWMP. The individual retail agency chapters (Chapters 7 through 15) provide information on compliance with SB X7-7 for the retail agencies participating in this plan.

4 Comparison of Regional Supplies and Demands

The UWMP Act requires urban water suppliers to assess water supply reliability by comparing total projected water use with the projected water supply over the next twenty years or beyond in 5 year increments. The UWMP Act also requires an assessment for a single-dry year and multiple-dry year period. In addition, the Plan participants have elected to assess a wet year scenario to help support the goal of maximizing the use and storage of wet year supplies for later use during dry periods.

Chapter 2 provided information about regional water supplies during a normal year, while Chapter 3 provided information on total demands. This section compares available supplies for regional water supplies to demands for these sources. A discussion of the supplies and demands by retail agency are described in Chapters 7 through 15.

4.1 Normal / Average Water Year

Table 4-1 provides a comparison of regional water supplies and demands for a normal year. Table 4-1 demonstrates that adequate regional supplies are anticipated for years 2020 to 2040 under normal/average conditions.

Table 4-1. Normal Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	337,769	345,359	352,552	359,780	366,608
Demand Totals	250,027	260,542	270,747	281,697	289,821
Difference (Supply minus Demand)	87,741	84,817	81,805	78,082	76,787

The supplies and demands are shown in Figure 4-1.

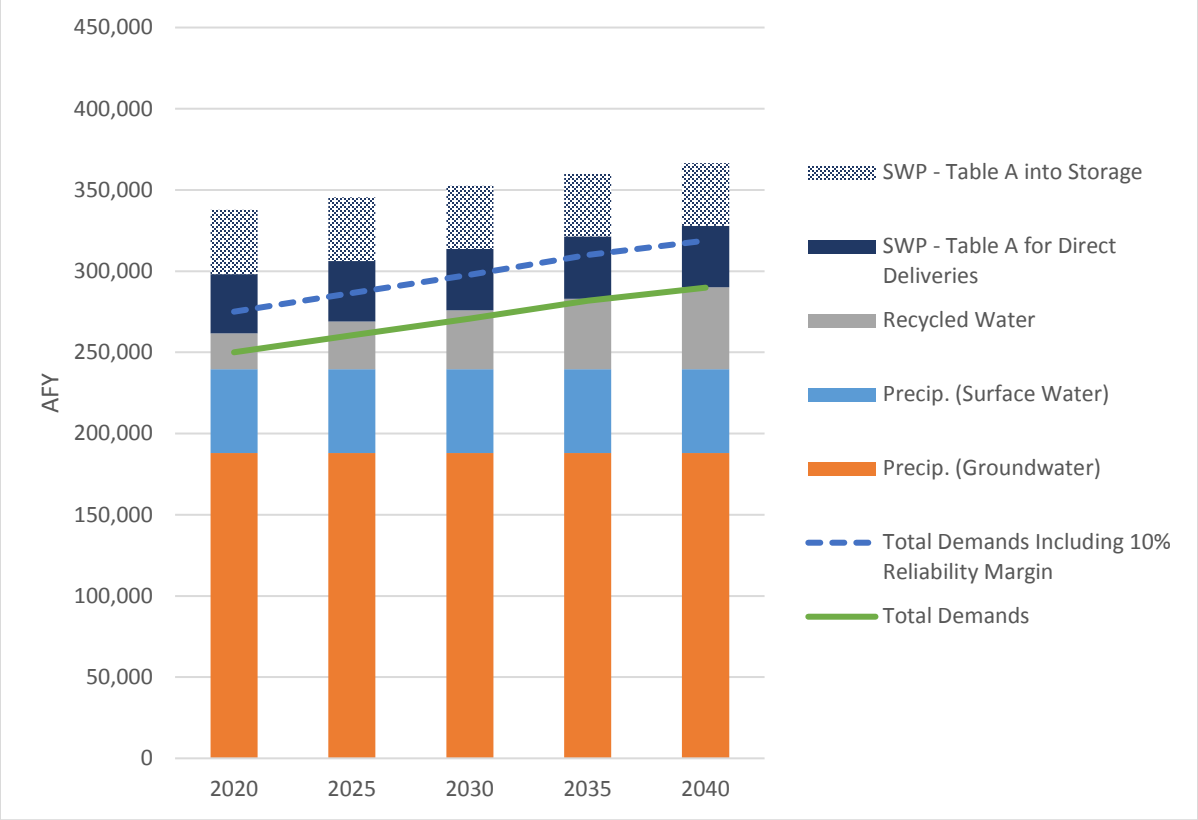


Figure 4-1. Estimated Regional Normal Year Supplies and Demands

4.2 Single Wet Year

Table 4-2 provides a comparison of supplies and demands for a single wet year. This demonstrates that a supply surplus is anticipated in wet years, which presents an opportunity to store this excess supply. This information will help water resource managers in the San Bernardino Valley as they continue to develop strategies and projects to maximize the use of wet year supplies to improve water supply reliability in dry years.

Table 4-2. Wet Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	385,319	392,909	400,102	407,330	414,158
Demand Totals	233,841	243,469	252,721	262,685	270,115
Difference (Supply minus Demand)	151,478	149,440	147,381	144,645	144,042

The supplies and demands are shown in Figure 4-2.

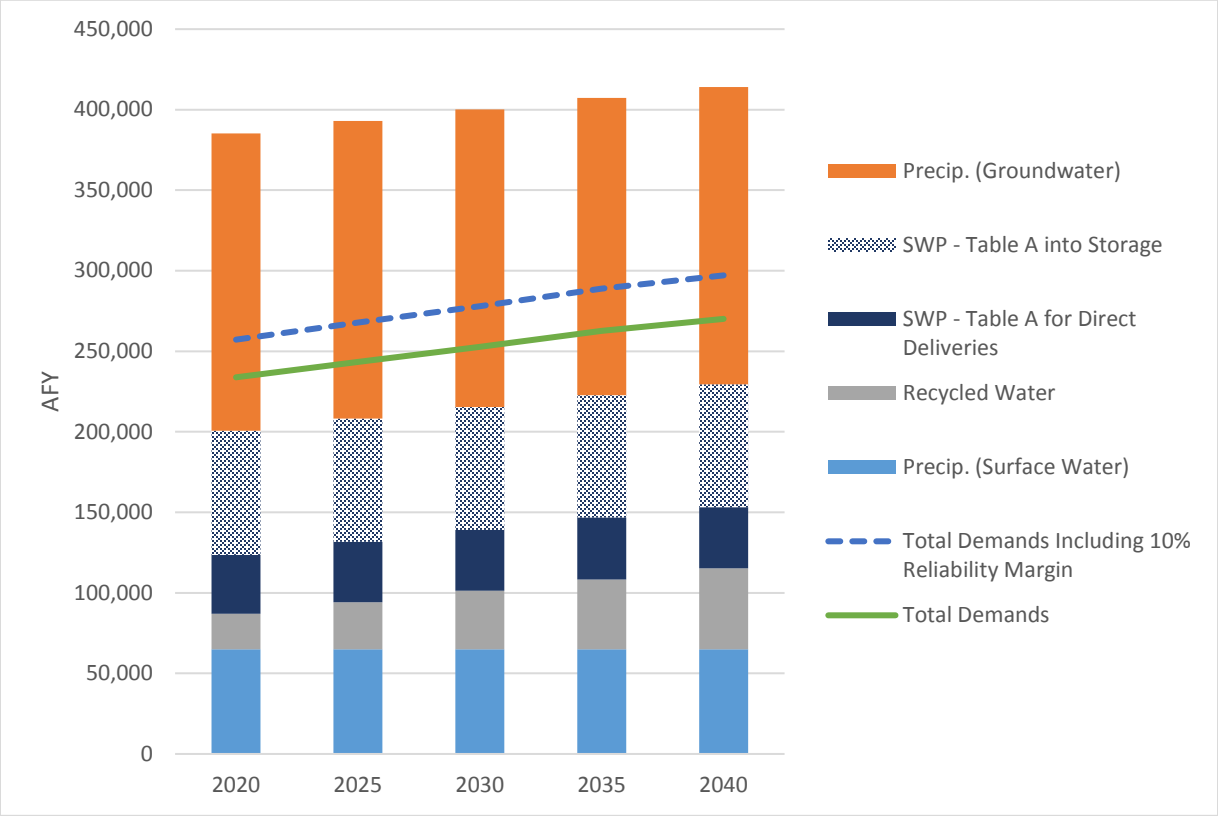


Figure 4-2. Estimated Regional Wet Year Supplies and Demands

4.3 Single Dry Year

Table 4-3 provides a comparison of regional water supplies and demands for a single dry year. The single-dry year is generally the lowest annual runoff for a water source in the record. Table 4-3 anticipates adequate regional water supplies for years 2020 to 2040 under single-dry year conditions.

Table 4-3. Single Dry Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	327,444	335,034	342,227	349,455	356,283
Demand Totals	254,785	265,677	276,613	288,321	296,915
Difference (Supply minus Demand)	72,658	69,357	65,614	61,133	59,368

The supplies and demands are shown in Figure 4-3.

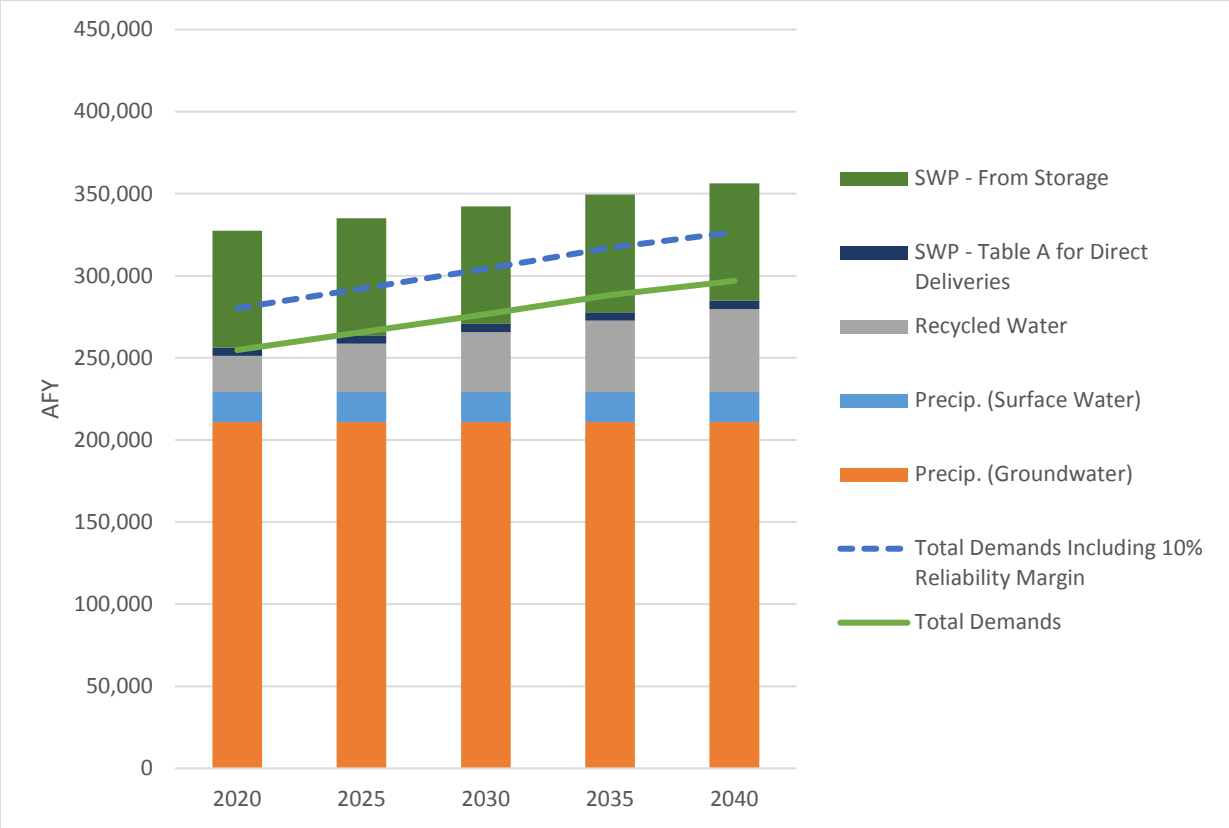


Figure 4-3. Estimated Regional Single Dry Year Supplies and Demands

4.4 Multiple Dry Years

Table 4-4 provides a comparison of regional water supplies and demands for a multiple-dry year period. The multiple-dry year period is generally the lowest annual runoff for a three year or more consecutive period. Table 4-4 anticipates adequate regional supplies for years 2020 to 2040 under multiple-dry year conditions.

Table 4-4. Multiple Dry Years Supply and Demand Comparison (AF)

Year	Totals	2020	2025	2030	2035	2040
First Year	Supply Totals	327,444	335,034	342,227	349,455	356,283
	Demand Totals	251,247	262,042	272,882	284,495	293,105
	Difference (Supply minus Demand)	76,196	72,992	69,345	64,960	63,178
Second Year	Supply Totals	327,444	335,034	342,227	349,455	356,283
	Demand Totals	247,360	257,774	268,112	279,205	287,450
	Difference (Supply minus Demand)	80,083	77,260	74,115	70,250	68,833
Third Year	Supply Totals	327,444	335,034	342,227	349,455	356,283
	Demand Totals	241,881	251,870	261,662	272,191	280,072
	Difference (Supply minus Demand)	85,562	83,163	80,564	77,264	76,211

5 Regional Water Shortage Contingency Planning

5.1 Overview

Water supplies may be interrupted or reduced significantly through drought, natural disaster such as earthquake, a regional power outage, or a toxic spill that prevents delivery due to poor water quality. This chapter describes regional planning for such emergencies. Specific water shortage contingency planning for each agency is discussed in Chapters 7 through 15.

5.2 Coordinated Planning

As part of the IRWMP (San Bernardino Valley Municipal Water District, January 2015), agencies in the region developed a water shortage contingency plan. The water shortage contingency plan provides a framework for implementing specific measures to deal with water shortages during emergencies. The plan provides specific actions that should be taken to ensure critical water needs of the region are met during a period in which water supplies are cut by 50 percent.

Furthermore, nearly all of the retailers in the San Bernardino Valley participate in the Emergency Response Network of the Inland Empire (ERNIE). ERNIE is a water/wastewater mutual aid network within San Bernardino and Riverside counties. ERNIE meets monthly and provides regular training for utilities in emergency response and long-term emergency planning.

The 2015 IRWMP included an assessment entitled Vulnerability to Catastrophic Interruption of Water Supply and Disaster Preparedness, which is included in Appendix N of this plan.

5.3 Actions to Prepare for Catastrophic Interruption

This section addresses vulnerability of the region's water supply system to catastrophic events that may interrupt the water deliveries in the Region. Given the presence of the San Andreas Fault, San Jacinto Fault and many other faults, a large magnitude earthquake is generally considered the most likely and "worst case" natural disaster for the region. The other possible catastrophic interruptions such as regional power failure, terrorist attack, or other man-made or natural catastrophic event would cause similar conditions but would likely not be as severe. For purposes of this report, a major earthquake is defined as an earthquake on the San Andreas Fault (SAF) on the order of 8.0.

The San Bernardino Valley is a seismically active area of Southern California. Four major fault zones are found in the region, including the San Jacinto Fault, the Chino-Corona segment of the Elsinore Fault, the Cucamonga Fault, and the SAF. Numerous other minor faults associated with these larger fault structures may also present substantial hazards. The SAF is a right-lateral strike-slip fault that runs approximately 800 miles through western and southern California. The fault marks a transform boundary between the Pacific Tectonic Plate and the North American Tectonic Plate. In Southern California, the SAF runs along the southern base of the San Bernardino Mountains, crosses through Cajon Pass, and continues northwest along the northern base of the San Gabriel Mountains. Historical records indicate that massive earthquakes have occurred in the central section of the SAF in 1857 and in the northern section in 1906 (the San Francisco Earthquake). In 1857, an estimated magnitude 8+ earthquake occurred on the San Andreas Fault rupturing the ground for 200 to 275 miles, from near Cholame to Cajon Pass and possibly as far south as San Gorgonio Pass. The recurrence interval for a

magnitude 8 earthquake along the total length of the fault is estimated to be between 50 and 200 years. It has been over 150 years since the 1857 rupture.

5.3.1 Facility Reliability

The following sections summarize the findings of the Vulnerability to Catastrophic Interruption of Water Supply and Disaster Preparedness prepared for the IRWMP. These findings have been developed from a search of literature reporting the impacts of major earthquakes and limited work by water purveyors.

5.3.1.1 Reliability of Groundwater Wells

Review of post-earthquake lifeline performance reports reveals little discussion of groundwater well failure. However, loss of commercial power, damage to electrical equipment and above ground appurtenances, or damage to the distribution system may effectively put wells out of service. Liquefaction, especially in areas where there are high groundwater levels between depths of 5 to 50 feet, may cause ground settlement and interfere with continued well operation. No discussion of the performance of wellhead treatment systems during earthquakes was found. This may be due to the limited amount of well head treatment in place during prior earthquakes. As wellhead treatment typically includes purchased equipment installed in a field location, there is significant opportunity for lapses in the seismic design. The groundwater basin and the groundwater production wells are a reliable part of the water supply system for the San Bernardino area.

5.3.1.2 Reliability of Pipelines

Pipelines are generally the most fragile part of a water system. Generally, damage is a function of displacement rather than shaking. Empirical algorithms have been developed to predict seismic reliability of pipelines.

5.3.1.3 Reliability of Pump Stations

Past earthquakes indicate that the structural and mechanical elements of a pump station are highly resistant to earthquake damage. The most likely failures are to the electrical equipment and loss of commercial power. Most pump stations are either equipped with an automatic transfer switch to enable connection to a permanent standby generator or have an electrical outlet for connection to a mobile generator.

5.3.1.4 Reliability of Surface Water Treatment Facilities

The major elements of a surface water treatment system are typically concrete structures that are very resistant to damage. However, these facilities include a large variety of mechanical equipment, much of it long and lightweight and subject to damage not only from the direct force of an earthquake, but also from the wave action created by the earthquake. Similar to a pump station, power supply and electrical equipment are fragile. However, treatment facilities also are constructed with provisions for standby power, either permanent or temporary.

5.3.1.5 Reliability of the State Water Project

While little specific information was found on anticipated damage to the SWP, the high susceptibility of the Santa Ana Valley Pipeline (California Aqueduct) is recognized. A major vulnerability of the SWP is the Sacramento-San Joaquin Delta. The SWP does have a Business Resumption Plan and an Emergency Operations Plan.

5.3.1.6 Length of Outages

Length of water service outages vary by earthquake and by purveyor. The Loma Prieta earthquake affected a large number of separate systems. The San Jose Water Company serves most of San Jose and all of Los Gatos. Los Gatos was hard hit and half of the water customers lost water service. In San Francisco, the worst hit area was the Marina District. Both fires and liquefaction affected the district. East Bay Municipal Water District serves 1.1 million customers and suffered $3.7 million in damage. Damage included a break in a 60-inch raw water line. After the Northridge earthquake, the Los Angeles Aqueducts Nos. 1 and 2 were in and out of service for temporary and permanent repairs over several months; these facilities were not critical at that time. Alternate supplies were available and drought conditions limited supply to these aqueducts.

Valley District's Emergency Operations Plan includes estimates for repair of Valley District facilities. Electrical and pipe repairs are estimated to take 35 to 77 days. Pump repairs are estimated to take 168 to 273 days. In summary, the Region should prepare for up to a four-month outage.

5.3.2 Existing Strategies

Valley District and the purveyors recognize that water availability through the SWP is intermittent. As a result, Valley District's "Rules for Service" require that all of its customers have a 100 percent backup for any amount of water they order from the SWP.

The primary regional contingency strategy is groundwater storage. During an outage of the statewide system, agencies would rely primarily on local groundwater supplies. One of the primary management strategies in the IRWMP is to store water in wet years so that it is available in dry years. However, any additional stored water would also be available during a water shortage.

A second strategy for addressing water supply during an emergency is system redundancy and interconnections between purveyors. Table 5-1 lists the interties between purveyors in the San Bernardino Valley.

Finally, Valley District has identified alternative conveyance facilities which could be used in the event of a failure of one of Valley District's pipelines. For example, Valley District has an agreement with Metropolitan Water District of Southern California which could allow the use of the Inland Feeder Pipeline to bypass a large portion of the District's primary delivery pipeline, the Foothill Pipeline.

Table 5-1. System Interties between Retail Agencies

Agencies	Direction	Capacity (MGD)
City of San Bernardino/East Valley Water District	Either	4
City of San Bernardino/City of Riverside	To San Bernardino	2
City of San Bernardino/West Valley Water District	Either	3
City of San Bernardino/Loma Linda	To Loma Linda	5
City of San Bernardino/Colton	To Colton	3
City of San Bernardino/Rialto	Either	3.6
City of San Bernardino/Riverside Highland Water Company	To Riverside Highland Water Company	3
Fontana/Cucamonga Valley	Either	3.6
West Valley Water District/Fontana	Either	
West Valley Water District/Rialto	Either	
West Valley Water District/Colton	To Colton	
City of Redlands/City of Loma Linda	To Loma Linda	1
Source: 2015 IRWMP		

All of the retail agencies that are included in this RUWMP are also members of the BTAC. The BTAC works together on an annual basis to review water supplies and evaluate how to prioritize and distribute any shortage of SWP supplies. During a shortage, it is anticipated that the first priority for any SWP water would be direct deliveries.

5.3.3 Strategies to Improve Regional Preparedness

Based on the recommendations in the 2015 IRWMP, the following strategies were identified to enhance regional disaster preparedness.

- Valley District is planning to implement seismic improvements for high priority facilities, including the Foothill Pipeline, Santa Ana River Connector, Morton Canyon Connector, and Greenspot pipeline.
- Projects are proposed that could provide production and conveyance system redundancies for regional facilities. These include:
    - The BHCUP, which could provide backup well production capacity needed for retail water agencies when SWP supplies have been severed.
    - The Central Feeder/EBX2 Intertie, which provides an additional connection between Valley District's system and DWR's system, and could be used to bypass a portion of Valley District's conveyance system in the event of failure.
- Consider the opportunities that Big Bear Lake presents as an emergency source of water after an earthquake that interrupts SWP deliveries for many weeks.
- A catastrophic earthquake may cause loss of electricity for an indeterminate amount of time. In order to ensure water supplies in the immediate aftermath and weeks following a major earthquake, it is critical to have back-up generators or internal combustion engines for important production wells throughout the Region.
- Valley District is also developing a storage program to help meet direct delivery demands during a shortage on the SWP. The current storage program includes the DWR Carryover Storage Program, the Yuba Accord and the DWR Dry Year Water Transfer Program. Valley District is also evaluating "upstream" groundwater banks located along the California Aqueduct.

5.3.4 General Response Strategies

The San Andreas Fault, which traverses the length of the southern San Joaquin Valley, could impact the State Water Project. The California Division of Mines and Geology has stated that two of the aqueduct systems that import water to southern California (including the California Aqueduct) could be ruptured by displacement on the San Andreas Fault. The situation would be further complicated by physical damage to pumping equipment and local loss of electrical power.

DWR has an Aqueduct Outage Plan for restoring the California Aqueduct to service should a major break occur, which it estimates would take approximately four months to repair. Limitations on supplies of groundwater and/or imported water for an extended period, due to power outages and/or equipment damage, could result in severe water shortages until the supplies could be restored.

The public would be asked to reduce consumption to minimum health and safety levels, extending the supply in treated water storage a number of days. This would provide sufficient time to restore a significant amount of groundwater production. After the groundwater supply is restored, the pumping capacity of the retail purveyors could meet the reduced demand until such time that the imported water supply was reestablished. Updates on the water situation would be made as often as necessary.

Valley District's water sources are generally of good quality, and no insurmountable problems resulting from industrial or agricultural contamination are foreseen. If contamination did result from a toxic spill or similar accident, the contamination would be isolated and should not significantly impact the total water supply. In addition, such an event would be covered by the purveyors Emergency Response Plan.

5.3.5 SWP Emergency Outage Scenarios

In addition to earthquakes, the SWP could experience other emergency outage scenarios. Past examples include slippage of aqueduct side panels into the California Aqueduct near Patterson in the mid-1990s, the Arroyo Pasajero flood event in 1995 (which also destroyed part of Interstate 5 near Los Banos) and various subsidence repairs needed along the East Branch of the Aqueduct since the 1980s. All these outages were short-term in nature (on the order of weeks), and DWR's Operations and Maintenance Division worked diligently to devise methods to keep the Aqueduct in operation while repairs were made. Thus, the SWP contractors experienced no interruption in deliveries.

One of the SWP's important design engineering features is the ability to isolate parts of the system. The Aqueduct is divided into "pools." Thus, if one reservoir or portion of the California Aqueduct is damaged in some way, other portions of the system can still remain in operation.

Other events could result in significant outages and potential interruption of service. Examples of possible nature-caused events include a levee breach in the Delta near the Harvey O. Banks Pumping Plant, a flood or earthquake event that severely damages the Aqueduct along its San Joaquin Valley traverse, or an earthquake event along either the West or East Branches. Such events could impact some or all SWP contractors south of the Delta.

The response of DWR, Valley District and other SWP contractors to such events would be highly dependent on the type and location of any such events. In typical SWP operations, water flowing through the Delta is diverted at the SWP's main pumping facility, located in the southern Delta, and is pumped into the California Aqueduct. During the relatively heavier runoff period in the winter and early spring, Delta diversions generally exceed SWP contractor demands and the excess is stored in San Luis

Reservoir. Storage in SWP aqueduct terminal reservoirs, such as Pyramid and Castaic Lakes, is also refilled during this period. During the summer and fall, when diversions from the Delta are generally more limited and less than contractor demands, releases from San Luis Reservoir are used to make up the difference in deliveries to contractors. The SWP share of maximum storage capacity at San Luis Reservoir is 1,062,000 AF.

In addition to SWP storage south of the Delta in San Luis and the terminal reservoirs, a number of contractors have stored water in groundwater banking programs in the San Joaquin Valley, and many also have surface and groundwater storage within their own service areas. Two scenarios that could impact the delivery of SWP supply, previously banked supplies or other supplies delivered to it through the California Aqueduct are described below. For each of these scenarios, it was assumed that an outage of six months could occur. Valley District's ability to meet demands during the worst of these scenarios is presented following the scenario descriptions.

5.3.5.1 Scenario 1: Levee Breach New Banks Pumping Plant

As demonstrated by the June 2004 Jones Tract levee breach and previous levee breaks, the Delta's levee system is fragile. The SWP's main pumping facility, Banks Pumping Plant, is located in the southern Delta. Should a major levee in the Delta near these facilities fail catastrophically, salt water from the eastern portions of San Francisco Bay would flow into the Delta, displacing the fresh water runoff that supplies the SWP. All pumping from the Delta would be disrupted until water quality conditions stabilized and returned to pre-breach conditions. The re-freshening of Delta water quality would require large amounts of additional Delta inflows, which might not be immediately available, depending on the time of year of the levee breach. The Jones Tract repairs took several weeks to accomplish and months to complete; a more severe breach could take much longer, during which time pumping from the Delta might not be available on a regular basis.

Assuming that the Banks Pumping Plant would be out of service for six months, DWR could continue making at least some SWP deliveries to all southern California contractors from water stored in San Luis Reservoir. The water available for such deliveries would be dependent on the storage in San Luis Reservoir at the time the outage occurred and could be minimal if it occurred in the late summer or early fall when San Luis Reservoir storage is typically low. Valley District water stored in groundwater banking programs in the San Joaquin Valley may also be available for withdrawal and delivery to Valley District.

5.3.5.2 Scenario 2: Complete Disruption of the California Aqueduct in the San Joaquin Valley

The 1995 flood event at Arroyo Pasajero demonstrated vulnerabilities of the California Aqueduct (the portion that traverses the San Joaquin Valley from San Luis Reservoir to Edmonston Pumping Plant). Should a similar flood event or an earthquake damage this portion of the aqueduct, deliveries from San Luis Reservoir could be interrupted for a period of time.

In any of these SWP emergency outage scenarios, DWR and the SWP contractors would coordinate operations to minimize supply disruptions. Depending on the particular outage scenario or outage location, some or all of the SWP contractors south of the Delta might be affected. But even among those contractors, potential impacts would differ given each contractor's specific mix of other supplies and available storage. During past SWP outages, the SWP contractors have worked cooperatively to minimize supply impacts among all contractors. Past examples of such cooperation have included certain SWP contractors agreeing to rely more heavily on alternate supplies, allowing more of the outage-limited SWP supply to be delivered to other contractors, and exchanges among SWP contractors,

allowing delivery of one contractor's SWP or other water to another contractor, with that water being returned after the outage was over.

5.3.6 Emergency Freshwater Pathway Description (Sacramento-San Joaquin Delta)

DWR has estimated that in the event of a major earthquake in or near the Delta, regular water supply deliveries from the SWP could be interrupted for up to three years, posing a substantial risk to the California business economy. Accordingly, a post-event strategy has been developed which would provide necessary water supply protections. The plan has been coordinated through DWR, the Army Corps of Engineers (Corps), Bureau of Reclamation, California Office of Emergency Services (Cal OES), the Metropolitan Water District of Southern California, and the State Water Contractors. Full implementation of the plan would enable resumption of at least partial deliveries from the SWP in less than six months.

5.3.7 DWR Delta Flood Emergency Management Plan

DWR has developed the Delta Flood Emergency Management Plan to provide strategies for a response to Delta levee failures, which addresses a range of failures up to and including earthquake-induced multiple island failures during dry conditions when the volume of flooded islands and salt water intrusion are large. Under such severe conditions, the plan includes a strategy to establish an emergency freshwater pathway from the central Delta along Middle River and Victoria Canal to the export pumps in the south Delta. The plan includes the pre-positioning of emergency construction materials at existing and new stockpiles and warehouse sites in the Delta, and development of tactical modeling tools (DWR Emergency Response Tool) to predict levee repair logistics, water quality conditions, and timelines of levee repair and suitable water quality to restore exports. The Delta Flood Emergency Management Plan has been extensively coordinated with state, federal and local emergency response agencies. DWR, in conjunction with local agencies, the Corps and Cal OES, regularly conduct simulated and field exercises to test and revise the plan under real time conditions.

DWR and the Corps provide vital Delta region response to flood and earthquake emergencies, complementary to an overall Cal OES structure. Cal OES is preparing its Northern California Catastrophic Flood Response Plan that incorporates the DWR Delta Flood Emergency Management Plan. These agencies utilize a unified command structure and response and recovery framework. DWR and the Corps, through a Draft Delta Emergency Operations Integration Plan (April 2015), would integrate personnel and resources during emergency operations.

5.3.8 Levee Improvements and Prioritization

The DWR Delta Levees Subvention Program has prioritized, funded, and implemented levee improvements along the emergency freshwater pathway and other water supply corridors in the central and south Delta region. These efforts have been complementary to the DWR Delta Flood Emergency Management Plan, which along with use of pre-positioned emergency flood fight materials in the Delta, relies on pathway and other levees providing reasonable seismic performance to facilitate restoration of the freshwater pathway after a severe earthquake. Together, these two DWR programs have been successful in implementing a coordinated strategy of emergency preparedness for the benefit of SWP and CVP export systems.

Significant improvements to the central and south Delta levee systems along Old and Middle Rivers began in 2010 and are continuing to the present time at Holland Island, Bacon Island, Upper and Lower Jones Tracts, Palm Tract and Orwood Tract. This complements substantially improved levees at

Mandeville and McDonald Islands and portions of Victoria and Union Islands. Together, levee improvements along the pathway and Old River levees consisting of crest raising, crest widening, landside slope fill and toe berms, meet the needs of local reclamation districts and substantially improve seismic stability to reduce levee slumping and create a more robust flood-fighting platform. Many urban water supply agencies have participated or are currently participating in levee improvement projects along the Old and Middle River corridors.

6 San Bernardino Valley Municipal Water District

6.1 Description of Agency

Valley District was formed in 1954, under the Municipal Water District Act of 1911 (California Water Code Section 71000 et seq.) as a regional agency to plan a long-range water supply for the San Bernardino Valley. It imports water into its service area through participation in the SWP and manages groundwater storage within its boundaries. Its enabling act includes a broad range of powers to provide water, wastewater and stormwater disposal, recreation, and fire protection services. Valley District is a wholesale water agency and does not deliver water directly to retail water customers.

Valley District covers about 325 square miles mainly in southwestern San Bernardino County, about 60 miles east of Los Angeles. It spans the eastern two-thirds of the San Bernardino Valley including the Crafton Hills and a portion of the Yucaipa Valley. The following cities and communities are within its boundary: Bloomington, Colton, East Highland, Fontana, Grand Terrace, Highland, Loma Linda, Mentone, Redlands, Rialto, San Bernardino, and Yucaipa.

Valley District is responsible for long-range water supply management, including importing supplemental water, and is responsible for managing the San Bernardino Basin Area, Rialto-Colton Basin Area, and Riverside Basin Area per the Western Judgment. It also has responsibility for maintaining flows in the Santa Ana River (SAR) at the Riverside Narrows per the Orange County Judgment. It fulfills its responsibility in the SAR using treated wastewater and fulfills its responsibilities for managing local groundwater basins and by working with the BTAC each year on an annual management plan. For more information, see Chapter 2.

Valley District cooperates in a program to help replenish groundwater basins, using both SWP water and local runoff. It takes delivery of SWP water at the Devil Canyon Power Plant Afterbay, which is located just within the northwestern corner of its boundary. Water can then be conveyed east or west to various treatment plants and spreading grounds. A map illustrating Valley District's service area is shown in Figure 6-1.

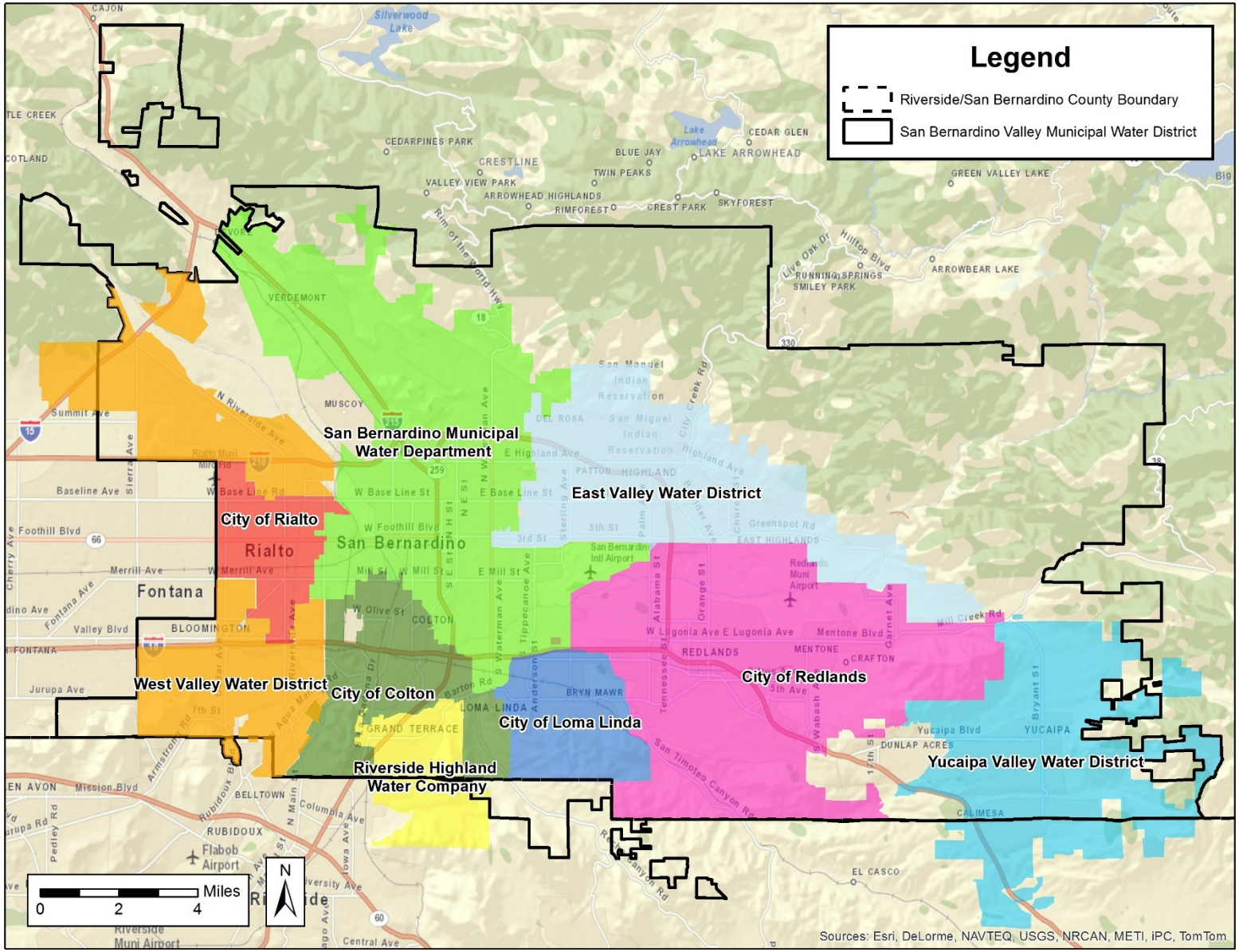


Figure 6-1. Valley District Service Area

The DWR Population Tool was used to intersect the Valley District service area with historic census population data. The estimated 2010 population within the Valley District service area is approximately 662,000. Valley District has prepared an estimate of future population for 2020 to 2040, based on an intersection of Valley District's service area with projections developed by the Southern California Association of Governments (SCAG) in their 2012 Integrated Growth Forecast. The growth rates projected by SCAG were used to estimate future population within Valley District's service area. Population projections are shown in Table 6-1.

Table 6-1. Service Area Population - Current and Projected

	2015	2020	2025	2030	2035	2040
Valley District	690,758	721,223	757,015	794,584	834,017	875,407

6.2 Climate

The climate within Valley District's service area is characterized by warm, dry summers and mild winters with moderate amounts of rainfall. Most of the precipitation occurs during the months of December through March. Table 6-2 presents average climate data for the service area, including temperature, rainfall and reference evapotranspiration (ETo).

Table 6-2. Historical Climate Data

Month	Average Temperature (°F)[1]	Average Precipitation (in.)[1]	Average Standard ETo (in.)[2]
January	52.4	3.22	2.53
February	54.6	3.25	2.87
March	56.7	2.86	4.30
April	60.9	1.29	5.38
May	65.6	0.47	5.82
June	71.3	0.09	6.76
July	77.7	0.04	7.38
August	77.7	0.15	7.09
September	73.9	0.33	5.51
October	66.5	0.71	3.97
November	58.6	1.32	2.89
December	53.3	2.38	2.38
Total		**16.1**	**56.9**

Notes:
[1]NOAA weather station 0407723 in San Bernardino; data from 1893 through 2004; http://wrcc.dri.edu;
[2]CIMIS weather station 44 at University of California, Riverside; http://wwwcimis.water.ca.gov/

6.3 Supply

As discussed in Chapter 2, Valley District is a State Water Contractor and imports SWP Water into the study area. Valley District also operates groundwater wells that pump from the SBBA. Historical pumping data from the past five (5) years is shown in Table 6-3.

Table 6-3. DWR Table 4-1W. Historical Groundwater Pumping Data (AF)

Groundwater Type	Location or Basin Name	Water Quality	2011	2012	2013	2014	2015
Alluvial Basin	SBBA	Drinking Water	618	3,790	7,485	8,178	6,874
	Total		618	3,790	7,485	8,178	6,874

6.3.1 Future Water Supply Projects

Valley District is an active partner in regional plans for future water supply projects. These projects are discussed in detail in Section 2.6. These projects include the regional use of recycled water, conjunctive use projects, groundwater recharge, and stormwater capture. Valley District is also taking the lead on the Upper Santa Ana River Watershed Habitat Conservation Plan which will result in permits for the construction of many of the mentioned water supply projects.

6.3.2 Transfers and Exchanges

Valley District evaluates potential transfers and exchanges as a way to make best use of available supplies. In some years Valley District has sold some of its surplus State Water Project water to other State Water Contractors.

6.4 Demand Management Measures

In recent years, water conservation has become an increasingly important factor in water supply planning in California. Demand Management Measures (DMMs) are programs and activities through which a water supplier can communicate with their customers and encourage, regulate or incentivize water conservation.

As part of the IRWMP and UWMP process, agencies in the San Bernardino Valley area have formed a group to study and address conservation needs in the San Bernardino Valley. The first step in this process was identifying the costs and benefits of various demand management measures. Special attention was given to those demand management measures that are not cost effective for an individual agency, but which could be cost effective if implemented on as part of a regional collaboration. The second step in the process was to identify the water conservation target, which was done as part of the 2010 UWMP. At the conclusion of Steps 1 and 2, the agencies participating in this UWMP met to coordinate regional implementation of selected conservation actions. The group engaged a Regional Conservation Coordinator. In addition to the programs listed above, the Regional Conservation Coordinator leads public outreach programs and school education programs. The UWMP agencies, along with the Regional Conservation Coordinator, evaluate existing agency resources available to assist with conservation programs and then select conservation programs and processes to be implemented at the regional level. The UWMP agencies utilize the Regional Conservation Coordinator to track conservation actions, conservation successes, and estimate water savings. Valley District has played the primary role in coordinating the IRWMP and UWMP processes and is coordinating the ongoing work of the agencies to implement additional conservation.

The following is a description of Valley District's status in implementing the requirements of the revised California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU). For the

2015 UWMP cycle, DWR made changes to the reporting requirements for DMMs. This discussion is organized to follow the format recommended in the DWR Guidebook for Urban Water Suppliers (Guidebook).

6.4.1 Metering

All of Valley District's connections are metered. Valley District monitors these meters and repairs or replaces them as necessary.

6.4.2 Public education and outreach

Public education and outreach efforts include marketing of rebates and giveaways, communicating water use via water bills, providing school education programs, information booths at fairs and public events, newsletters, informative websites, online tools, social media, or newspaper articles.

Valley District provided $500,000 for a demonstration garden at California State University San Bernardino and is spending $11,000 on maintenance of the garden in 2016. In addition, Valley District is also funding public education classes in the garden during Fiscal Year (FY) 15-16 at a rate of about two per month and is preparing eye-catching posters that will be displayed in the garden. Valley District has also provided almost $400,000 toward the launch of a new, regional public outreach campaign, iEfficient.com. The District also has conservation-related information on its website.

Valley District funds a consultant to provide school education programs to retail agencies in its service area. Currently, the program has focused on the agencies that have most of Valley District's population: West Valley Water District, East Valley Water District, the City of Redlands, and the City of San Bernardino.

In FY 12-13, Valley District began offering courses to adults, in addition to the courses offered to schools. Table 6-4 provides a summary of the outreach that was performed between 2007 and 2015.

Table 6-4. Water Conservation Education Programs Completed by Valley District

Year	School Programs	Adult Programs
2007	2	0
2008	24	0
2009	39	0
2010	55	0
2011	60	0
2012	83	0
2013	100	2
2014	70	80
2015	120	130
Total	553	212

In addition to this educational programming, Valley District has sponsored the Inland Solar Challenge since 2008. This event requires students to build a solar powered boat and to prepare and present a report on a water use efficiency topic.

6.4.3 Water conservation program coordination and staffing support

A part-time coordinator has been assigned to manage water conservation efforts. The position is filled by the Manager of Water Resources. In addition, Valley District utilizes consultants to manage water conservation activities. Valley Soil assists with the Weather Based Irrigation Controller Program (WBIC), the Inland Empire Resource Conservation District provides public education programs, and CV Strategies coordinates the public outreach program, iEfficient.

6.4.4 Other demand management measures

Valley District is not a retail agency but does support water waste prohibition and water conservation. The District is actively involved in supporting its retailers through a variety of programs including: school education programs to four of its retail agencies (WVWD, EVWD, Redlands, and San Bernardino); allocating funding (over $430,000) towards WBIC incentives; and as the primary contributor ($500,000) to the proposed San Bernardino Valley Water Conservation Demonstration Garden at California State University, San Bernardino.

In addition, Valley District started and has taken a leadership role in developing the iEfficient and Inland Empire Garden Friendly Programs. These programs seek to save water by helping consumers implement "climate appropriate" plants and the installation of drip irrigation systems. This program has corporate sponsors, the largest of which is Home Depot.

6.4.5 Asset management

Valley District is a wholesale water agency with no retail customers, and its system consists of steel pipe that is welded internally and externally. Properly welded joints do not leak. Therefore, the only likely place the pipeline could leak is at delivery points. These points are inspected on a monthly basis and are dry.

6.4.6 Wholesale supplier assistance programs

Valley District is actively involved in supporting its retailers through a variety of programs mentioned above.

Valley District, because it is a wholesale agency, is not directly implementing water survey programs for single-family residential and multi-family residential customers, residential plumbing retrofits, metering with commodity rates, large landscape conservation programs, high efficiency washing machine rebate programs, or CII programs. Rather, Valley District supports the retail agencies with their conservation programs by providing 25% of what they pay to their customers.

In addition, Valley District has also provided up to $200,000 in FY 15-16 for residential turf removal and about $828,000 for turf removal at larger, institutional sites, totaling over $1 million in turf removal. Valley District continues to offer a WBIC program for large water users. Under this program, Valley District pays 50 percent of the costs and the customer pays the other 50 percent of the cost making this a "free" program to the water retailers. Some of the water retailers have chosen to increase the incentive to the customer by splitting the customer portion of the cost with them.

6.5 Water Shortage Contingency Plan

Water supplies may be interrupted or reduced significantly in a number of ways, such as drought which limits supplies, a fire or earthquake which damage delivery or storage facilities, chemical spill, or a

regional power outage. Section 5 of this UWMP describes water shortage contingency planning for regional water supply sources.

6.5.1 Revenue and Expenditure Impacts of a Water Shortage

Valley District receives funding from property taxes to fund its financial obligations for the State Water Project. For this reason, Valley District's annual budget is not heavily dependent on revenue from water sales. Valley District also maintains financial reserves that could be used to help maintain services during a time of reduced water sales. Valley District can also delay capital expenditures if necessary during times of water shortage.

6.6 Supply and Demand Comparisons

The UWMP Act requires urban water suppliers assess water supply reliability by comparing total projected water use with the expected water supply over the next 20 years in 5-year increments. The UWMP Act also requires an assessment of single-dry year and multiple-dry years. These comparisons for the Valley District are presented in Chapter 4 of this UWMP.

6.7 Adoption

Valley District, on behalf of the retail agencies, sent letters to cities and counties, as well as other water agencies, notifying them of RUWMP preparation and soliciting input to the Plan. Notification letters were sent in February and March 2016. Each agency published hearing notices consistent with UWMP Act requirements. Hearings were conducted by each agency regarding the selection of water use targets, the implementation plan for complying with SB X7-7, and the potential economic impacts of complying with SB X7-7.

Valley District held a public hearing to present the draft RUWMP. Valley District provided notice of the public hearing to the cities and counties to which it provides water. These agencies are identified in Appendix C.

Legal public notices for the public hearing were published in the local newspapers and posted at Valley District offices and on the Valley District website. The notice that was published in advance of the public hearing is included in Appendix C.

Copies of the draft RUWMP were available at the Valley District office located at 380 E Vanderbilt Way, San Bernardino CA 92408 or as a PDF on the Valley District website prior to the public hearing.

The draft Final RUWMP was presented to the Board at a public hearing on June 21, 2016.

The draft Final RUWMP was presented to the Board for adoption on June 21, 2016.

A copy of the resolution adopting the RUWMP is included in Appendix D.

The final report will be available on Valley District's web site at www.sbvmwd.com\reports.

7 East Valley Water District

7.1 System Description

East Valley Water District (EVWD) is a California Special District, established in 1954, that provides water and wastewater services. EVWD encompasses 30.1 square miles along the foothills of the San Bernardino Mountains within the cities of San Bernardino and Highland, and the county of San Bernardino. As an agency tasked with managing a critical resource, EVWD is committed to innovative leadership and world class public service.

Figure 7-1 shows the EVWD service area.

The DWR Population Tool was used to intersect the service area boundary in Figure 7-1 with census data to provide population estimates for 1990, 2000, and 2010. Population for intermediate non-census years was estimated using a constant growth rate, as connection data was not available for all the intermediate years. The service area population for 2015 was then estimated using the number of connections in 2010 and 2015.

EVWD competed a 2014 Water Master Plan that included a detailed projection of expected future growth related to proposed developments. These projections from the 2014 Water Master Plan were used to estimate future populations in the service area.

The estimated service area populations are shown in Table 7-1.

Table 7-1. DWR Table 3-1R. Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040
Population Served	104,457	124,062	130,391	135,690	141,205	146,945

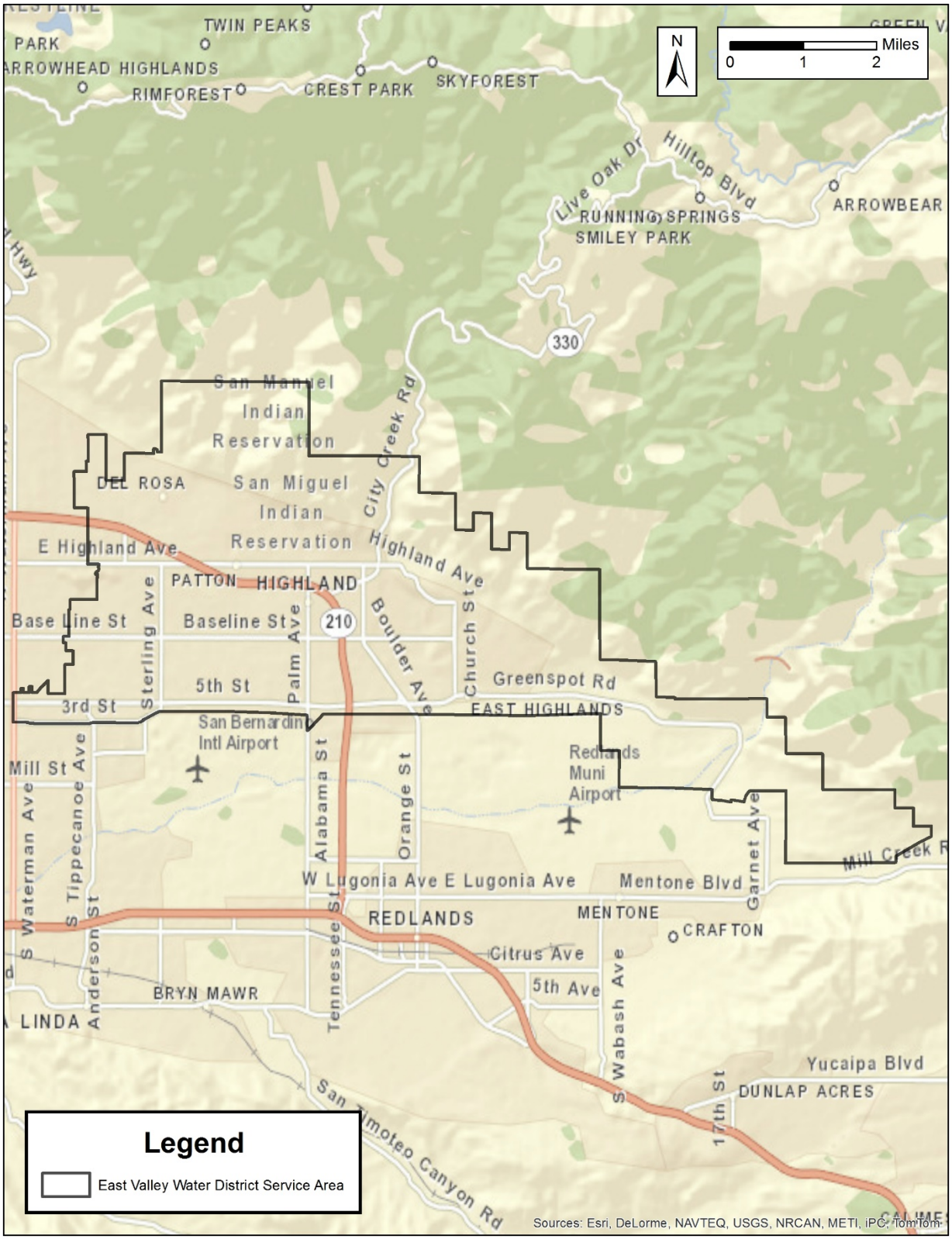


Figure 7-1. East Valley Water District Service Area

7.1.1 Service Area Climate

EVWD is located on the eastern side of the San Bernardino Valley and within the South Coast Hydrologic Region. The climate typically exhibits hot, dry summers and mild, wet winters. Climate is a primary factor that influences water demand within the EVWD service area. Most rainfall occurs during the months of November through April. The hottest and driest period of the year is from June through September. It is not unusual during the summer months to have several consecutive days that the daily temperature exceeds 100 degrees Fahrenheit.

Average temperature, precipitation, and evapotranspiration by month are shown in Table 7-2. Evapotranspiration (ET) is the water lost to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indicator of how much water crops, lawn, garden, and trees need for healthy growth and productivity. ET from a standardized grass surface is commonly denoted as ETo.

Table 7-2. Historical Climate Data

Month	Average Temperature (°F)[1]	Average Precipitation (in.)[1]	Average Standard ETo (in.)[2]
January	52.4	3.22	2.53
February	54.6	3.25	2.87
March	56.7	2.86	4.30
April	60.9	1.29	5.38
May	65.6	0.47	5.82
June	71.3	0.09	6.76
July	77.7	0.04	7.38
August	77.7	0.15	7.09
September	73.9	0.33	5.51
October	66.5	0.71	3.97
November	58.6	1.32	2.89
December	53.3	2.38	2.38
Total		**16.1**	**56.9**

Notes:
[1]NOAA weather station 0407723 in San Bernardino; data from 1893 through 2004; http://wrcc.dri.edu;
[2]CIMIS weather station 44 at University of California, Riverside; data from 1986 – 2015; http://wwwcimis.water.ca.gov/

7.2 System Water Use

7.2.1 Water Uses by Sector

EVWD categorizes its water use customers as follows: single family residential, multi-family residential, commercial, irrigation commercial, fire service, bulk water and schools. The few light industrial and governmental/institutional users are included within the commercial category. EVWD's Irrigation/Landscape customers represent approximately one and a half percent of the current metered services and eight (8) percent of the consumptive water use. These customers include parks, large commercial, and community and institutional landscape areas. The land use development trend within the EVWD's service area has historically been from agriculture to residential. In 2000, 86 percent of

accounts were residential, growing to 92 percent in 2015. A continuing increase in residential customers is expected. While there are agricultural uses in the EVWD service area, these users do not receive water from EVWD. Actual water deliveries from 2011 through 2015 are provided in Table 7-3.

Fire service connections account for services such as:

- Hydrant Testing and Flushing - Hydrant testing is performed by EVWD. EVWD performs a comprehensive testing program to monitor the level of fire flows available throughout the service area.
- Fire Hydrant Operations by the Fire Department - This represents the use of water for emergencies.

In the past, EVWD has not had water use related to saline barriers, groundwater recharge operations, or recycled water. However, EVWD, like many water agencies, does have some nonrevenue water. Nonrevenue water is the difference between the amount of water produced and the amount of water billed to customers. Over the last four years, nonrevenue water has been approximately 10 percent of water sold within EVWD's system.

Sources of nonrevenue water include:

- Customer Meter Inaccuracies - Customer meters represent one of the main sources of nonrevenue water as they tend to under-represent actual consumption in the water system. EVWD has a replacement program to replace aging meters and a systematic program to replace meters on a 10-year basis.
- Water used for flushing and fire hydrant operations
- Unauthorized uses or theft of water
- Leaks from water lines - Leakage from water pipes is a common occurrence in water systems. A significant number of leaks remain undetected over long periods of time as they are very small; however, these small leaks contribute to the overall nonrevenue water.
- Reservoir overflows - This represents unrecorded water use when reservoirs overflow.

The historic and estimated future demands are shown in Table 7-3 and Table 7-4 in acre feet (AF). The future demands have been estimated by adjusting the 2015 demands for two factors. To account for population growth, the demands were assumed to increase at the same rate as the estimated service area population. To account for potential changes in consumption after the mandatory drought restrictions are phased out, the per-capita consumption was assumed to rebound to the 2020 compliance target.

Table 7-3. DWR Table 4-1R. Demands for Potable Water – Actual (AF)

Use Type	Level of Treatment When Delivered	2011	2012	2013	2014	2015
Single Family	Drinking Water	11,302	11,696	12,012	11,702	9,434
Multi-Family	Drinking Water	0	0	0	0	2,589
Commercial	Drinking Water	5,272	5,462	5,443	5,123	2,181
Irrigation Commercial	Drinking Water	1,756	2,261	1,969	1,978	1,537
Fire Service	Drinking Water	0	0	0	94	0
Other	Drinking Water	237	143	162	109	45
Nonrevenue	Drinking Water	3,835	2,226	2,737	1,132	1,380
	Total	22,401	21,788	22,322	20,138	17,165

Table 7-4. DWR Table 4-2R. Demands for Raw and Potable Water – Projected (AF)

Use Type	Additional Description	2020	2025	2030	2035	2040
Single Family		13,533	14,223	14,801	15,403	16,029
Multi-Family		3,713	3,903	4,061	4,227	4,398
Commercial		3,129	3,289	3,423	3,562	3,706
Irrigation Commercial		2,204	2,317	2,411	2,509	2,611
Other		64	68	70	73	76
Nonrevenue		2,264	2,380	2,477	2,577	2,682
	Total	24,909	26,179	27,243	28,350	29,503

EVWD's total demands including expected recycled water use are shown in Table 7-5. Recycled water is discussed further in Section 7.6.

Table 7-5. DWR Table 4-3R. Total Water Demands (AF)

Demand	2015	2020	2025	2030	2035	2040
Potable and Raw Water	17,165	24,909	26,179	27,243	28,350	29,503
Recycled Water Demand	0	6,700	6,700	6,700	6,700	6,700
Total Water Demand	17,165	31,609	32,879	33,943	35,050	36,203

7.2.2 Distribution System Water Losses

EVWD has an active water loss control program and has performed a water loss audit using the AWWA Manual 36. The audit results are summarized in Table 7-6.

Table 7-6. DWR Table 4-4R. Water Loss Summary Most Recent 12 Month Period Available

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss (AF)
01/2015	377

In the near term EVWD will focus on refining its information and identifying categories of real losses. In addition, EVWD will continue its leak detection and water main replacement program. The AWWA water audit methodology will be performed annually and losses carefully monitored.

7.2.3 Estimating Future Water Savings

EVWD is committed to long-range planning to provide a reliable, cost-effective water supply to its customers. EVWD actively monitors water consumption in its service area, in part to prepare required monthly reports for the State Water Resources Control Board.

For this report, EVWD has projected that future demands will increase at a percentage growth rate that incorporates two factors: the percentage growth in service area population, and potential changes in the per-capita consumption. This approach provides estimates for future system-wide demand that can be used for long-range planning.

In the 2015 UWMP, water suppliers have the option of preparing more detailed demand forecasts by estimating demand factors based on land use categories. For example, EVWD could identify typical water use per single family customer and per commercial account. These customer classes can be further sub-divided by lot size, neighborhood, or other variables. The intent is to quantify the estimated water use per customer in different customer classes, and then to forecast how future changes will impact water use within each customer class.

For this document, EVWD has elected not to develop land use-based demand factors and apply future savings from codes and standards. Recent drought regulations have induced significant changes in water consumption patterns, and there is considerable uncertainty as to how demands will change in the future if the drought subsides. Given this uncertainty, EVWD has elected not to quantify passive savings for this UWMP.

7.2.4 Water Use for Lower Income Households

Senate Bill 1087 requires that water use projections of an UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier.

The EVWD contains three jurisdictions, the City of Highland, the City of San Bernardino, and unincorporated County of San Bernardino. EVWD reviewed the most recent General Plan for each of these entities to determine the percentage of households that are lower income (less than 80 percent of the median household income). EVWD estimated a weighted average of 45 percent of households in the service area are lower income. In the absence of more detailed information, EVWD estimated that this percentage applies to its single-family residential and multi-family residential water use across the service area. The estimated water use for lower-income households is shown in Table 7-7. These demands are included in the projections presented throughout this report.

Table 7-7. Estimated Demands for Lower-Income Households (AF)

Demand	2015	2020	2025	2030	2035	2040
Single Family Residential	4,245	6,090	6,400	6,661	6,931	7,213
Multi-Family Residential	1,165	1,671	1,756	1,828	1,902	1,979
Total	5,410	7,761	8,157	8,488	8,833	9,192

EVWD will not deny or put unreasonable conditions for water services, or reduce the amount of services applied for by a proposed development that includes housing units affordable to lower income households unless one of the following occurs:

- EVWD specifically finds that it does not have sufficient water supply
- EVWD is subject to a compliance order issued by the State that prohibits new water connections
- the applicant has failed to agree to reasonable terms and conditions relating to the provision of services

The conditions above apply to all applicants and developers.

7.3 SB X7-7 Baselines and Targets

An urban retail water supplier must set a 2020 water use target (herein called the Compliance Water Use Target) and a 2015 interim target (herein called the Interim Water Use Target). EVWD had previously calculated baseline water use and water use targets in the 2010 RUWMP. However, for the 2015 UWMP, DWR has required that agencies use 2010 census data in the calculation of service area populations. EVWD has re-calculated its historic service area population using the DWR Population Tool, and in this section presents an updated calculation of baseline water use and water use targets.

DWR has prepared standardized tables to record and document the calculations required for this section. The standardized tables for EVWD's calculations are included in Appendix Q.

7.3.1 Baseline Water Use

Years 1999 to 2008 have been selected for calculation of the 10-year base period, while years 2004 to 2008 have been selected for calculation of the 5-year base period.

EVWD's service area population was calculated using the DWR Population Tool. The GIS-based tool was used to intersect EVWD's service area with census data. The tool directly calculated a service area population for 1990, 2000, and 2010. Populations for intermediate years were estimated using the number of service connections.

The calculation of gross water use begins with the total amount of water that was put into the potable water distribution system by EVWD. Water that was exported to another agency was then subtracted, to leave the amount used by EVWD retail customers.

For the period from 1999 through 2008, the 10-year average Base Daily Per Capita Water Use for EVWD is 215 GPCD; the 5-year is 209 GPCD.

7.3.2 2015 and 2020 Targets

DWR allows agencies to select from four potential methods for calculating the compliance and interim water use targets as set forth by Water Code section 10608.20(b). EVWD has selected Method 4. The Compliance Water Use Target under Method 4 is Base Daily GPCD less:

- Indoor residential water savings of 15 GPCD or an amount determined by use of DWR's "BMP Calculator"
- 20 percent savings on all unmetered uses
- 10 percent savings on Baseline CII (expressed in GPCD)
- 21.6 percent savings on current landscape and water loss uses (expressed in GPCD)

EVWD is choosing to use the default value of 15 GPCD for the indoor residential water savings. EVWD has no unmetered uses. Baseline CII water use was estimated using CII water sales in the year at the midpoint of the baseline range. Baseline CII water use is 56 GPCD.

DWR has provided the following formula for calculating landscape and water loss uses:

= Base Daily Per Capita Water Use - Default Indoor Water Use (70 GPCD) - Baseline CII

Based on this formula, EVWD's landscape and water loss use is:

= 215 GPCD - 70 GPCD - 56 GPCD = 89 GPCD

EVWD's Compliance Water Use Target is calculated as 175 GPCD.

Finally, the selected Compliance Water Use Target must be compared against what DWR calls the "Maximum Allowable GPCD". The Maximum Allowable GPCD is based on 95 percent of a 5-year average. The Maximum Allowable GPCD is used to determine whether a supplier's 2015 and 2020 per capita water use targets meet the minimum water use reduction of the SBX7-7 legislation. Specifically, if an agency's Compliance Water Use Target is higher than the Maximum Allowable GPCD, the agency must instead use the Maximum Allowable GPCD as their target.

Based on 95 percent of the 5-year baseline average, the Maximum Allowable GPCD is 199. The Compliance Water Use Target under Method 4 is less than the Maximum Allowable GPCD, so no adjustments to the Compliance Water Use Target are necessary.

The results are summarized in Table 7-8.

Table 7-8. DWR Table 5-1R. Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline GPCD	2015 Interim Target	Confirmed 2020 Target
10-year	1999	2008	215	195	175
5-year	2004	2008	209		

7.3.3 2015 Compliance Daily per Capita Water Use

EVWD's calculated GPCD for 2015 is below the interim water use target. The results are summarized in Table 7-9.

Table 7-9. DWR Table 5-2R. 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Extra-ordinary Events	Economic Adjustment	Weather Normal-ization	Total Adjustments	Adjusted 2015 GPCD	2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015?
147	195	0	0	0	0	147	147	YES

7.4 Demand Management Measures

The goal of the Demand Management Measures (DMM) section in a UWMP is to provide a comprehensive description of the water conservation programs that a supplier has implemented, is currently implementing, and plans to implement in order to meet its urban water use reduction targets.

7.4.1 Water waste prevention ordinances

EVWD has a water shortage contingency plan that identifies the level of shortage, prohibitions and associated consumption reduction, penalties and charges. The Water Shortage Contingency Plan was again addressed in Section 15 of Ordinance 395, adopted on June 1, 2015, which prohibits gutter flooding, non-recirculating fountains, customer plumbing leaks, hosing of hard surfaces, and automatic water serving in restaurants during times of stage 2 and 3 water shortages (Ordinance 395 is included in Appendix G). There are no available estimates on the conservation savings resulting from this DMM or the effects of this DMM on EVWD's ability to further reduce demand.

7.4.2 Metering

All of EVWD's customers are metered as are all new connections. EVWD has a meter maintenance and replacement plan. EVWD is in the process of upgrading its meters to Advanced Metering Infrastructure (AMI) meters. EVWD has identified 6,000 meters for replacement during Phase 1 and 18,000 during Phases 2, 3, and 4. EVWD expects to begin this program in 2016.

7.4.3 Conservation pricing

EVWD charges its Residential customers for potable water use in three separate pricing tiers. The first tier is an estimate of indoor water use and the second tier is an estimate of efficient outdoor water use. Tiers one and two are considered in-budget water use and tier three represents inefficient water usage. EVWD charges its Commercial customers differently in that their water budget is based on the customer's historic use for the same billing periods of the prior two years. EVWD calculates an average year demand for a billing period based on the same billing period of the past two years. Commercial customers' water budget may be adjusted by EVWD. Usage in excess of the water budget is billed at inefficient use Tier 3 pricing. A more thorough explanation of EVWD's customer billing procedures is given in Section 10 of Ordinance 395, attached in Appendix G.

7.4.4 Public education and outreach

EVWD consistently works to educate the public and increase awareness of the District's projects and programs in the local and regional community. Effective communication is provided through a number of methods from bill inserts, handouts, informative flyers, and direct mail pieces to newspaper and bus shelter advertisements, news releases, social media outreach, and website content. District staff participate in career day and school events, offer tours of District facilities and support community events with information booths. Yard signs, fact sheets, rebate programs, monthly conservation tips, vehicle magnets, banners, educational workshops, and regular staff communication are also part of the District's comprehensive outreach program. Each piece is designed in-house without the use of consultants.

Outreach efforts are used to establish a connection with customers, increase District visibility, promote a transparent operation, and foster an environment of enhanced public service. EVWD also provides school visits and presentations when requested by the school. EVWD meets this demand management measure at all compliance levels.

7.4.5 Programs to assess and manage distribution system real loss

EVWD has an active water loss control program and is in the process of conducting a water audit for FY2016-17. EVWD uses Cityworks work order program to track leaks, flushing, and other non-revenue water sources. Through Cityworks and staying proactive in reviewing water mains throughout the service area, EVWD identifies problem areas in the distribution system that need to be repaired or upgraded. EVWD uses preventative maintenance to ensure safe delivery of water to all of its customers.

7.4.6 Water conservation program coordination and staffing support

EVWD has expanded the conservation program from a single person, to adding a full time conservation coordinator, a part time conservation representative, shared time for outreach staff, and has empowered all District staff to take an active role in the drought response. The programs budget is funded through budget based water rates.

7.4.7 Planned Implementation to Achieve Water Use Targets

EVWD's current per-capita consumption is less than its 2020 compliance target. EVWD expects to continue to implement its current conservation programs to encourage conservation and maintain per-capita consumption below the compliance target.

7.4.8 Other Demand Management Measures

EVWD offers a Weather Based Irrigation Controller Direct installation program that addresses excess watering throughout the year. The program uses advance technology to help replenish the appropriate amount of water lost to evaporation based on varying weather conditions. EVWD also implemented a Water Budget Based Rate Structure in June 2015. This industry best practice increases the Districts ability to address drought challenges. It offers a clear indication of where customers have potential to save, not only from a pricing perspective, but through the presence of Tier 3 water usage.

7.5 System Supplies

EVWD’s water supply consists primarily of groundwater from wells in the western portion of the service area. These wells, in the San Bernardino Basin Area (SBBA), supply approximately 80 percent of the total water supply. In addition to groundwater, Plant 134, an 8-MGD water treatment plant, provides surface water from the Santa Ana River and the SWP.

7.5.1 Purchased or Imported Water

Imported water available to EVWD is SWP purchased from Valley District. A description of this supply and its reliability is provided in Chapter 2. EVWD currently supplements its local supply with SWP deliveries from Valley District and in the past this SWP has made up a small amount of EVWD’s water supply. EVWD anticipates seeking regular SWP supplies to supplement Santa Ana River water to run Surface Water Treatment Plant 134. Plant 134 was designed to treat Santa Ana River water and SWP and was completed in 1996. In 2013, the plant was upgraded from 4 MGD to 8 MGD of design capacity.

7.5.2 Groundwater

Over the last five years, EVWD has drawn approximately 80 percent of its water supply from wells located within the San Bernardino Basin Area. Currently, 17 wells provide a rated capacity of 27,586 GPM.

EVWD's historical production for the past five years is shown in Table 7-10.

Table 7-10. DWR Table 6-1R. Groundwater Volume Pumped (AF)

Groundwater Type	Location or Basin Name	Water Quality	2011	2012	2013	2014	2015
Alluvial Basin	SBBA	Drinking Water	18,375	18,564	18,898	18,157	13,501
	Total		18,375	18,564	18,898	18,157	13,501

7.5.3 Surface Water

EVWD has current water rights of 5 MGD (4,500 AFY) of Santa Ana River water through stock ownership in the North Fork Mutual Water Company. EVWD is currently the major shareholder in the company and continues to pursue the purchase of additional stock.

7.5.4 Stormwater

EVWD is participating in regional planning efforts to capture additional stormwater for purposes of groundwater recharge.

7.5.5 Wastewater and Recycled Water

7.5.5.1 Recycled Water Coordination

EVWD provides wastewater collection service to its customers. Wastewater treatment is provided by a regional treatment plant, located downstream and outside of EVWD's sphere of influence. A Joint Powers Agreement (JPA) was formed in 1957 between EVWD and the neighboring San Bernardino Municipal Water Department (SBMWD) whereby SBMWD treats all wastewater generated within the EVWD service area.

7.5.5.2 Wastewater Collection, Treatment, and Disposal

Wastewater from the EVWD service area is treated to secondary levels at the San Bernardino Regional Wastewater Reclamation Plant and to tertiary levels at the Rapid Infiltration/Extraction (RIX) Plant. In 1995, SBMWD began operation of RIX to provide additional treatment of secondary effluent from the existing plants of SBMWD and the City of Colton. The RIX plant is located approximately 6 miles southwesterly and downstream of EVWD's southwesterly boundary.

Table 7-11. DWR Table 6-2R. Wastewater Collected within Service Area in 2015

Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2015 (AF)	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
East Valley Water District	Estimated	6,721	City of San Bernardino	San Bernardino Water Reclamation Plant	No	No
	Total Wastewater Collected from Service Area in 2015	6,721				

San Bernardino Valley Municipal Water District, in cooperation with EVWD is in the planning stages for a project that would involve a new treatment plant to produce recycled water. This project, the Sterling Natural Resource Center, is expected to capture approximately 6 mgd (in the first phase) of wastewater generated by customers within EVWD's service area. This new facility would produce recycled water for groundwater recharge.

7.5.5.3 Recycled Water Beneficial Uses

The future beneficial use has been estimated using planning documents prepared for the Sterling Natural Resource Center.

Table 7-12. DWR Table 6-4R. Current and Projected Recycled Water Direct Beneficial Uses within Service Area (AF)

Name of Agency Producing (Treating) the Recycled Water:	East Valley Water District							
Name of Agency Operating the Recycled Water Distribution System:	East Valley Water District							
Supplemental Water Added in 2015	0							
Source of 2015 Supplemental Water	None							
Beneficial Use Type	**General Description of 2015 Uses**	**Level of Treatment**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Groundwater recharge		Tertiary	0	6,700	6,700	6,700	6,700	6,700
Total			0	6,700	6,700	6,700	6,700	6,700

7.5.5.4 Actions to Encourage and Optimize Future Recycled Water Use

EVWD has plans to implement groundwater recharge by 2020. There are no plans to use recycled water for any other purposes in the foreseeable future.

Table 7-13. DWR Table 6-6R. Methods to Expand Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Sterling Natural Resource Center	Groundwater recharge	2020	6,700

7.5.6 Desalinated Water Opportunities

The development of (or financial participation in) a new seawater desalination project, while costly, is being investigated by other wholesale and retail water agencies in southern California. Because the San Bernardino Valley is an inland area, in order for desalination to work it would be necessary to join with other water purveyors in the development of a coastal desalination facility and then receive water from the SWP supplies of other participants via an exchange. It is not cost-effective for the San Bernardino Valley to receive direct delivery of desalted ocean water.

Seawater desalination is an alternative that is technically viable. However, production and treatment costs have historically been several times higher than those of SWP costs and conventional treatment.

7.5.7 Exchanges or Transfers

EVWD has emergency water supply connections to two adjacent water purveyors (SBMWD and the City of Riverside) to meet needs during periods of lowered groundwater levels, but these are short-term, as needed purchases and are not accounted for as additional water supply.

7.5.8 Future Water Projects

EVWD is currently enhancing its ability to utilize its existing water supply sources through several projects that are in various phases of implementation, from planning to preliminary design to construction. EVWD is evaluating additional projects to meet water demand at build-out conditions. These projects will be implemented as required by development in the service area. Supply sources potentially available to EVWD include:

- Potential new groundwater wells
- Potential new 6 MGD surface water treatment plant in the Harmony area
- Potential regional conjunctive use projects with Valley District

These projects do not increase water supplies available to EVWD, but rather allow EVWD to increase utilization of existing supplies and to make deliveries to the different portions of the service area. EVWD has current water rights of 5 MGD (4,500 AFY) of Santa Ana River water with the ability to expand to about 6.5 MGD (7,300 AFY) through the conversion of remaining agricultural properties and water shares of stock. EVWD holds rights to direct delivery of native surface water, through stock ownership in the North Fork Mutual Water Company. EVWD is currently the major shareholder in the company and continues to pursue the purchase of additional shares. As agricultural land converts to urban uses,

EVWD gains not only the new urban demand but the associated water stock shares. These additional supplies are shown in Table 7-14.

Table 7-14. DWR Table 6-7R. Expected Future Water Supply Projects or Programs

Name of Future Projects or Programs	Joint Project with Other Agencies?	Other Agency Names	Description	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Agency (AF)
Sterling Natural Resource Center	Yes	Valley District	New wastewater reclamation plant	2020	Normal	6,700

7.5.9 Summary of Existing and Planned Sources of Water

Table 7-15 summarizes the water resources used by EVWD in 2015, and the projected future supplies are summarized in Table 7-16. The estimated amount of imported water supply shown in Table 7-16 has been estimated by EVWD and provided to Valley District.

Table 7-15. DWR Table 6-8R. Water Supplies - Actual

Water Supply	Additional Detail on Water Supply	2015 Actual Volume (AF)	2015 Water Quality
Groundwater	SBBA	13,501	Drinking Water
Surface Water	Santa Ana River	3,371	Drinking Water
Purchased or Imported Water	SBVMWD Tier 1	294	Drinking Water
	Total	17,165	

Table 7-16. DWR Table 6-9R. Water Supplies – Projected (AF)

Water Supply	Additional Detail on Water Supply	Water Quality	2020	2025	2030	2035	2040
Groundwater	SBBA	Drinking Water	21,012	24,850	28,742	32,692	32,692
Surface Water	Santa Ana River	Drinking Water	7,300	7,300	7,300	7,300	7,300
Purchased or Imported Water	SBVMWD Tier 1	Drinking Water	8,960	8,960	8,960	8,960	8,960
Recycled Water	Sterling Natural Resource Center	Tertiary	6,700	6,700	6,700	6,700	6,700
	Total		43,972	47,810	51,702	55,652	55,652

7.6 Water Supply Reliability Assessment

7.6.1 Imported Water

During times of State-wide drought conditions, the availability of SWP may be reduced. These conditions are normally known in advance, providing EVWD with the opportunity to plan for the

reduced supply. During a drought period, it is Valley District's priority to make direct deliveries to the water treatment plants operated by Redlands, WVWD, YVWD, SBMWD, and EVWD and to maintain lake levels at Big Bear Lake (Big Bear Lake water also feeds the water treatment plants of Redlands and EVWD). Because EVWD's water treatment plant can use local surface water and imported water, during a single-dry year EVWD may elect to take a small amount of imported water, making more imported water available to other agencies. In this case, EVWD would utilize additional groundwater through groundwater well production from the SBBA. In a multiple dry year Valley District expects between 44,858 AF and 45,910 AF of water to be available, meaning Valley District could fulfill normal direct deliveries to water treatment plants in a multiple-dry year, including the EVWD treatment plant. Table 7-22 and Table 7-23 estimate how imported water supplies available to EVWD may be reduced during drought conditions.

7.6.2 Groundwater

Some of EVWD's wells are impacted by nitrate, perchlorate, fluoride, uranium, and/or VOCs. EVWD has suspended operation at Well 12A. As described below, EVWD has plans in place that will allow these wells to come back on-line. EVWD continues to monitor groundwater contamination and the movement of groundwater contaminant plumes. In response to water quality concerns EVWD has altered operations at other wells to compensate for the reduced capacity and the following actions have been put into place to protect EVWD supply:

- A wellhead treatment facility has been implemented to treat VOCs from Well 28A using granulated activated carbon.
- At Plant 107, wellhead nitrate and perchlorate treatment facility has been put into operation.
- EVWD blends water from Well 39 to deal with high fluoride levels.
- EVWD continues to monitor for nitrates in Wells 25A, 28A, and 9.

These past and ongoing groundwater treatment projects have demonstrated that treatment is an economically viable alternative for handling volatile organic compounds, perchlorate, nitrates, and uranium. To manage the long-term potential for continued groundwater contamination, EVWD has an on-going land acquisition program. EVWD has vacant land available for future facilities. Sites are selected for the development of new wells based on knowledge of the plumes' movement, land availability and engineering feasibility. Based on current conditions water quality is not anticipated to affect EVWD supply reliability. However, water quality issues are constantly evolving. EVWD will take action to protect and treat supplies when needed, but it is recognized that water treatment can have significant costs.

As described in Chapter 2, the SBBA is adjudicated on a safe yield basis. EVWD therefore has the opportunity to develop additional wells and over-extract groundwater under specified conditions contained in the stipulated judgment. The wells in general have provided a stable source of water supply. Past records show that EVWD has not removed any well from its supply source during drought conditions, although, some wells had to be lowered to continue extraction of groundwater. During 1990, the driest year on record for the Southern California, EVWD was impacted only by lowered groundwater levels and increased pumping costs. EVWD maintained full capability to use all wells within its system. As described in Chapter 2, extensive modeling has been used to examine groundwater recharge, groundwater pumping, basin storage, groundwater flow, and groundwater plume location and plume migration.

7.6.3 Reliability by Type of Year

Based on the studies and information listed above it is anticipated that groundwater pumping by EVWD and other SBBA users in the Valley District service area will not be reduced or curtailed during a single-dry or multi-dry year.

7.6.4 Regional Supply Reliability

EVWD currently supplements its local supply with SWP deliveries from Valley District and in the past this SWP has made up a small amount of EVWD's water supply. EVWD anticipates seeking regular SWP supplies to supplement Santa Ana River water to run Surface Water Treatment Plant 134.

7.7 Water Shortage Contingency Planning

Water supplies may be interrupted or reduced significantly in a number of ways, such as drought which limits supplies, an earthquake which damages delivery or storage facilities, or a regional power outage. Chapter 5 of this UWMP describes water shortage contingency planning for regional water supply sources (imported water, groundwater). This section focuses on water shortage contingency planning for EVWD.

7.7.1 Stages of Action

Section 15 of Ordinance 395, attached in Appendix G, sets forth a three-stage water shortage contingency plan for the conservation of water. This plan includes voluntary and mandatory conservation measures; key elements are included herein.

7.7.1.1 Stage 1 – Normal Conditions: Voluntary Conservation Measures

Normal conditions shall be in effect when the District is able to meet all the water demands of its customers in the immediate future. During normal conditions all water users should continue to use water wisely, to prevent the waste or unreasonable use of water, and to reduce water consumption to that necessary for ordinary domestic and commercial purposes.

7.7.1.2 Stage 2 – Threatened Water Supply Condition

In the event of a threatened water supply shortage which could affect the District's ability to provide water for ordinary domestic and commercial uses, the Board of Directors shall hold a public hearing at which consumers of the water supply shall have the opportunity to protest and to present their respective needs to the District. The Board may then, by resolution, declare a water shortage condition to prevail, and the conservation measures in Table 7-18 shall be in effect.

7.7.1.3 Stage 3 – Water Shortage Emergency: Mandatory Conservation Measures

In the event of a water shortage emergency in which EVWD may be prevented from meeting the water demands of its customers, the Board of Directors shall, if possible, given the time and circumstances, immediately hold a public hearing at which customers of EVWD shall have the opportunity to protest and to present their respective needs to the Board. No public hearing shall be required in the event of a breakage or failure of a pump, pipeline, or conduit causing an immediate emergency. The General Manager is empowered to declare a water shortage emergency, subject to the ratification of the Board of Directors within 72 hours of such declaration, and the rules in Table 7-18 shall be in effect.

The Ordinance provides for exceptions under certain circumstances, establishes enforcement provisions, defines the methods for declaring and terminating water conservation stages, and provides for the form

of notices and decisions of the Board of Directors. The specific water supply conditions for triggering EVWD's mandated conservation measures and the expected reduction in water use are summarized in Table 7-17.

Table 7-17. DWR Table 8-1R. Stages of WSCP

Stage	Percent Supply Reduction	Water Supply Condition
1	0	Normal Conditions
2	10	10% to 15% Supply Reduction
3	50	15% to 50% Supply Reduction

7.7.2 Prohibitions on End Uses

The water use prohibitions for each stage are shown in Table 7-18.

Table 7-18. DWR Table 8-2R. Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	CII - Restaurants may only serve water upon request	Restaurants are not to provide drinking water to patrons except by request.	Yes
2	CII – Lodging establishment must offer opt out of linen service	Hotels and motels must offer their guests the option to not have their linens and towels laundered daily, and must prominently display this option in each room.	Yes
2	Landscape - Limit landscape irrigation to specific days	Upon notice and public hearing, EVWD may determine that the irrigation of exterior vegetation shall be conducted only during specified hours and/or days, and may impose other restrictions on the use of water for such irrigation. The irrigation of exterior vegetation at other than these times shall be considered to be a waste of water.	Yes
2	Landscape - Limit landscape irrigation to specific times	Exterior landscape plans for all new commercial and industrial development shall provide for timed irrigation and shall consider the use of drought resistance varieties of flora. Such plans shall be presented to and approved by EVWD prior to issuance of a water service letter.	Yes
2	Landscape - Limit landscape irrigation to specific times	Public and private parks, golf courses, swimming pools and school grounds which use water provided by the District shall use water for irrigation and pool filling between the hours of 8:00 p.m. and 6:00 a.m.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	Landscape - Other landscape restriction or prohibition	Persons receiving water from EVWD who are engaged in commercial agricultural practices, whether for the purpose of crop production or growing of ornamental plants shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. Upon the request of the General Manager, these persons may be required to prepare a plan describing their irrigation practices and equipment, including but not limited to, an estimate of the efficiency of the use of water on their properties.	Yes
2	Landscape - Restrict or prohibit runoff from landscape irrigation	Any water used on premises that is allowed to escape the premises and run off into gutters or storm drains shall be considered a waste of water.	Yes
2	Other - Prohibit use of potable water for washing hard surfaces	No water provided by EVWD shall be used for the purposes of wash-down of impervious areas, without specific written authorization of the General Manager.	Yes
2	Landscape – Other landscape restriction or prohibition	Medians and bordering parkways located within the right-of-way are prohibited from using potable water to irrigate turf or other high water use plant material as identified by the Water Use Classifications of Landscaping Species (WUCOLS) Guide. Bordering parkways are considered the strips of non-functional ornamental turf adjacent to the street. The continued irrigation and preservation of trees is encouraged.	Yes
2	Other - Require automatic shut of hoses	The washing of cars, trucks or other vehicles is not permitted, except with a hose equipped with an automatic shut-off device, or a commercial facility so designated on EVWD's billing records.	Yes
2	Pools and Spas - Require covers for pools and spas	All residential, public and recreational swimming pools, of all size, shall use evaporation resistant covers and shall re-circulate water. Any swimming pool which does not have a cover installed during periods of non-use shall be considered a waste of water.	Yes
2	Other water feature or swimming pool restriction	Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	CII – Other CII restriction or prohibition	Persons receiving water from the District who are engaged in commercial agricultural practices, whether for the purpose of crop production or growing of ornamental plants shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. Upon the request of the General Manager, these persons may be required to prepare a plan describing their irrigation practices and equipment, including but not limited to, an estimate of the efficiency of the use of water on their properties. Commercial and industrial facilities shall, upon request of the General Manager, provide the District with a plan to conserve water at their facilities. The District will provide these facilities with information regarding the average monthly water use by the facility for the last two-year period, or the State of California approved conservation base year. The facility will be expected to provide the District with a plan to conserve or reduce the amount of water used by that percentage deemed by the Board of Directors to be necessary under the circumstances. After review and approval by the General Manager, the water conservation plan shall be considered subject to inspection and enforcement by the District.	Yes
3	Landscape - Other landscape restriction or prohibition	Commercial nurseries shall discontinue all watering and irrigation. Watering of livestock is permitted as necessary.	Yes
3	Landscape - Prohibit all landscape irrigation	Watering of parks, school grounds, golf courses, lawns, and landscape irrigation is prohibited.	Yes
3	Other - Prohibit use of potable water for construction and dust control	No new construction meter permits shall be issued by EVWD. All existing construction meters shall be removed and/or locked.	Yes
3	Other - Prohibit use of potable water for washing hard surfaces	Washing down of driveways, parking lots or other impervious surfaces is prohibited.	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Washing of vehicles, except when done by commercial car wash establishments using only recycled or reclaimed water is prohibited.	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	Filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes are prohibited.	Yes
3	Landscape – Other landscape restriction or prohibition	Commercial nurseries shall discontinue all watering and irrigation. Watering of livestock is permitted as necessary.	Yes

7.7.3 Penalties, Charges, Other Enforcement of Prohibitions

In the implementation of the water shortage contingency plan, the California Water Code Section 31029 makes any violation of the EVWD's Ordinance a criminal misdemeanor and upon conviction thereof, the violator will be subject to punishment by fine, imprisonment, or both as may be allowed by law. In addition to criminal penalties, violators of the mandatory provisions of the ordinance will be subject to civil action initiated by EVWD, as summarized below:

- First Violation -- Issuance of written notice of violation of water user. The notice shall be given pursuant to the requirements of Section 15.10 of Ordinance 395.
- Second Violation -- For a second violation of Ordinance 395 within a 12-month period, or failure to comply with the notice of violation within 30 days after notice of imposition, a surcharge of $100.00 is hereby imposed for the meter through which the wasted water was supplied.
- Third Violation -- For a third violation of this ordinance within a 12-month period, or for continued failure to comply within 30 days after notice of an imposition of second violation sanctions, a one-month penalty surcharge in the amount of $300.00 is hereby imposed for the meter through which the wasted water was supplied.
- Subsequent Violations -- For any subsequent violation of this Ordinance, while in Stage No. 3, within the twenty-four (24) calendar months after a first violation as provided in Section 15.09.01 hereof, the penalty surcharge provided in Section 15.09.05 hereof shall be imposed and the District may discontinue water service to that customer at the premises or to the meter where the violation occurred. The charge for reconnection and restoration of normal service shall be as provided in the Rules and Regulations of the District. Such restoration of service shall not be made until the General Manager of the District as determined that the water user has provided reasonable assurances that future violations of this Ordinance by such user will not occur.

In the unlikely event of a severe and extended shortage, EVWD would have to implement other alternatives to provide enough water to its constituents. The primary and most desirable alternative would be to develop its surface water supply to make the most use of entitlements to the local surface waters. Factors that affect the feasibility of surface water development include growth of future water demands (after holding rights to surface waters, and the investment in treatment facilities). EVWD could also undertake well drilling to accommodate any long-term system repairs or outages.

7.7.4 Consumption Reduction Methods

EVWD offers various rebates to encourage conservation (i.e. ultra-low flush toilet replacements, high efficiency washing machines, etc.) along with targeted conservation efforts for large users. Additionally, EVWD has implemented budget-based rates, which are structured to encourage water use efficiency.

Table 7-19. DWR Table 8-3R. Stages of WSCP - Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
2	Expand Public Information Campaign	Commercial and industrial facilities shall, upon request of the General Manager, provide EVWD with a plan to conserve water at their facilities. EVWD will provide these facilities with information regarding the average monthly water use by the facility for the last two-year period. The facility will be expected to provide EVWD with a plan to conserve or reduce the amount of water used by that percentage deemed by the Board of Director to be necessary under the circumstances. After review and approval by the General Manager, the water conservation plan shall be considered subject to inspection and enforcement by EVWD.
All	Improve Customer Billing	EVWD has established budget-based rates for all customers to encourage efficient use of water.
All	Increase Frequency of Meter Reading	EVWD is in the process of upgrading its meters to Advanced Metering Infrastructure (AMI) meters to provide more timely information on water use.
All	Offer Water Use Surveys	EVWD provides home water use evaluations at no charge to its customers. EVWD will provide historical water use data to commercial and industrial facilities for use in developing a water conservation plan for their facilities.
All	Provide Rebates on Plumbing Fixtures and Devices	EVWD has programs to provide rebates to customers for purchase of High Efficiency Toilets, High Efficiency Showerheads, and High Efficiency Washing Machines.
All	Provide Rebates for Landscape Irrigation Efficiency	EVWD has programs to provide rebates to customers for purchase of Weather-Based Irrigation Controllers and High Efficiency Sprinkler Nozzles.

7.7.5 Determining Water Shortage Reductions

Under normal conditions, EVWD prepares monthly production reports which are reviewed and compared to production reports and pumping statistics from prior months and the same period of the prior year. Under shortage conditions, these production reports could be prepared as often as daily.

7.7.6 Revenue and Expenditure Impacts

EVWD makes contributions to a rate stabilization fund contribution in accordance with a District Designated Fund Policy established in July 2010. Funds discussed in the policy include the Rate Stabilization Fund and the Capital Replacement Fund.

In the event of a water shortage, a two-point program will be utilized to meet the fiscal shortfall of reduced water revenues:

1. Reduce operation and maintenance expenses
2. Defer selected capital improvement projects until water shortage situation improves.
3. Rate Stabilization Funds, once accumulated, will serve as a third means of meeting fiscal shortfalls.

7.7.7 Resolution or Ordinance

A Water Shortage Contingency Plan was originally prepared by EVWD in 1992, in response to Assembly Bill 11X (AB 11X) signed into law on October 14, 1991. The bill requires urban water suppliers providing municipal water directly or indirectly to more than 3,000 customers, or supplying more than 3,000 acre-feet of water annually, to draft a water shortage contingency plan in case of a drought for the sixth consecutive year. Plan elements mandated by AB 11X are addressed therein. The Plan was subsequently incorporated into the EVWD Ordinance No. 395 Section 15 – Water Conservation (this is included in Appendix G). This section of the Ordinance addresses water conservation measures the District has adopted for (1) normal conditions, (2) threatened water supply conditions, and (3) emergency water shortage conditions.

7.7.8 Catastrophic Supply Interruption

EVWD has identified system vulnerabilities due to fire, earthquake, and power outages. EVWD has developed an Emergency Response Plan. EVWD has in place back-up power supplies at critical locations within the distribution system. Due to South Coast Air Quality Management Board rules and economic restraints, a back-up power supply source at every plant within EVWD's system is not feasible. EVWD maintains portable pumps that can be used to transfer water internally, but cannot be used for production. Currently, EVWD's storage capacity of 27.6 million gallons would provide a potable supply for customers' non-irrigation uses (assumes implementation of Water Shortage Contingency Plan) for an estimated two to three days. As described above, EVWD participates in multiple mutual aid agreements and has agreements in place for the provision of water supply and/or manpower. In the event of a natural or man-made disaster that could affect the EVWD's ability to provide a potable water supply for up to thirty days, the following measures will be implemented as required:

1. The Boil Water notification program will be activated. The notice will be provided to local radio stations and newspapers. EVWD will contact the media and City and County agencies. Customers will be notified of supplemental sources of water for cooking and drinking (e.g. swimming pools, water heaters, and bottled water).
2. Irrigation uses of water will immediately be prohibited. Enforcement will occur through a cooperative effort with the Sheriff's Department, City of San Bernardino Police Department and the media.
3. EVWD is a participant in ERNIE a water/wastewater mutual aid network within San Bernardino and Riverside counties. During a Catastrophic Supply Interruption, the Mutual Aid Agreement with ERNIE will be implemented. The General Manager will contact general managers from surrounding agencies to obtain assistance in providing manpower for repairs and/or a supplemental supply of water.
4. A public information program will be initiated. The General Manager will appear on local television and provide daily reports to the local newspaper and radio stations. Members of the Board of Directors will speak to local service clubs and chambers of commerce.

7.7.9 Minimum Supply Next Three Years

The UWMP Act requires a retailer to quantify the minimum water supply available during the next three-year period, assuming 2016 to 2018 repeat the driest three-year historic sequence for each water supply source. Table 7-20 shows the estimated minimum supply, given a repeat of historically low conditions on all water supplies. EVWD has adequate supplies available to meet projected demands should a multiple-dry year period occur during the next three years.

Table 7-20. DWR Table 8-4R. Minimum Supply Next Three Years (AF)

Available Water Supply	2016	2017	2018
Available Water Supply	31,972	31,972	31,972

7.8 Supply and Demand Assessment

Anticipated supplies and demands for EVWD are compared in the following tables.

Table 7-21. DWR Table 7-2R. Normal Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	43,972	47,810	51,702	55,652	55,652
Demand Totals	31,609	32,879	33,943	35,050	36,203
Difference	12,363	14,931	17,759	20,602	19,449

Table 7-22. DWR Table 7-3R. Single Dry Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	38,672	42,510	46,402	50,352	50,352
Demand Totals	31,609	32,879	33,943	35,050	36,203
Difference	7,063	9,631	12,459	15,302	14,149

Table 7-23. DWR Table 7-4R. Multiple Dry Years Supply and Demand Comparison (AF)

Year	Totals	2020	2025	2030	2035	2040
First Year	Supply Totals	38,672	42,510	46,402	50,352	50,352
	Demand Totals	31,609	32,879	33,943	35,050	36,203
	Difference	7,063	9,631	12,459	15,302	14,149
Second Year	Supply Totals	38,672	42,510	46,402	50,352	50,352
	Demand Totals	31,609	32,879	33,943	35,050	36,203
	Difference	7,063	9,631	12,459	15,302	14,149
Third Year	Supply Totals	38,672	42,510	46,402	50,352	50,352
	Demand Totals	31,609	32,879	33,943	35,050	36,203
	Difference	7,063	9,631	12,459	15,302	14,149

8 Loma Linda

8.1 System Description

Loma Linda, incorporated in 1970, is a municipally-owned retail water utility that provides potable water within the City boundaries. Loma Linda's service area, an area approximately 6,784 acres, or 10.6 square miles in size, is part of the greater San Bernardino-Ontario metropolitan area and also within the boundaries of the Valley District service area. Figure 8-1 shows the Loma Linda service area. Loma Linda estimates that it could grow by an additional 50 percent or about 11,000 persons.

Residential land uses form the largest percentage of developed uses (24 percent), followed by land uses that are categorized as Institutional which make up 9 percent. These uses include medical uses, churches, public facilities, and utilities. Commercial/Industrial makes up the smallest percentage of developed use with 3.5 percent.

Loma Linda University and Loma Linda University Medical Center are located within the limits of the City, but have their own water production and distribution system. With the exception of fire flow, the City does not provide water service to the University on a normal basis. However, the City is the water provider for other large institutional users including the 205-bed Veterans Administration Hospital and the Loma Linda Community Hospital.

Loma Linda's water supply consists primarily of groundwater from six production wells. These wells, in the SBBA, supply nearly 100 percent of the total water supply.

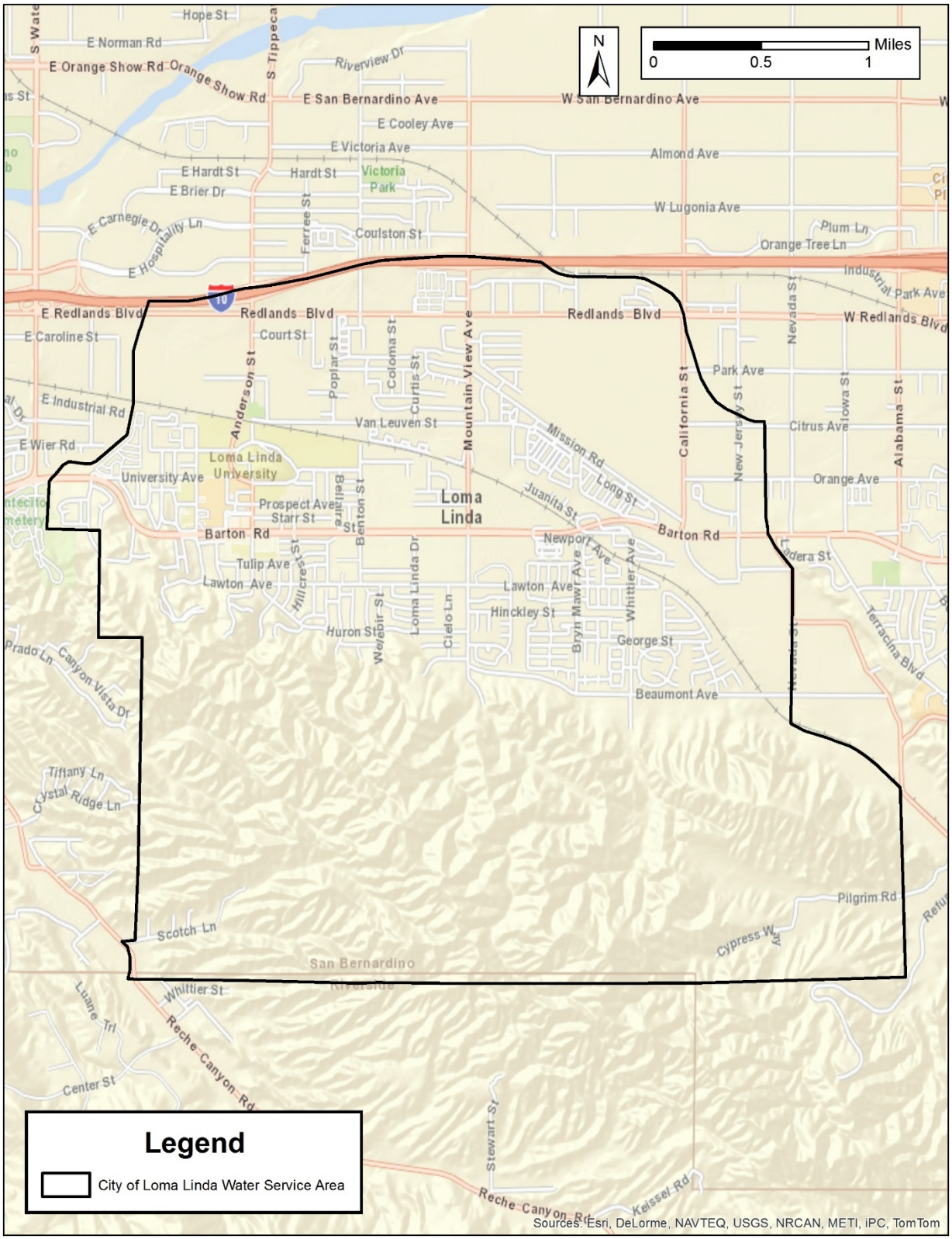


Figure 8-1. City of Loma Linda Service Area

8.1.1 Service Area Population and Demographics

The DWR Population Tool was used to intersect the service area boundary in Figure 8-1 with census data to provide population estimates for 1990, 2000, and 2010. Population for intermediate non-census years was estimated using a constant growth rate, as connection data was not available for all the intermediate years. The service area population for 2015 was then estimated using the number of residential connections in 2010 and 2015.

For future years, the service area boundary was intersected with data provided by SCAG. As part of the 2012 Adopted Growth Forecast, SCAG has estimated the population in 2020 and in 2035 inside each of approximately 4,000 traffic analysis zones (TAZ) that cover southern California. By intersecting the service area boundary with the TAZ, an expected population growth rate was calculated for the Loma Linda service area. This growth rate was then used to estimate future populations.

The estimated service area populations are shown in Table 8-1.

Table 8-1. DWR Table 3-1R. Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040
Population Served	23,298	24,869	26,434	28,098	29,866	31,745

8.1.2 Service Area Climate

Loma Linda is located on the southeastern side of the San Bernardino Valley and within the South Coast Hydrologic Region. The climate typically exhibits hot, dry summers and mild, wet winters. Most rainfall occurs during the months of November through April. The hottest and driest period of the year is from June through September. It is not unusual during the summer months to have several consecutive days that the daily temperature exceeds 100 degrees Fahrenheit.

Average temperature, precipitation, and evapotranspiration by month are shown in Table 8-2. Evapotranspiration (ET) is the water lost to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indicator of how much water crops, lawn, garden, and trees need for healthy growth and productivity. ET from a standardized grass surface is commonly denoted as ETo.

Table 8-2. Historical Climate Data

Month	Average Temperature (°F)[1]	Average Precipitation (in.)[1]	Average Standard ETo (in.)[2]
January	52.4	3.22	2.53
February	54.6	3.25	2.87
March	56.7	2.86	4.30
April	60.9	1.29	5.38
May	65.6	0.47	5.82
June	71.3	0.09	6.76
July	77.7	0.04	7.38
August	77.7	0.15	7.09
September	73.9	0.33	5.51
October	66.5	0.71	3.97
November	58.6	1.32	2.89
December	53.3	2.38	2.38
Total		**16.1**	**56.9**

Notes:
[1]NOAA weather station 0407723 in San Bernardino; data from 1893 through 2004; http://wrcc.dri.edu;
[2]CIMIS weather station 44 at University of California, Riverside (1986-2015); http://wwwcimis.water.ca.gov/

8.2 System Water Use

8.2.1 Water Uses by Sector

Loma Linda categorizes its water use customers into the following: single family residential, multi-family residential, commercial/industrial, and landscape. Loma Linda's landscape customers represent approximately four percent of the current metered services and 18 percent of the consumptive water use. These customers include parks, large commercial, community and institutional landscape areas, and schools. Over 90 percent of Loma Linda's customers are residential. The land use development trend within Loma Linda over the past 25 years has historically been from agriculture to residential. Water deliveries for each customer class for the years 2011 through 2015 are shown in Table 8-3.

Table 8-3. DWR Table 4-1R. Demands for Raw and Potable Water – Actual (AF)

Use Type	Level of Treatment When Delivered	2011	2012	2013	2014	2015
Single Family	Drinking Water	2,514	2,739	2,668	2,683	2,171
Multi-Family	Drinking Water	817	834	806	786	784
Commercial / Institutional	Drinking Water	652	607	547	582	530
Landscape	Drinking Water	800	921	820	926	659
Other	Drinking Water	15	0	0	0	0
Sales/Transfers/Exchanges to other agencies	Drinking Water	0	0	0	1	0
Nonrevenue	Drinking Water	626	677	744	548	538
	Total	5,423	5,778	5,586	5,525	4,682

In the past, Loma Linda has not had water use related to saline barriers, groundwater recharge operations, or recycled water. However, Loma Linda, like all water agencies does have some nonrevenue water. Nonrevenue water is the difference between the amount of water produced and the amount of water billed to customers. Over the last five years, nonrevenue water has been approximately thirteen percent of produced water within Loma Linda's system. However, investigation by the City into this loss rate has shown that a large portion of the loss is a paper loss due to reading and reporting anomalies. The percentage of nonrevenue water was estimated by comparing water production statistics to water sales statistics. Sources of nonrevenue water include:

- Hydrant Testing and Flushing - Hydrant testing is performed by both Loma Linda and the Fire Departments. Loma Linda and the Fire Departments perform a comprehensive testing program to monitor the level of fire flows available throughout the service area.
- Fire Hydrant Operations by the Fire Department - This represents the use of water for emergencies.
- Customer Meter Inaccuracies - Customer meters represent one of the main sources of nonrevenue water as they tend to under-represent actual consumption in the water system.
- Reservoir overflows - This represents unrecorded water use when reservoirs overflow.
- Leaky water lines - Leakage from water pipes is a common occurrence in water systems. A significant number of leaks remain undetected over long periods of time as they are very small; however, these small leaks contribute to the overall nonrevenue water.

Projected water use for 2020 through 2040 is shown in Table 8-4.

Table 8-4. DWR Table 4-2R. Demands for Raw and Potable Water – Projected (AF)

Use Type	Level of Treatment	2020	2025	2030	2035	2040
Single Family	Drinking Water	2,454	2,609	2,773	2,948	3,133
Multi-Family	Drinking Water	886	942	1,001	1,064	1,131
Commercial / Institutional	Drinking Water	600	637	677	720	765
Landscape	Drinking Water	745	792	841	894	951
Other	Drinking Water	0	0	0	0	0
Sales/Transfers/Exchanges to other agencies	Drinking Water	0	0	0	0	0
Nonrevenue	Drinking Water	515	548	582	619	658
Total		5,200	5,527	5,875	6,245	6,638

8.2.2 Distribution System Water Losses

The City monitors annually its nonrevenue water and runs a leak detection program. The program addresses customer requested reviews, nonrevenue water in the City system, and a valve exercise program to identify valves needing repair. The City estimated nonrevenue water to be at about 13 percent in 2015. Since then, some reading and reporting anomalies have been addressed and corrected. Therefore, Loma Linda has projected 11 percent nonrevenue water through 2040.

Loma Linda performed an AWWA Water Audit, attached in Appendix O, which determined the economic value of recovering the water loss, based on the avoided cost of water. The results of total water loss audit are summarized in Table 8-5. Loma Linda will continue its leak detection and main replacement program.

Table 8-5. DWR Table 4-4R. Water Loss Summary Most Recent 12 Month Period Available

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss (AF)
01/2015	479.9

8.2.3 Estimating Future Water Savings

Loma Linda is committed to long-range planning to provide a reliable, cost-effective water supply to its customers. Loma Linda actively monitors water consumption in its service area, in part to prepare required monthly reports for the State Water Resources Control Board.

For this report, Loma Linda has projected that future demands will increase at a percentage growth rate that incorporates two factors: the percentage growth in service area population, and potential changes in the per-capita consumption. This approach provides estimates for future system-wide demand that can be used for long-range planning.

In the 2015 UWMP, water suppliers have the option of preparing more detailed demand forecasts by estimating demand factors based on land use categories. For example, Loma Linda could identify typical water use per single family customer and per commercial account. These customer classes can be further sub-divided by lot size, neighborhood, or other variables. The intent is to quantify the estimated water use per customer in different customer classes, and then to forecast how future changes will impact water use within each customer class.

For this document, Loma Linda has elected not to develop land use-based demand factors and apply future savings from codes and standards. Recent drought regulations have induced significant changes in water consumption patterns, and there is considerable uncertainty as to how demands will change in the future if the drought subsides. Given this uncertainty, Loma Linda has elected not to quantify passive savings for this UWMP.

8.2.4 Water Use for Lower Income Households

Senate Bill 1087 requires that water use projections of an UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier. Loma Linda contains two jurisdictions, the City of Loma Linda and the unincorporated County of San Bernardino.

The City of Loma Linda updated its housing element in 2014. The housing element estimates that approximately 41 percent of all households in the City are “very-low” or “low” income. In the absence of more detailed information, this percentage was assumed to apply to households across the service area.

Table 8-6 shows the estimated future water demands for lower-income households. These demands have been included in the demand projections throughout this report.

Table 8-6. Estimated Demands for Lower-Income Households (AF)

Demand	2015	2020	2025	2030	2035	2040
Single Family Residential	881	996	1,059	1,126	1,197	1,272
Multi-Family Residential	318	360	382	406	432	459
Total	1,199	1,356	1,442	1,532	1,629	1,731

8.3 SB X7-7 Baselines and Targets

An urban retail water supplier must set a 2020 water use target (herein called the Compliance Water Use Target) and a 2015 interim target (herein called the Interim Water Use Target). Loma Linda had previously calculated baseline water use and water use targets in the 2010 RUWMP. However, for the 2015 UWMP, DWR has required that agencies use 2010 census data in the calculation of service area populations. Loma Linda has re-calculated its historic service area population using the DWR Population Tool, and in this section presents an updated calculation of baseline water use and water use targets.

DWR has prepared standardized tables to record and document the calculations required for this section. The standardized tables for Loma Linda's calculations are included in Appendix Q.

8.3.1 Baseline Water Use

Years 1999 to 2008 have been selected for calculation of the 10-year base period, while years 2004 to 2008 have been selected for calculation of the 5-year base period.

8.3.2 Service Area Population

Loma Linda's service area population was calculated using the DWR Population Tool. The GIS-based tool was used to intersect Loma Linda's service area with census data. The tool directly calculated a service area population for 1990, 2000, and 2010. Populations for intermediate years were calculated by assuming a constant growth rate between census years.

8.3.3 Gross Water Use

Because Loma Linda does not export water to other agencies, the gross water use is equal to the total amount of water produced.

8.3.4 2015 and 2020 Targets

DWR allows agencies to select from four potential methods for calculating the compliance and interim water use targets as set forth by Water Code section 10608.20(b). Loma Linda has selected Method 1, 80 percent of Base Daily Per Capita Water Use, to calculate the agency's 2020 Compliance Water Use Target and Interim Water Use Target. These calculations are summarized in Table 8-7.

Table 8-7. DWR Table 5-1R. Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline GPCD	2015 Interim Target	Confirmed 2020 Target
10-year	1999	2008	242	218	194
5-year	2004	2008	244		

8.3.5 2015 Compliance Daily per Capita Water Use

Based on 95 percent of the 5-year baseline average, the Maximum Allowable GPCD is 231. The Compliance Water Use Target under Method 1 is less than the Maximum Allowable GPCD, so no adjustments to the Compliance Water Use Target are necessary.

Loma Linda's calculated GPCD for 2015 is below the interim water use target. The results are summarized in Table 8-8.

Table 8-8. DWR Table 5-2R. 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Extra-ordinary Events	Economic Adjust-ment	Weather Normal-ization	Total Adjustments	Adjusted 2015 GPCD	2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015?
179	218	0	0	0	0	179	179	YES

8.4 Demand Management Measures

The reporting format for Demand Management Measures (DMMs) in the 2015 UWMP is different than the 2010 UWMP. This discussion has been arranged into the seven sections recommended by DWR in the 2015 UWMP Guidebook.

8.4.1 Water waste prevention ordinances

Loma Linda has enacted Municipal Code Title 13 in Chapter 13.32 Water-efficient Landscape. The code covers new and rehabilitated landscaping for public agencies and private developments requiring permits. The projects must document the following for approval: maximum applied water allowance, estimated applied water use, estimated water use, design plan, irrigation design, irrigation schedule, maintenance schedule, landscape audit, and provision for existing landscape. Decorative water should be recirculated. Additionally, Ordinance 443 (Municipal Code Title 13 in Chapter 13.04.940 to 13.04.1070) prohibits excessive use of water specifically targeting water wash downs, runoff, irrigation, and malfunctioning equipment. Service can be discontinued with excessive use. Both these ordinances support the criteria of this DMM; copies of these ordinances are provided in Appendix G.

8.4.2 Metering

All of the City's residential, commercial and industrial customers are metered and billed bi-monthly with tiered rates. Municipal customers are metered but not billed; the meter reading began for these customers in July 2009. The City has a meter maintenance and replacement program with replacements occurring every 10 years, larger meters every 5 years and annual calibration of the meters at the Veterans Administration Hospital. Over the past five years, the City has upgraded all meters to Automatic Meter Readers (AMR).

8.4.3 Conservation pricing

All of Loma Linda's retail customers are metered and billed with tiered rates bimonthly. A tiered rate structure is in place that charges per water unit based on total amount of water used during the billing cycle.

8.4.4 Public education and outreach

Loma Linda is beginning the implementation of a OmniEarth and Dropcountr collaboration program with Santa Ana Watershed Project Authority (SAWPA). This is a public outreach and educational program that targets the top 25 percent of water users and assist them in their efforts to reduce their water use.

8.4.5 Programs to assess and manage distribution system real loss

Loma Linda plans to complete the AWWA Water Audit worksheet annually to assess distribution system loss. Based on water loss analysis, upgrades to the distribution system will be scheduled and performed.

8.4.6 Water conservation program coordination and staffing support

Loma Linda participates in regional conservation efforts led by Valley District (iEfficient.com) and DWR (saveourwaterrebates.com).

8.4.7 Planned Implementation to Achieve Water Use Targets

Loma Linda's current per-capita consumption is less than its 2020 compliance target. Loma Linda expects to continue to implement its current conservation programs to encourage conservation and maintain per-capita consumption below the compliance target.

8.5 System Supplies

8.5.1 Purchased or Imported Water

Loma Linda has imported a small amount (1 – 2 AFY) of State Water Project (SWP) water from Valley District over the past five years (2011 – 2015). Loma Linda does not anticipate using SWP water as a future water supply source.

8.5.2 Groundwater

Loma Linda's primary source of water is groundwater wells within the upper Santa Ana River Basin. The City's six groundwater wells are located within the SBBA. Replenishment of the basin is from rainfall and snow melt from the surrounding mountains and imported water. Loma Linda current operates five wells, ranging in capacity from 1,000 to 3,300 gallons per minute (gpm), having a total effective production capacity of 9,050 gpm. A sixth well which yields 1,500 gpm is not utilized due to high levels of fluoride.

8.5.2.1 Historical Groundwater Pumping

The City of Loma Linda has facilities to extract water from the SBBA. Loma Linda's historical production for the past five years is shown in Table 8-9.

Table 8-9. DWR Table 6-1R. Groundwater Volume Pumped (AF)

Groundwater Type	Location or Basin Name	Water Quality	2011	2012	2013	2014	2015
Alluvial Basin	SBBA	Drinking Water	5,422	5,776	5,584	5,524	4,680
	Total		5,422	5,776	5,584	5,524	4,680

8.5.3 Surface Water

Loma Linda owns 1,020 shares of Bear Valley Mutual Water Company. In 2015, Loma Linda utilized 1.27 AF of water from Bear Valley. Bear Valley Mutual Water Company supplies come from the Santa Ana River and are affected by seasonal and annual variations. To estimate reliability, records from multiple precipitation gauges were reviewed.

8.5.4 Stormwater

Loma Linda is participating in regional planning efforts to capture additional stormwater for purposes of groundwater recharge.

8.5.5 Wastewater and Recycled Water

Loma Linda provides sewer line maintenance and collection services to its customers, while wastewater treatment services are provided under provisions outlined in a Joint Powers Agreement (JPA) with the City of San Bernardino.

8.5.5.1 Recycled Water Coordination

There is an active planning process to use RIX discharge for direct groundwater recharge and non-potable demands. However, the location of the plant makes providing water to customers upstream of the plant (e.g., Loma Linda) cost-prohibitive.

8.5.5.2 Wastewater Collection, Treatment, and Disposal

Wastewater from the Loma Linda service area is treated to secondary levels at the San Bernardino Water Reclamation Plant and to tertiary levels at the RIX Plant. In 1995, the City of San Bernardino began operation of RIX to provide treatment of up to 41 MGD of secondary effluent from the existing plants of the City of San Bernardino and the City of Colton. Currently the RIX plant discharges approximately 33 MGD for recharge to the Santa Ana River.

Table 8-10. DWR Table 6-2R. Wastewater Collected within Service Area in 2015

Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2015 (AF)	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
City of Loma Linda	Estimated	2,465	City of San Bernardino	San Bernardino Water Reclamation Plant	No	No
	Total Wastewater Collected from Service Area in 2015	2,465				

8.5.5.3 Actions to Encourage and Optimize Future Recycled Water Use

The City of Redlands and Loma Linda are examining the potential price of providing recycled water to Loma Linda. If recycled water is cost effective, Loma Linda would encourage the use of non-potable water at facilities such as schools, parks, community centers, car washes and churches. However, use of recycled water in Loma Linda is still in the evaluation stage and at this time recycled water is not accounted for as a potential future supply for Loma Linda.

Table 8-11. DWR Table 6-6R. Methods to Expand Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Planning	Continue evaluating potential use of recycled water	2020	Not yet defined

8.5.6 Exchanges or Transfers

Loma Linda has several connections to local water systems, including the City of San Bernardino, the City of Redlands and the Loma Linda University which could provide short-term water supplies. The emergency connection with the City of Redlands can yield approximately 507 AFY (314 gpm) to Loma Linda. Loma Linda has two emergency supply connections with the City of San Bernardino, to receive up to 4,033 AFY of water. These connections are available only on an as-needed basis if the water supply is available, and cannot be counted as firm supply capacity. Loma Linda has also installed an interconnection with the Loma Linda University water system as an emergency connection only. There exists no formal agreement for the exchange of water between the City to the University; however, the connection is metered to monitor any exchange of water.

8.5.7 Desalinated Water Opportunities

The need for brackish groundwater desalting is somewhat limited in the San Bernardino Valley. While elevated salts are a concern in the groundwater basins of the Western Judgment (SBBA, Rialto-Colton, Riverside), average TDS levels in all of these basins are currently below 500 mg/L (DWR 2003). However, elevated salts are an issue for retailers that overlie the San Timoteo Groundwater Basin and agencies in this basin are considering implementing desalter operations. The area is fortunate to have a brine line which can transport non-reclaimable waste, by gravity, from the City of San Bernardino Water Reclamation Plant to the Orange County Sanitation District's treatment plant.

The development of (or financial participation in) a new seawater desalination project, while costly, is being investigated by other wholesale and retail water agencies in southern California. Because the San Bernardino Valley is an inland area, in order for desalination to work it would be necessary for agencies in the San Bernardino Valley to join with other water purveyors in the development of a coastal desalination facility and then receive water from the SWP supplies of other participants via an exchange. It is not cost-effective for the San Bernardino Valley to receive direct delivery of desalted ocean water.

Seawater desalination is an alternative that is technically viable. However, production and treatment costs have historically been several times higher than those of SWP costs and conventional treatment.

8.5.8 Future Water Projects

There are currently no planned water supply projects within the Loma Linda service area.

8.5.9 Summary of Existing and Planned Sources of Water

Loma Linda anticipates utilizing a water system almost exclusively supported by groundwater produced by the City of Loma Linda. The groundwater will be supplemented by a small amount (less than a percent) of surface water. Current and projected water supply amounts are shown in Table 8-12 and Table 8-13.

Table 8-12. DWR Table 6-8R. Water Supplies - Actual

Water Supply	Additional Detail on Water Supply	2015 Actual Volume (AF)	2015 Water Quality
Groundwater	SBBA	4,680	Drinking Water
Purchased or Imported Water	Valley District	1	Drinking Water
	Total	4,682	

Table 8-13. DWR Table 6-9R. Water Supplies – Projected (AF)

Water Supply	Additional Detail on Water Supply	2020	2025	2030	2035	2040
Groundwater	SBBA	6,418	6,814	7,236	7,683	7,683
Purchased or Imported Water	Valley District	0	0	0	0	0
	Total	6,418	6,814	7,236	7,683	7,683

8.6 Water Supply Reliability Assessment

8.6.1 Constraints on Water Sources

In the past Loma Linda's groundwater supply was impacted by perchlorate from the Redlands-Crafton Plume. The Lockheed Martin Corporation replaced the two Loma Linda wells impaired by perchlorate with two new wells that include wellhead treatment. The City has also had to carefully monitor high arsenic, fluoride, and DBCP in well water. To address arsenic in City water, an arsenic removal facility was installed, providing treatment to two wells. Water from the various wells is blended to further dilute any contaminants and to achieve all applicable health and safety standards.

In addition to groundwater wells, Loma Linda also has various interconnections with adjacent water systems such as the University of Loma Linda, the City of San Bernardino and the City of Redlands, to assist in alleviating localized problems should they arise. Based on current conditions water quality is not anticipated to affect Loma Linda's supply reliability. However, water quality issues are constantly evolving. Loma Linda will take action to protect and treat supply when needed, but it is well recognized water quality treatment can have significant costs.

8.6.2 Reliability by Type of Year

The SBBA is adjudicated on a safe yield basis. Loma Linda therefore has the opportunity to develop additional wells and over-extract groundwater under specified conditions contained in the Western Judgment. The wells in general have provided a stable source of water supply. Extensive modeling has been used to examine groundwater recharge, groundwater pumping, basin storage, groundwater flow,

and groundwater plume location and plume migration. Based on these studies, it is anticipated that groundwater pumping by Loma Linda and other SBBA users in the Valley District service area will not be reduced or curtailed during a single-dry or multi-dry year.

8.6.3 Regional Supply Reliability

Loma Linda is committed to minimizing the need to import water from other regions. Loma Linda operates a number of conservation programs to implement various Demand Management Measures.

8.7 Water Shortage Contingency Planning

Water supplies may be interrupted or reduced significantly in a number of ways, such as drought which limits supplies, an earthquake which damages delivery or storage facilities, or a regional power outage. An earlier chapter described water shortage contingency planning for regional water supply sources (imported water, groundwater). This section focuses on water shortage contingency planning for Loma Linda.

8.7.1 Stages of Action

Loma Linda's municipal Chapter 13.04 along with Ordinance 443, attached in Appendix G, outlines a three-stage action plan that includes voluntary and mandatory stages of action to be implemented during a water shortage. The key elements are described below along with an outline of specific water supply conditions which are applicable to each stage and the various restrictions and prohibitions included in the ordinance.

8.7.1.1 Stage 1 - Normal Conditions - Voluntary Conservation Measures

Normal conditions shall be in effect when Loma Linda is able to meet all the water demands of its customers in the immediate future. During normal conditions, all water users should continue to use water wisely, to prevent the waste or unreasonable use of water, and to reduce water consumption to that necessary for ordinary domestic and commercial purposes.

8.7.1.2 Stage 2 - Threatened Water Supply Shortage

In the event of a threatened water supply shortage which could affect Loma Linda's ability to provide water for ordinary domestic and commercial uses, the City Council shall hold a public hearing at which consumers of the water supply shall have the opportunity to protest and to present their respective needs to Loma Linda. The City Council may then, by resolution, declare a water shortage condition to prevail, and the following conservation measures shall be in effect.

8.7.1.3 Stage 3 - Water Shortage Emergency - Mandatory Conservation Measures

In the event of a water shortage emergency in which Loma Linda may be prevented from meeting the water demands of its customers, the City Council shall, if possible given the time and circumstances, immediately hold a public hearing at which customers of Loma Linda shall have the opportunity to protest and to present their respective needs to the City Council. No public hearing shall be required in the event of a breakage or failure of a pump, pipeline, or conduit causing an immediate emergency. The Director of Public Services is empowered to declare a water shortage emergency, subject to the ratification of the City Council within seventy-two hours of such declaration.

Table 8-14. DWR Table 8-1R. Stages of WSCP

Stage	Percent Supply Reduction	Water Supply Condition
1	0	Normal Conditions
2	25	Threatened Water Supply Shortage
3	50	Water Shortage Emergency

8.7.2 Prohibitions on End Uses

The water use prohibitions for each stage are shown in Table 8-15.

Table 8-15. DWR Table 8-2R. Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	CII - Restaurants may only serve water upon request	Restaurants are requested not to provide drinking water to patrons except by request.	Yes
2	Landscape - Limit landscape irrigation to specific days	Upon notice and public hearing, Loma Linda may determine that the irrigation of exterior vegetation shall be conducted only during specified hours and/or days, and may impose other restrictions on the use of water for such irrigation. The irrigation of exterior vegetation at other than these times shall be considered to be a waste of water.	Yes
2	Landscape - Limit landscape irrigation to specific times	Public and private parks, golf courses, swimming pools and school grounds which use water provided by Loma Linda shall use water for irrigation and pool filling between the hours of 6 P.M. and 6 A.M.	Yes
2	Landscape - Other landscape restriction or prohibition	Persons receiving water from the Loma Linda who are engaged in commercial agricultural practices, whether for the purpose of crop production or growing of ornamental plants shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. Upon the request of the director of public services, these persons may be required to prepare a plan describing their irrigation practices and equipment, including but not limited to, an estimate of the efficiency of the use of water on their properties.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	Landscape - Other landscape restriction or prohibition	Commercial and industrial facilities shall, upon request of the director of public services, provide Loma Linda with a plan to conserve water at their facilities. Loma Linda will provide these facilities with information regarding the average monthly water use by the facility for the last two-year period. The facility will be expected to provide Loma Linda with a plan to conserve or reduce the amount of water used by that percentage deemed by the City Council to be necessary under the circumstances. After review and approval by the director of public services, the water conservation plan shall be considered subject to inspection and enforcement by Loma Linda.	Yes
2	Landscape - Restrict or prohibit runoff from landscape irrigation	No customer of the Loma Linda or other person acting on behalf of or under the direction of a customer shall cause or permit the use of water for irrigation of landscaping or other outdoor vegetation, plantings, lawns or other growth, to exceed the amount required to provide reasonable or excessive waste of water from such irrigation activities or from watering devices or systems. The free flow of water away from an irrigated site shall be presumptively considered excessive irrigation and waste as defined.	Yes
2	Other - Prohibit use of potable water for washing hard surfaces	No water provided by Loma Linda shall he used for the purposes of Wash down of impervious areas without specific written authorization of the director of public services. Any water used on all premises that is allowed to escape the premises and run off into gutters or storm drains shall be considered a waste of water.	Yes
2	Other - Require automatic shut of hoses	The washing of cars, trucks or other vehicles is not permitted, except with a hose equipped with an automatic shut-off device, or at a commercial facility designated and so designated on Loma Linda's billing records.	Yes
2	Pools and Spas - Require covers for pools and spas	All residential, public and recreational swimming pools, of all sizes, shall use evaporation resistant covers and shall re-circulate water. Any swimming pool which does not have a cover installed during periods of non-use shall be considered a waste of water.	Yes
3	CII - Restaurants may only serve water upon request	Restaurants shall not serve drinking water to patrons except by request.	Yes
3	Landscape - Prohibit all landscape irrigation	Watering of parks, school grounds, golf courses, lawn watering, and landscape irrigation is prohibited.	Yes
3	Landscape - Prohibit certain types of landscape irrigation	Commercial nurseries shall discontinue all watering and irrigation. Watering of livestock is permitted as necessary.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3	Other - Prohibit use of potable water for construction and dust control	No new construction meter permits shall be issued by Loma Linda. All existing construction meters shall be removed and/or locked.	Yes
3	Other - Prohibit use of potable water for washing hard surfaces	Washing down of driveways, parking lots or other impervious surfaces is prohibited.	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Washing of vehicles, except when done by commercial car wash establishments using only recycled or reclaimed water is prohibited.	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	Filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes are prohibited.	Yes

8.7.3 Penalties, Charges, Other Enforcement of Prohibitions

Provisions of Ordinance No. 443, Section 16 Water Conservation, prohibit the watering of parks, school grounds, golf courses, lawn washing, landscape irrigation, wash-down of driveways, parking lots or other impervious surfaces, washing of vehicles, except when done by commercial car wash establishments using only recycled or reclaimed water, filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes. Penalties and charges for excessive use are the heart of Ordinance 443 and the strongest incentive for conservation among the users. Service may be terminated to any customer who knowingly and willfully violates any provision of the Water Shortage Plan and Ordinance 443. In addition, civil action penalties by Loma Linda can be enacted as summarized below:

- First Violation – Issuance of written notice of violation of water user.
- Second Violation – A $100 surcharge is imposed on the water meter.
- Third Violation – A $200 surcharge and/or installation of a flow restrictor on the water meter.
- Subsequent Violations – Discontinuance of service.

8.7.4 Consumption Reduction Methods

The consumption reduction methods for each stage are shown in Table 8-16.

Table 8-16. DWR Table 8-3R. Stages of WSCP - Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
2	Other	Commercial and industrial facility education on water use.

8.7.5 Determining Water Shortage Reductions

During water shortage, Loma Linda's Director of Public Services will monitor the supply and demand for water on a daily basis to determine the level of conservation required by the implementation or termination of the water conservation plan stages and will notify the City Council of the necessity for the implementation or termination of each stage if a shortage condition occurs. Each declaration of the City Council implementing or terminating a water conservation stage shall be published at least once in a newspaper of general circulation, and shall be posted at the City's offices. In normal water supply conditions, production figures are recorded daily. Totals are recorded daily on a continuous computerized monitoring system to the Water Department Supervisor. Totals are reported monthly to the City Administrator and incorporated into the water supply report to the Utilities Commission. During a Stage 2 and Stage 3 water shortage, daily production figures will be reported to the Water Department Supervisor. The Supervisor compares the daily production to the target daily production to verify that the reduction goal is being met. Reports are forwarded to the City Administration on an as-needed basis, continuously if appropriate. Monthly reports are sent to the Utility Commission. If reduction goals are not met, the Administrator will notify the City Council so that additional action can be taken.

8.7.6 Revenue and Expenditure Impacts

Revenues will be impacted when reduced water sales during the various stages as set forth in Loma Linda's Water Shortage Contingency Plan are initiated. In order to minimize the financial impact this would have on Loma Linda, the monthly fixed revenues (monthly meter charges) need to cover the majority of the fixed costs of the Loma Linda's water system during such an event. The fixed costs are incurred by Loma Linda regardless of how much or when it delivers water to the customer. These costs generally include administration, personnel, billing, testing, maintenance, meter maintenance, pipeline and facility replacements. Expenditures during periods of drought may be impacted by additional staffing or advertising costs. Expenses such as capital improvements may be deferred during this reduction in sales when feasible.

Loma Linda, which produces all of the water consumed by its customers, will not have the added cost of a more expensive purchased water source. In order to mitigate the financial impacts of a water shortage, Loma Linda maintains excess funds in the Water Enterprise Fund (Fund). This Fund is used for all operations associated with the running of the water system. Part of the Fund can be used to stabilize rates during periods of water shortage or disasters affecting the water supply.

Even with the additional monies in the Fund, rate increases may be necessary during a prolonged water shortage. Loma Linda may wish to increase the fixed monthly meter service charge to cover the shortfall in revenue resulting from the decrease in water sales during a water shortage. The additional revenues would also help to cover any increased operating and water expenses that occur. After an extended water shortage, water revenues are expected to fall below pre-shortage levels. The water use is projected at 90 percent of the pre-shortage use, which could result in a reduction of revenue during the twelve-month period after the end of a water supply shortage.

8.7.7 Resolution or Ordinance

Loma Linda's Municipal Chapter 13.04 along with Ordinance 443 outlines the Water Shortage Contingency Plan. The Ordinance provides for exceptions under certain circumstances, establishes enforcement provisions, defines the methods for declaring and terminating water conservation stages, and provides for the form of notices and decisions of the City Council.

8.7.8 Catastrophic Supply Interruption

Extended multi-week supply shortages due to natural disasters or accidents which damage all water sources are unlikely, but would be severe if more than one of Linda Loma's wells were out of service. The City's storage reservoirs hold 14.9 MG, which is sufficient treated water to meet the health and safety requirements of fifty gallons per person for 23,000 people for 12 days. This assumes zero non-residential use. In the event of a power shortage, Loma Linda has two portable backup generators at their disposal they can utilize to provide supply from one well and boosting within the distribution system. The City also has interconnections with the City of San Bernardino and the City of Redlands for emergency supplies as well as the Loma Linda University water system as an emergency connection. There is no formal agreement for the exchange of water between the City and the University; however, the connection is metered to monitor any exchange of water between the two entities.

8.7.9 Minimum Supply Next Three Years

The UWMP Act requires a retailer to quantify the minimum water supply available during the years 2016 to 2018, assuming years 2016 to 2018 repeat the driest three-year historic sequence for each water supply source. This estimate is shown in Table 8-17. Comparing these supplies to the demand projections, Loma Linda has adequate supplies available to meet projected demands should a multiple-dry year period occur during the next three years.

Table 8-17. DWR Table 8-4R. Minimum Supply Next Three Years (AF)

Available Water Supply	2016	2017	2018
Available Water Supply	6,418	6,418	6,418

8.8 Supply and Demand Assessment

The estimated projected demands are anticipated to be met by projected supply past 2040.

Normal year total supplies and demands are shown in Table 8-18.

Table 8-18. DWR Table 7-2R. Normal Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	6,418	6,814	7,236	7,683	7,683
Demand Totals	5,200	5,527	5,875	6,245	6,638
Difference	1,218	1,287	1,361	1,438	1,045

There is a historical trend associated with drier years and an increase in water use among agencies. While conservation efforts have proven to be effective in decreasing water use in dry years, such as the past three years, Loma Linda has decided to project demands using a ten-percent increase during single and multiple dry years.

These single and multiple dry year demands and supplies are shown in Table 8-19 and Table 8-20.

Table 8-19. DWR Table 7-3R. Single Dry Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	6,418	6,814	7,236	7,683	7,683
Demand Totals	5,720	6,080	6,463	6,869	7,302
Difference	698	734	773	814	381

Table 8-20. DWR Table 7-4R. Multiple Dry Years Supply and Demand Comparison (AF)

Year	Totals	2020	2025	2030	2035	2040
First Year	Supply Totals	6,418	6,814	7,236	7,683	7,683
	Demand Totals	5,720	6,080	6,463	6,869	7,302
	Difference	698	734	773	814	381
Second Year	Supply Totals	6,418	6,814	7,236	7,683	7,683
	Demand Totals	5,720	6,080	6,463	6,869	7,302
	Difference	698	734	773	814	381
Third Year	Supply Totals	6,418	6,814	7,236	7,683	7,683
	Demand Totals	5,720	6,080	6,463	6,869	7,302
	Difference	698	734	773	814	381

9 City of Redlands

9.1 Basis for Preparing a Plan

The Urban Water Management Planning Act requires urban water suppliers to conduct long term resource planning for current and anticipated demands of multiple hydrologic year type. The California Water Code, Section 10617 defines an urban water supplier as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. The City of Redlands (City) currently serves approximately 24,000 customers with a 5-year average potable water demand of 26,165 acre feet per year and has developed its 2015 Urban Water Management Plan (UWMP) to ensure that demands are met for both current and future customers in spite of California's ongoing drought conditions and expected long-term climate changes.

Table 9-1. DWR Table 2-1R. Public Water System Information

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015 (AF)
CA3610037	City of Redlands	24,864	23,038
	Total	24,864	23,038

9.1.1 Individual or Regional Planning and Compliance

Table 9-2. DWR Table 2-2. Plan Identification

Selection	Type of Plan	Name of RUWMP or Regional Alliance
	Individual UWMP	
X	Regional Urban Water Management Plan (RUWMP)	San Bernardino Valley Municipal Water District

9.1.2 Fiscal or Calendar Year and Units of Measure

Table 9-3. DWR Table 2-3. Agency Identification

Type of Agency	Redlands is a Retailer
Fiscal or Calendar Year	UWMP Tables are in Calendar Years
Unit	AF

9.1.3 Coordination and Outreach

Table 9-4. DWR Table 2-4R. Water Supplier Information Exchange

Wholesale Water Supplier Name
San Bernardino Valley Municipal Water District

9.2 System Description

9.2.1 General Description

The City has provided water services to the community since 1910. Currently, the City provides water to a population of approximately 85,000 within its service area via approximately 24,000 water connections. The water utility service area generally coincides with the area designated by LAFCO as the City's sphere of influence. The service area encompasses 36 square miles inside the City's corporate boundaries and approximately 5,000 persons outside City boundaries but within the sphere of influence also receive City services. Water use is largely attributed to landscape irrigation due to arid climate and large residential lots.

A small part in the southeastern section of the City is currently served by Western Heights Mutual Water Company and is not part of this UWMP. Figure 9-1 shows the City boundary and the City's water service area.

Currently, the majority of water is obtained from the Santa Ana River, Mill Creek, and groundwater. The City operates two surface water treatment plants, 20 wells, 37 booster pumps, 18 reservoirs, and 400 miles of transmission and distribution lines to provide water to its customers. The City also owns other facilities that are currently not in use due to age, contamination, or other factors. Water used in the service area is metered and billed bimonthly.

The recycled water system is shown in Figure 9-2, and the non-potable water system is shown in Figure 9-3.

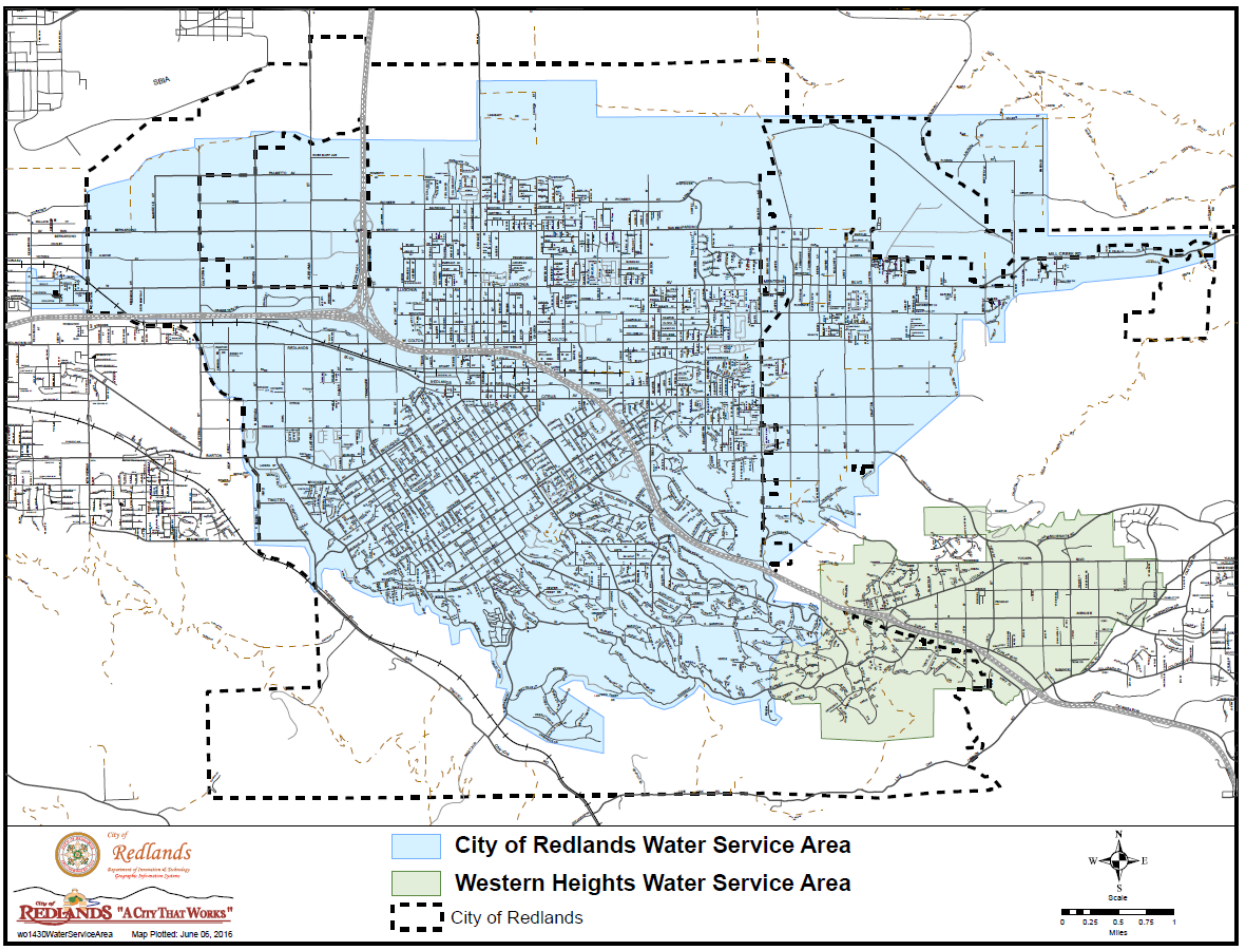


Figure 9-1. City of Redlands City Boundary and Planning Limits Map

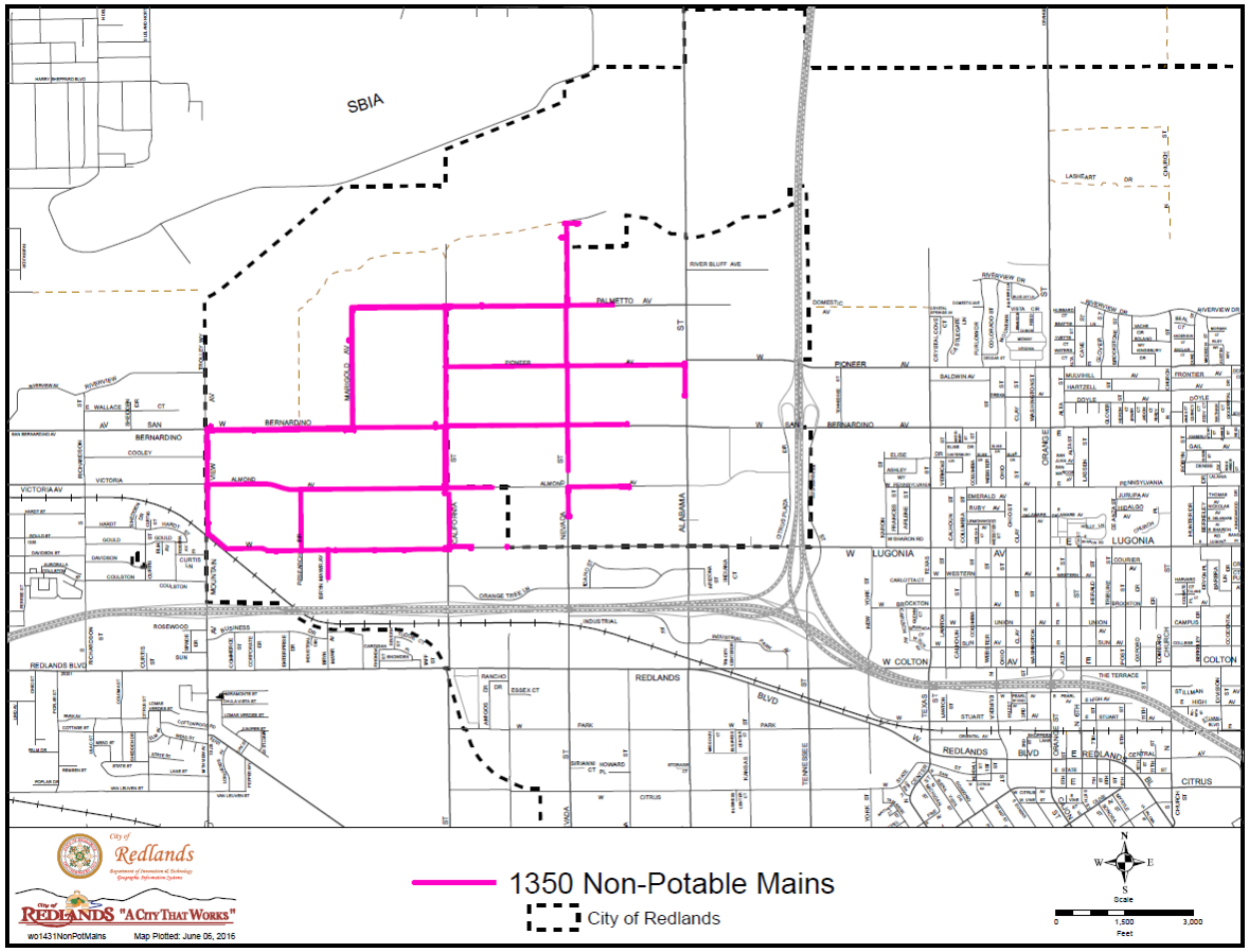


Figure 9-2. City of Redlands Recycled Water System (1350 zone)

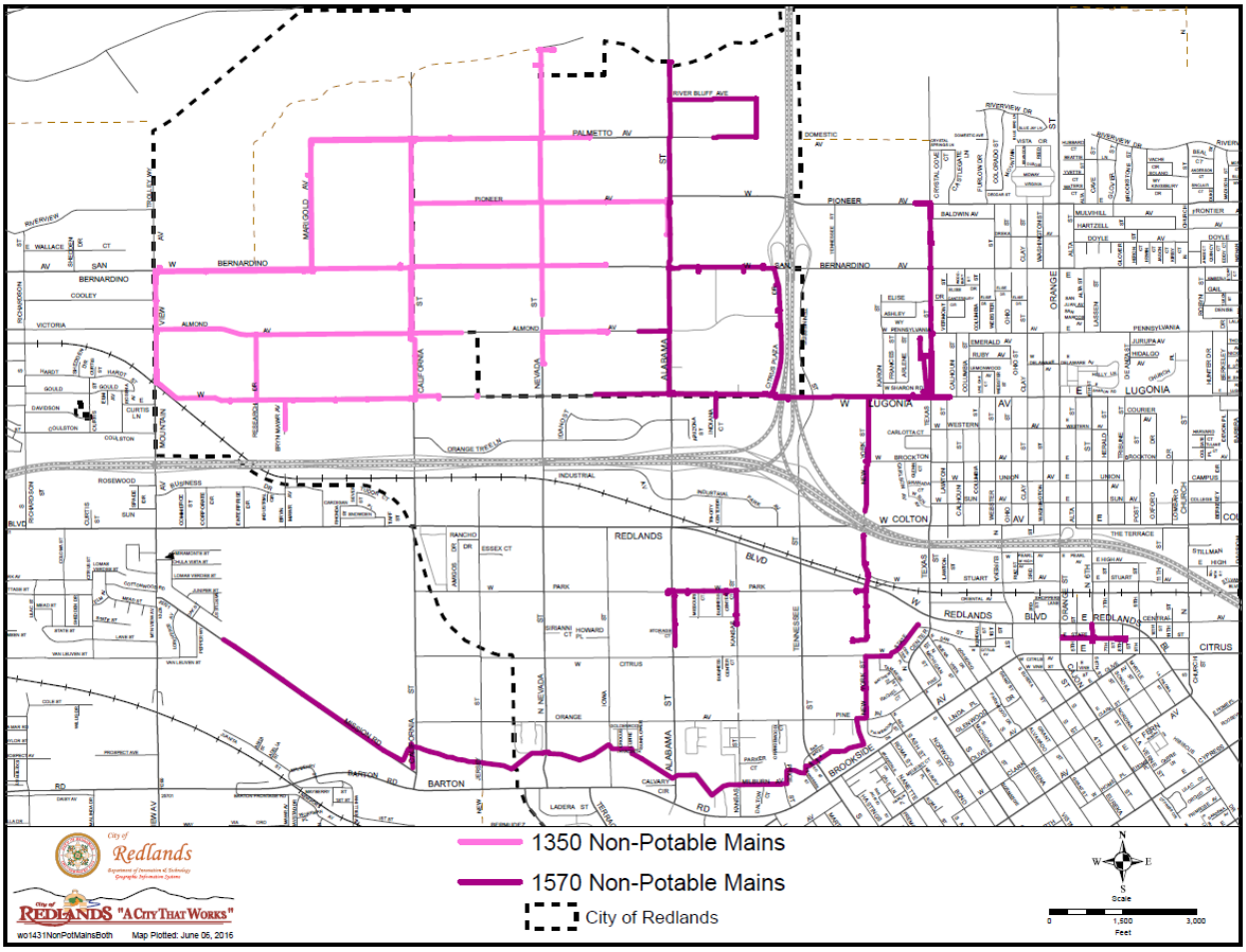


Figure 9-3. City of Redlands Non Potable Water System (1350 and 1570 zone)

9.2.2 Service Area Climate

The climate of the City and surrounding areas of the San Bernardino Mountains and foothills are characterized by relatively hot, dry summers and cool winters with intermittent precipitation. Annual rainfall precipitation varies from an average of approximately 13 inches in the lower elevation areas, where the City is located, to an average of approximately 20 inches at the base of the San Bernardino Mountains, to more than 35 inches along the crest of the mountains. The largest portion (73%) of average annual precipitation occurs during December through March, and rainless periods of several months are common in the summer. Precipitation is nearly always in the form of rain in lower elevations and mostly in the form of snow above about 6,000 feet mean sea level in the San Bernardino Mountains.

Table 9-5 summarizes climate conditions in the City's service area. Data was collected from the Western Regional Climate Center and the California Irrigation Management Information System. The weather station used is NCDC COOP # 047306 and the reference evapotranspiration information can be found at www.cimis.water.ca.gov.

Table 9-5. Historical Climate Data

	Jan	Feb	Mar	Apr	May	Jun
Standard Monthly Average ETo	2.17	2.80	4.03	5.10	5.89	6.60
Average Rainfall (in.)	2.68	2.64	2.28	1.17	0.47	0.10
Average Temperature (F)	52.1	53.7	56.35	60.3	64.9	71

	Jul	Aug	Sept	Oct	Nov	Dec
Standard Monthly Average ETo	7.44	6.82	5.70	4.03	2.70	1.86
Average Rainfall (in.)	0.07	0.15	0.28	0.69	1.13	1.89
Average Temperature (F)	77.4	77.5	73.9	66.15	58.3	52.7

ETo= Reference evapotranspiration

9.2.2.1 Climate Change

According to the 2015 Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP), with climate changing, high elevation ecosystems are decreasing and the severity of future floods is likely to increase. The City has a long history of flooding during moderate to severe storm events. Causes of flooding include both local and regional storm drain deficiencies. The main cause of flooding is lack of conveyance capacities in three of the City's largest storm drainage systems, one receiving more than triple its capacity of 2,400 cubic feet per second. The City does recognize the need for infrastructure due to insufficient size and age, however, availability of funding has hindered the construction of improvements. The City does complete small, immediate replacements where warranted, and has developed several plans outlining the needs for additional storm drains.

To identify needed infrastructure and better prepare for funding opportunities, which are continually pursued, in 2014 the City completed the *City of Redlands Master Plan of Storm Drainage*. The plan highlights infrastructure improvement priorities; cost of implementing needed facilities and provides a comprehensive long–range plan for implementation and development of drainage facility

improvements. More information on the plan can be found at www.cityofredlands.org/floodcontrolmasterplan.

Additionally, the City completed a Climate Change Vulnerability Assessment and found that flooding has the greatest potential impact on City water supplies. Ecosystem and habitat vulnerability have significant impacts on the region as a whole and is addressed in Chapter 1.

9.2.3 Service Area Population and Demographics

The City was incorporated in 1888 and developed from its origin as an agricultural area. The early 1900s saw a doubling of the population. Between 1910 and 1920, the population of the City actually decreased by 5 percent; however, from 1950 to 1990, it steadily grew with population increases at or above 20 percent in each decade. In recent years, that rate of growth has slowed. The City manages growth through three measures: R, N, and U. In November 1987, Measure N, a local ballot measure, was approved to establish the annual maximum number of dwelling units that can be added each year both inside and outside of Redlands limits. Measure N amended a previous initiative, Proposition R, which was approved in November 1978. As amended by Measure N, Proposition R, a zoning ordinance, allows a maximum of 400 dwelling units to be added to the City each year. Up to 50 of the units are to be single-family homes on existing lots, with the remainder to be allocated according to a point system. Additionally, Measure N provides that sewer or water service may be extended to an additional 150 units per year within the Sphere of Influence (SOI). In any given year, if fewer units are approved or constructed, the unused number is not carried forward to any future year. Measure U, approved in December 1997, further manages growth through such policies as fixing the number of land use categories, prohibiting transfers of density, development fee policy, preservation of non-urban lands, and others. Table 9-6 shows current and projected population over the next 20 years using the City's General Plan build out estimate for 2035. The 2015 service area population was determined using the methodology provided by DWR found in the *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use Guidebook*, Methodology 2; and DWR's population tool.

Table 9-6. DWR Table 3-1R. Current and Projected Population

Population Served	2015	2020	2025	2030	2035	2040
	85,276	87,707	90,138	92,569	95,000	95,000

9.3 System Water Use

9.3.1 Water Uses by Sector

Demand projections were estimated using the City's 2015 water use by sector data, available through the City's billing software. Gallons per capita, per day (GPCD) was determined using the following calculation:

GPCD = Total Water Use x Population x Days Per Year/ Gallons per Acre-Foot

GPCD was then multiplied by projected population for that year, to determine total water use:

Total Water Use = GPCD x Population

The 2015 percentages of water use by sector were assumed for projected years:

Total Water Use for Year x 2015 Percentage Water Use by Sector= Projected Water Use by Sector

Table 9-7. DWR Table 4-1R. Demands for Raw and Potable Water – Actual (AF)

Use Type	Level of Treatment When Delivered	2015
Single Family	Drinking Water	11,653
Multi-Family	Drinking Water	2,853
Commercial	Drinking Water	2,055
Institutional/Governmental	Drinking Water	1,308
Institutional/Governmental	Raw Water	94
Landscape	Drinking Water	1,614
Landscape	Raw Water	1,191
Agricultural irrigation	Drinking Water	182
Other	Drinking Water	340
	Total	21,290

Table 9-8. DWR Table 4-2R. Demands for Raw and Potable Water – Projected (AF)

Use Type	Level of Treatment	2020	2025	2030	2035	2040
Single Family	Drinking Water	15,318	15,743	16,168	16,592	16,592
Multi-Family	Drinking Water	3,750	3,854	3,958	4,062	4,062
Commercial	Drinking Water	2,701	2,776	2,851	2,926	2,926
Institutional/Governmental	Drinking Water	1,719	1,767	1,815	1,862	1,862
Institutional/Governmental	Raw Water	124	127	130	134	134
Landscape	Drinking Water	2,122	2,181	2,239	2,298	2,298
Landscape	Raw Water	1,566	1,609	1,652	1,696	1,696
Agricultural irrigation	Drinking Water	239	246	253	259	259
Other	Drinking Water	447	459	472	484	484
Total		27,986	28,762	29,538	30,313	30,313

Table 9-9. DWR Table 4-3R. Total Water Demands (AF)

Demand	2015	2020	2025	2030	2035	2040
Potable and Raw Water	21,290	27,986	28,762	29,538	30,313	30,313
Recycled Water	3,032	5,152	5,402	5,402	5,402	5,402
Total Water Demand	24,322	33,138	34,164	34,940	35,715	35,715

9.3.2 Distribution System Water Losses

The City prepared a water loss audit using the DWR methodology. The results are summarized in Table 9-10.

Table 9-10. DWR Table 4-4R. Water Loss Summary Most Recent 12 Month Period Available

Reporting Period Start Date	Volume of Water Loss
01/2015	1,490.1

9.3.3 Estimating Future Water Savings

In determining demands for potable and raw water use projections, future water savings were taken into account. The City is currently updating its General Plan and recently completed the 2016 water and wastewater rate analysis, where water savings for the next 5 years were included in the rate model. These reports were used when estimating future water savings.

9.3.4 Water Use for Lower Income Households

All growth, including projected water use for single-family and multifamily residential housing needed for lower income households, is included within growth projections.

9.4 SBX 7-7 Baselines and Targets

9.4.1 Updating Calculations from 2010 UWMP

With the adoption of the Water Conservation Act of 2009, also known as SB X7-7, retail urban water suppliers are required to establish targets to reduce urban water use 20 percent by year 2020. To establish an urban target water use for year 2020 in the 2010 UWMP, water suppliers were required to determine a baseline water use using a 10-15 year period then calculate average water use in GPCD, over that length of time. In this UWMP a calculated water use, in GPCD, for a 5-year baseline period was also required and used to confirm the selected 2020 target met minimum water use reduction requirements.

For this UWMP, DWR has allowed water agencies to recalculate their 2020 urban water use target (2020 target), but requires use of U.S. Census Data for years 2000 and 2010 to recalculate baseline population, which the City has completed using the DWR's Population Tool. The years 1999-2008 were selected for calculation of a 10-year base period. Water agencies were also allowed to choose a different method to determine the 2020 target. To maintain consistency with the City's 2010 target method, the City chose to reuse *Target Method 1: 80 percent of 10- to 15- Year Baseline GPCD*. Using this method it was determined the revised baseline water use is 356 GPCD and the 2020 target is 285 GPCD which differs slightly from the 2010 UWMP baseline of 370 GPCD and a 2020 target of 296 GPCD.

Water agencies were also required to calculate water use, in GPCD, for a 5-year baseline period to confirm the selected 2020 target meets minimum water use reduction requirements. Using years 2003-2007, the calculated average water use is 355 GPCD.

To demonstrate agencies are on track to achieve their 2020 target, a 2015 interim urban water use target was required (2015 target). The 2015 target is the value halfway between the 10-year baseline GPCD and the confirmed 2020 target, which is 320 GPCD. The City's actual 2015 water use in GPCD is 234, indicating the City has successfully met the obligations of the 2009 Water Conservation Act and surpassed both its 2015 and 2020 target.

DWR has prepared standardized tables to record and document the calculations required for this section and are included in Appendix Q. A summary of the data is provided in Table 9-11.

Table 9-11. DWR Table 5-1R. Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline GPCD	2015 Interim Target	Confirmed 2020 Target
10-Year	1999	2008	356	320	285
5-Year	2003	2007	355		

Table 9-12. DWR Table 5-2R. 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Extra-ordinary Events	Economic Adjust-ment	Weather Normal-ization	Total Adjustments	Adjusted 2015 GPCD	2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015?
234	320	0	0	0	0	234	234	YES

9.5 System Supplies

The City has four sources of water to provide to its service area: Purchased imported water, groundwater, surface water and recycled water.

9.5.1 Purchased or Imported Water

Imported water from the State Water Project (SWP) is available through the City's wholesale water supplier, San Bernardino Valley Municipal Water District (Valley District). Valley District is a state water contractor with annual entitlement to SWP water of 102,600 AF. The City has purchased supplemental SWP water only in years when surface flows have not been able to meet demands and on occasion when surface water supplies are turbid and require blending. The City will continue to request SWP water in these situations, but fully understands its obligation to have backup capacity and conservation measures in place during SWP outages or extended dry periods. Further, in extremely dry periods, the State has had allocations of zero. If this condition occurs in a future year when the City desires SWP water, groundwater resources will be utilized in addition to aggressive conservation measures, if needed, to satisfy and reduce demands. Additionally, because of steps set forth in the IRWMP, it is expected the groundwater basin will be subsequently recharged with SWP water or native water in wet years when excess water is available. Based on a 10-year average, purchased imported water, used by the City at its treatment plants, totals 3% of the City's annual water production.

9.5.2 Groundwater

The City can produce water from the Bunker Hill Subbasin (also known as San Bernardino Basin Area or SBBA) and Yucaipa Subbasin. The Upper Santa Ana Valley Groundwater Basin is an alluvial groundwater basin fed by multiple tributaries, including the Santa Ana River and Mill Creek, both located within the

City's service area. The Bunker Hill Subbasin ("Bunker Hill") has a surface area of approximately 89,600 acres and a groundwater storage capacity of 5,976,000 acre-feet. Based on a 10-year average, groundwater from Bunker Hill totals 51.1% of the City's annual water production. The Yucaipa Subbasin has a surface area of 25,300 acres and a groundwater storage capacity of 808,000 acre-feet. Figure 2-2 in Chapter 2 is a map of Upper Santa Ana Valley Groundwater Basin and boundaries of both subbasins.

9.5.2.1 Bunker Hill Subbasin/ SBBA

The SBBA is governed by a court action from 1969 called the Western Judgment, to which the City is stipulated. Provisions of the physical solution set forth in the Judgment Case No. 78426, Western Municipal Water District of Riverside County et al., vs. East San Bernardino County Water District et al., entered April 17, 1969, in the Superior Court of the State of California in and for the County of Riverside, established the entitlements and obligations of Valley District and Western Municipal Water District (WMWD) with regard to the Bunker Hill Basin area to be 232,000 AFY. The adjusted right for use within Valley District is 167,238 AFY. The adjusted right for use within WMWD is 64,862 AFY. Should the extraction, or the withdrawal, of groundwater from the SBBA exceed the safe yield, Valley District is obligated to recharge an amount equal to the amount the safe yield has been exceeded from an outside source of water. The outside source of water is typically SWP water. This judgment is administered by a Watermaster who prepares an annual report that is submitted to the court.

Due to recent drought conditions and increased utilization of groundwater, Bunker Hill's water table has dropped, resulting in the lowering of one well pump in the City's service area. In order to prevent critical reductions in groundwater levels, the City participates in the IRWMP for the region to manage groundwater. The Western Judgment states that the SBBA will not go into overdraft and the IRWMP is the tool used to ensure the judgment's requirements are met. Through the development of the IRWMP, the basin technical advisory committee (BTAC) was created. Annually, BTAC produces a groundwater management plan which identifies the basins needs and recharge projections and capacities. The report also identifies groundwater table levels, quantity of water pumped, risks of subsidence/liquefaction and safe yield. Additionally, BTAC reviews projects to be included in the IRWMP which may result in regional benefits to increase basin yield and reduce demand in the SBBA. The Western Judgment can be found in Appendix I. A list of users extracting from Bunker Hill can be found in Chapter 2, Table 2-4.

9.5.2.2 Yucaipa Subbasin

The City has two wells located within the Yucaipa Subbasin, Hog Canyon Well and Chicken Hill Well. Due to high levels of nitrate and perchlorate in the area, water pumped from these wells is primarily used for irrigation and only in recent dry years. Major water producers in this subbasin include Yucaipa Valley Water District, Western Heights Water Company, South Mesa Water Company. This subbasin has long standing history of being in overdraft. Although the subbasin is not adjudicated, a groundwater management plan is currently underway to proscribe collective management of the basin.

Table 9-13. DWR Table 6-1R. Groundwater Volume Pumped (AF)

Groundwater Type	Location or Basin Name	Water Quality	2011	2012	2013	2014	2015
Alluvial Basin	Bunker Hill Subbasin	Drinking Water	15,129	17,579	14,945	20,612	10,595
	Total		15,129	17,579	14,945	20,612	10,595

9.5.3 Surface Water

The City receives its surface water from the following sources:

- Mill Creek Watershed: Water from the Mill Creek watershed is treated at Henry Tate (Tate) Surface Water Treatment Plant (SWTP) located on Highway 38 east of Mentone.
- Santa Ana River Watershed: Water from the Santa Ana River watershed is treated at the Hinckley SWTP located on Crafton Avenue.
- SWP Water: When required, SWP water is treated at the Hinckley SWTP and Tate SWTP.

The City has ownership in a variety of private and mutual water companies to supply water to the City's Tate and Hinckley SWTP. For decades the City has increased its ownership in these companies in an effort to increase its access to a reliable local source of water. The City's founders were wise to realize the value of this commodity and sought ownership of water rights in the surrounding tributaries and from local water companies and water right owners. Based on a 10-year average, surface water totals 45.9% of the City's annual water production.

Note: Surface water supplies reported in Table 9-19 and Table 9-20, were counted as self-supplied surface water. These supplies include the City's direct ownership of surface water rights on Santa Ana River and Mill Creek as well as the surface water rights of Bear Valley Mutual Water Company, Crafton Water Company and several other mutual water companies the City owns shares.

9.5.4 Storm Water

The City does not currently have a storm water recovery system. However, the City actively participates in the planning stages for regional projects with Valley District that will capture storm water runoff to be utilized for recharge into Bunker Hill.

9.5.5 Wastewater and Recycled Water

The City is a sewering agency that treats approximately 5.6 million gallons of wastewater daily. The City's Wastewater Treatment Plant (WWTP) has the capability of treating 9 million gallons a day (MGD) to a secondary level. Of that, 7.2 MGD can be treated to a tertiary level. All wastewater collected and treated is from the City's service area and discharged within the City's service area.

The City utilizes all wastewater collected and treated at its WWTP in its service area for:

- Distribution to customers
- Percolation into Bunker Hill

Treated wastewater distributed to customers is tertiary treated, which is deemed recycled water. The City's recycled water customers include Southern California Edison (SCE) Company and recycled/non-potable water customers located in the 1350 pressure zone (see Figure 9-3). SCE uses recycled water as cooling water at its Mountain View Power Plant, and recycled/ non-potable water customers use recycled water for irrigation when supply is available (none was used in 2015). All remaining wastewater is treated to a secondary level and released into spreading basins located east of the WWTP for recharge back into Bunker Hill ground water basin. Based on 2015 volumes, approximately 45% (~2,800 AF) of treated wastewater was used as recycled water supply for customers, and 55% (~3,500 AF) was used to recharge.

The expansion of the recycled water system is limited by its supply, which is currently fully utilized. However, because the City requires new commercial development to provide dual plumbing for

irrigation systems to accommodate the use of recycled/non-potable water as it becomes available, all recycled water may be utilized for distribution to recycled/non-potable water customers in the 1350 and eventually the 1570 pressure zone, as demand increases. Expansion of the recycled water system into the 1570 pressure zone will require construction of a 750,000-gallon reservoir; 1,500 gallons per minute booster pump station, and 9,400 linear feet of pipeline. Construction of these facilities would increase the use of recycled water in the 1350 and 1570 pressure zones by 826 AFY.

Table 9-14. DWR Table 6-2R. Wastewater Collected within Service Area in 2015

Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2015 (AF)	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
City of Redlands	Metered	6,286	City of Redlands	Redlands WWTP	Yes	No
	Total Wastewater Collected from Service Area in 2015	6,286				

Table 9-15. DWR Table 6-3R. Wastewater Treatment and Discharge within Service Area in 2015

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number	Method of Disposal	Does this Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	Wastewater Treated Volume 2015 (AF)	Discharged Treated Wastewater Volume 2015 (AF)	Recycled Within Service Area Volume 2015
Redlands WWTP	Spreading Basins	8 basins located 1,100 ft. east of WWTP		Percolation ponds	No	Secondary, Disinfected – 23	3,254	3,254	0
Redlands WWTP	Recycled Water Distribution System			Other	No	Tertiary	3,032	0	3,032
						Total	6,286	3,254	3,032

Table 9-16. DWR Table 6-4R. Current and Projected Recycled Water Direct Beneficial Uses within Service Area (AF)

Name of Agency Producing (Treating) the Recycled Water:	City of Redlands							
Name of Agency Operating the Recycled Water Distribution System:	City of Redlands							
Supplemental Water Added in 2015	0							
Source of 2015 Supplemental Water	N/A							
Beneficial Use Type	**General Description of 2015 Uses**	**Level of Treatment**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Landscape irrigation (excludes golf courses)		Tertiary	0	2,120	2,370	2,370	2,370	2,370
Industrial use		Tertiary	3,032	3,032	3,032	3,032	3,032	3,032
	Total		3,032	5,152	5,402	5,402	5,402	5,402

Table 9-17. DWR Table 6-5R. 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual (AF)

Beneficial Use Type	2010 Projection for 2015	2015 Actual Use
Industrial use	2,214	3,032
Total	2,214	3,032

Table 9-18. DWR Table 6-6R. Methods to Expand Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Recycled water system expansion	Project to include 9,600 linear feet of pipe, reservoir and booster station.	2020	826
		Total	826

9.5.6 Desalinated Water Opportunities

The City does not have any opportunities for development of desalinated water, including brackish water, and groundwater as a long-term supply.

9.5.7 Exchanges or Transfers

The City does not have any planned or potential future water exchanges or transfers.

9.5.8 Future Water Projects

The City does not have any planned future water projects.

9.5.9 Summary of Existing and Planned Sources of Water

Table 9-19. DWR Table 6-8R. Water Supplies - Actual

Water Supply	Additional Detail on Water Supply	2015 Actual Volume (AF)	2015 Water Quality
Surface water	Local surface water supplies: Santa Ana River and Mill Creek	11,725	Drinking Water
Groundwater	Bunker Hill Basin	10,042	Drinking Water
Groundwater	Bunker Hill Basin and Yucaipa Basin	1,137	Raw Water
Recycled Water	Effluent from City's WWTP	3,032	Recycled Water
Purchased or Imported Water	State Water Project water	0	Drinking Water
	Total	25,936	

Table 9-20. DWR Table 6-9R. Water Supplies – Projected (AF)

Water Supply	Additional Detail on Water Supply	2020	2025	2030	2035	2040
Surface water		14,000	14,000	14,000	14,000	14,000
Groundwater	Potable (Bunker Hill Subbasin	40,000	40,000	40,000	40,000	40,000
Groundwater	Raw Water	1,496	1,564	1,632	1,696	1,696
Recycled Water		5,152	5,402	5,402	5,402	5,402
Purchased or Imported Water		1,500	2,000	2,500	3,000	3,000
	Total	62,148	62,966	63,534	64,098	64,098

9.5.10 Climate Change Impacts to Supply

In order to identify the potential climate change impacts to the City's service area, a vulnerability assessment was completed using the Climate Change Vulnerability Assessment included in Appendix F. A complete discussion of the goals and objectives to improve water supply reliability and address climate change concerns within the region can be found within the IRWMP, Chapter 4: Goals and Objectives (San Bernardino Valley Municipal Water District, January 2015).

9.6 Water Supply Reliability Assessment

9.6.1 Constraints on Water Sources

Because of the industrial and commercial industries within the watershed, regular monitoring of groundwater contaminants is performed. Based on the results from these samples, increased monitoring or treatment may be necessary if resources are impaired, in order to meet all drinking water standards.

9.6.2 Reliability by Type of Year

Historical weather data from the National Oceanic and Atmospheric Administration (NOAA) and water production data for the City was used to identify water supply and demand trends, which most closely represent an average year, single-dry year, and multiple-dry year periods. Data available for analysis were 1983-2015. Correlation of data indicates that during dry years, both single and multiple, demands can increase up to 18.4% and supplies can decrease up to 10.3%, cumulatively. Based on the City's available supplies, the City can continue to meet multiple and single dry year demands.

Table 9-21. DWR Table 7-1R. Availability of Supplies

Year Type	Base Year	Percent of Average Supply
Average Year	2008	100
Single-Dry Year	2007	98
Multiple-Dry Years 1st Year	2000	98
Multiple-Dry Years 2nd Year	2001	95
Multiple-Dry Years 3rd Year	2002	90

9.6.3 Supply and Demand Assessment

The supply and demand reliability assessment was based on available supplies and current and projected demands. Included within are surface water, groundwater, recycled water and purchased or imported water. These values are based on the available water from these sources and current infrastructure.

Table 9-22. DWR Table 7-2R. Normal Year Supply and Demand Comparison (AF)

	2020	2025	2030	2035	2040
Supply Totals	62,148	62,966	63,534	64,098	64,098
Demand Totals	33,138	34,164	34,940	35,715	35,715
Difference	29,010	28,802	28,594	28,383	28,383

Table 9-23. DWR Table 7-3R. Single Dry Year Supply and Demand Comparison (AF)

	2020	2025	2030	2035	2040
Supply Totals	53,831	54,645	55,208	55,767	55,767
Demand Totals	30,142	30,978	31,813	32,649	32,649
Difference	23,689	23,667	23,395	23,118	23,118

Table 9-24. DWR Table 7-4R. Multiple Dry Years Supply and Demand Comparison (AF)

		2020	2025	2030	2035	2040
First Year	Supply Totals	58,936	59,754	60,322	60,886	60,886
	Demand Totals	26,155	26,880	27,605	28,330	28,330
	Difference	32,781	32,874	32,717	32,556	32,556
Second Year	Supply Totals	56,861	57,676	58,240	58,801	58,801
	Demand Totals	28,944	29,747	30,549	31,351	31,351
	Difference	27,917	27,929	27,691	27,450	27,450
Third Year	Supply Totals	53,831	54,645	55,208	55,767	55,767
	Demand Totals	30,142	30,978	31,813	32,649	32,649
	Difference	23,689	23,667	23,394	23,118	23,118

9.6.4 Regional Supply Reliability

To maximize the use of local water resources and reduce dependence on imported water supplies, the City established conservation pricing methods, based on the cost of providing service to each customer, developed water loss management programs and increased public education on demand management. Demand Management Measures and increased use of recycled water are discussed in detail in Section 9.8 and 9.5.5. The region has also taken steps to increase supply reliability by recharging current imported water supplies during wet years to enhance groundwater supplies for use in dry years. Further regional efforts managed by Valley District, are included in Chapter 2.

9.7 Water Shortage Contingency Planning

9.7.1 Stages of Action

Water supply shortages can occur due to droughts or emergency conditions. In such cases, the City has an ordinance to help reduce water demands. This ordinance provides for mandatory cutbacks in water use so as not to endanger health, safety, and welfare of the citizens and property owners in the City. The water conservation ordinance, which serves as a Water Shortage Contingency Plan (Plan) is composed of four stages. Upon determination of the severity of the situation, the City Manager will recommend the appropriate stage to be enacted.

Action Stages

The stages and approximate severity of supply shortage are as follows:

- Stage I: Voluntary Conservation Measures- A small decrease in water supply is expected.
- Stage II, Mandatory Compliance; Water Alert- A medium decrease in water supply is expected.
- Stage III, Mandatory Compliance; Water Warning- A significant decrease in water supply is expected.
- Stage IV, Mandatory Compliance; Water Emergency- Water supplies are in danger of being depleted where such uses as human consumption, sanitation, and fire protection would be endangered. This would be a decrease in supply of more than 50 percent, most likely associated with a natural disaster.

Proper noticing, a public hearing and a majority vote by the entire City Council are required prior to implementation or termination of each stage. Upon approval by City Council, the Plan becomes effective immediately. Staff is required to notice by newspaper publication and water utility bill insert the change of stage. In the event that City Council cannot meet in time to act, the City Manager or his designee is authorized to implement provisions of the Plan and will be reviewed by City Council at its next meeting for revocation or ratification.

Table 9-25. DWR Table 8-1R. Stages of Water Shortage Contingency Plan

Stage	Percent Supply Reduction	Water Supply Condition
1	Up to 15%	Total supply is 85-90% of normal
2	16-25%	Total supply is 75-84% of normal
3	26-35%	Total supply is 65-74% of normal
4	36-50%	Total supply is less than 64% of normal

Table 9-25 identifies water shortage severity in relation to Plan stages. In the event the City experiences severe water shortages of over 50% reduction in water supply, Stage 4 severely limits irrigation, prohibits additions of water to swimming pools, operation of ornamental fountains and issuance of new service connections and meters. Additionally, the restrictions of stage I, II and III still apply. Severe shortages of over 50% reduction in water supply would likely occur from a natural disaster. A series of dry years would reduce water supplies; however, the City has multiple sources of supply and would be able to offset normal supplies with additional groundwater and aggressive conservation efforts to address the basic health and safety needs of the City's customers.

9.7.2 Prohibitions on End Uses

Table 9-26. DWR Table 8-2R. Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Voluntary	No
1	Other	Voluntary, Install water saving devices	No
1	Other	Voluntary,select low water demand plants for new landscaping	No
1	CII - Restaurants may only serve water upon request	Restrict water service in restaurants	No
2	Landscape - Limit landscape irrigation to specific times		yes*
2	Landscape - Limit landscape irrigation to specific days		yes*
2	Other - Require automatic shut of hoses		yes*
2	Landscape - Other landscape restriction or prohibition	Commercial agriculture exempt from limit on irrigation days and times but shall curtail all non-essential water use.	yes*

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	Other	Washing of any vehicles is limited to allowed watering days and times and only with handheld bucket, or hose equipped with automatic shutoff nozzle.	yes*
2	Other - Prohibit use of potable water for construction and dust control	and for washing and sprinkling of foundations or structures	yes*
2	Other water feature or swimming pool restriction	Refilling or adding of water to pools allowed only on allowed watering days and times.	yes*
2	Water Features - Restrict water use for decorative water features, such as fountains	Unless fountain or other structure has a recycling system.	yes*
2	Landscape - Other landscape restriction or prohibition	Gold greens and tees are only allowed irrigation on allowed watering days and times. Fairway irrigation is absolutely prohibited except when irrigated with treated wastewater or reused water.	yes*
2	CII - Restaurants may only serve water upon request		yes*
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Failure to repair controllable leaks is prohibited.	yes*
2	Other - Prohibit use of potable water for washing hard surfaces		yes*
2	Landscape - Restrict or prohibit runoff from landscape irrigation		yes*

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3	Landscape - Other landscape restriction or prohibition	All outdoor irrigation of vegetation shall occur only on allowed days and times using only handheld hoses, drip irrigation, or handheld buckets.	yes*
3	Landscape - Prohibit all landscape irrigation	on golf tee areas. Except when irrigated with treated wastewater or reused water.	yes*
4	Landscape - Prohibit all landscape irrigation	Except on allowed watering days and times	yes*
4	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	and only during permitted hours.	yes*
4	Landscape - Other landscape restriction or prohibition	Commercial Agriculture irrigation is only permitted on designated days and times and only using handheld hoses, drip irrigation systems, or handheld buckets.	yes*
4	Pools - Allow filling of swimming pools only when an appropriate cover is in place.		yes*
4	Water Features - Restrict water use for decorative water features, such as fountains	Prohibited at all times	yes*
4	Other	The issuance of new service connections and meters is prohibited.	yes*
*A surcharge is applied to a customer's utility bill on the 3rd violation. When in a particular stage, all elements of less restrictive stages shall apply as well.			

Location of Water Shortage Contingency Plan:

- Appendix G: Redlands Municipal Code; Chapter 13.06-Water Conservation Plan
- http://cityofredlands.org/drought , *Redlands Municipal Code; Chapter 13.06- Water Conservation Plan*

9.7.3 Penalties, Charges, Other Enforcement of Prohibitions

For prohibitions on end uses, customers will receive a violation should they violate restrictions set forth in the stage currently in effect and the preceding stages. Upon third violation, a surcharge is imposed on the customer's next regular water bill. The surcharge consists of a percentage of the customer's commodity charge on the most recent water bill, based on the stage then in effect. The surcharge for each stage is as follows:

- Stage II: 25 percent
- Stage III: 50 percent
- Stage IV: 75 percent

9.7.4 Consumption Reduction Methods

In addition to prohibitions on end uses, which are the responsibility of customers, the City is committed to lead by example. In 2015, the City created a "Plan of Action" that outlines City efforts to improve outreach and resources for customers and increase water efficiency at its own facilities. This four-phase approach includes increasing efforts and funding in correlation with increasing water reduction requirements. Table 9-27 summarizes these efforts.

Table 9-27. DWR Table 8-3R. Stages of Water Shortage Contingency Plan - Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
All Stages	Expand Public Information Campaign	
All Stages	Improve Customer Billing	
All Stages	Offer Water Use Surveys	
All Stages	Provide Rebates on Plumbing Fixtures and Devices	
All Stages	Provide Rebates for Landscape Irrigation Efficiency	
All Stages	Provide Rebates for Turf Replacement	
2	Decrease Line Flushing	
All Stages	Reduce System Water Loss	
2	Increase Water Waste Patrols	
4	Moratorium or Net Zero Demand Increase on New Connections	
	Implement or Modify Drought Rate Structure or Surcharge	The City will be looking into Budget Based Rates in 2017.
1	Other	Develop landscape ordinance
2	Other	Increased regional collaboration to ensure sufficient water supplies for the entire region.
All Stages	Other	upgrades to increase recycled water use.
2	Other	Implement, phone application, hotline and email address for water waste reporting.

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
2	Other	Develop internal Drought Task Force to collaborate on different methods to reduce consumption in each City department.

9.7.5 Determining Water Shortage Reductions

The City utilizes monthly water production reports to determine demand reductions in comparison to the same month in previous years. In months where a new stage is implemented, the City will track reductions in comparison to month's prior or to the same month in a previous year when less restrictive stages were in place.

9.7.6 Revenue and Expenditure Impacts

Implementation of any stage of the Plan requiring mandatory restrictions may cause a decrease in revenues and/or an increase in expenditures. The City recently experienced decreasing revenue effects due to a series of dry years that required implementation of Stage II of its Plan, the first stage requiring mandatory restrictions. Additionally, implementation of additional restrictions to achieve a State mandated conservation savings, increased outreach efforts and staffing, thus increasing expenditures. Like most agencies, the majority of the City's costs are fixed, and the combination of decreasing revenues and increased expenditures required implementation of revenue adjustments.

Although the City has reserve funds, the Council determined it not prudent to spend them to address declining sales due to drought, but rather utilize other options first. Reserve funds are typically reserved for emergencies needing immediate attention where time constraints of a rate study, customer noticing and public hearings would impede immediate actions. In the case where revenue adjustments and use of reserve funds are not options, the City would postpone capital improvement projects and/or reduce staffing to offset diminished revenues.

9.7.7 Resolution or Ordinance

The adopted water shortage contingency plan, approved by City Council as Ordinance 2151: *City of Redlands Water Conservation Plan* can be found in Appendix G.

9.7.8 Catastrophic Supply Interruption

Disasters, such as earthquakes, occur without notice. In order to minimize confusion and service interruptions, the City's Municipal Utilities and Engineering Department developed an emergency plan. This plan is to be used as a supplement to the latest revision of the Citywide Emergency Plan and provides guidelines for actions to be undertaken by City personnel during an emergency.

In an emergency, City personnel are required to meet at a reporting location for assignment duties. Personnel who are unable to get to the City, because of downed structures or other obstacles, are authorized by the City to offer their services to local water providers if these providers are also experiencing an emergency. The City has been divided into sections. Employees have been assigned to inspect the facilities in these sections. Once damages have been identified, the plan provides for the

dispatch of repair personnel. In cases where water service is diminished due to such emergencies, the City has the option of notifying the public through press releases, City website, flyers, and loud speakers depending on the severity of the emergency.

9.7.9 Minimum Supply Next Three Years

Table 9-28. DWR Table 8-4R. Minimum Supply Next Three Years (AF)

	2016	2017	2018
Available Water Supply	53,831	53,831	53,831

9.8 Demand Management Measures

Although the City has currently achieved its 2020 water use target, the City will continue its efforts to ensure water waste is reduced. Below are Demand Management Measures the City has implemented, plans to implement and implementation method.

9.8.1 Water Waste Prevention Ordinances

Since 1991, a water waste prevention ordinance has been in place to address water waste and shortages (see Appendix G). The ordinance outlines conservation stages to be implemented based on water supply availability and increasing prohibitions on actions that waste water. However, Stage I requires only voluntary conservation from June 1-October 1 and does not require any specific prohibition of water waste. As State mandates on water use practices increase, the City intends to modify the Ordinance to require specific prohibitions of water waste at all times during Stage I.

9.8.2 Metering

The City water distribution system is fully metered. Since 2008, the City has had a meter replacement and maintenance plan in place. Meters smaller than 2" are replaced every 15-20 years and all meters over 2" are calibrated to ensure accuracy. Additionally, from 2014-2015, City staff conducted an audit on all commercial properties/accounts to ensure all connections were legal and accounted for in the City's billing system. This allowed the City to decrease unaccounted for water loss and loss in revenue. The City is currently studying the cost and benefits of implementing Advanced Metering Infrastructure (AMI) and Automatic Meter Reading (AMR), which may, or may not, assist in reducing water loss further. Meter replacement and calibration are ongoing programs and will continue into the foreseeable future.

9.8.3 Conservation Pricing

The City currently uses a traditional tiered rate structure that promotes water conservation at an accurate price for the service provided. The traditional tiered rate structure has two components, a service charge, which is based on meter size, and a commodity charge. The commodity charge is based on the amount of water delivered and increases as the amount of water delivered increases, based on the cost of providing the additional amounts of water. This increase is due to the City utilizing its least expensive sources first before using more costly sources. The amount of water available within each of the three tiers is based on a 10-year average of water utilized from each source. Regardless of the customer type, each customer receives the same amount of water from each tier throughout the year. However, in an effort to further manage demand, in 2015, the City will begin a water allocation based rate study to determine its feasibility. In an allocation based rate (also known as a budget based rate),

each customer is given a water allocation or "budget", and if that budget is exceeded, the customer pays an increased rate for exceeding the allocation for that portion of water that exceeds the water budget.

9.8.4 Programs to Assess and Manage Distribution System Real Loss

Since 2007 the City has replaced approximately 46 miles of pipeline in order to maintain reliability of the distribution system. However, in years prior, the City failed to replace the amount of pipeline when needed; creating a backlog of aged pipe that requires extensive maintenance and repair. The City responds to approximately 600 leaks per year, largely attributed to these aged assets. Often times, these leaks are inches away from prior repairs, triggered by repair disturbance. To further reduce distribution system loss, which was determined in the 2015 AWWA Water Audit to be approximately 6.8%, in 2017, the City will undertake a large pipeline replacement program to replace over 89 miles of pipe over the next ten years. In 2015, the City developed a funding plan, which includes revenue increases over the next three years, to replace the backlog pipe and put the City on track for regular pipeline replacement.

9.8.5 Public Education and Outreach

Due to the efforts in response to SB X7-7, and the effects due to the ongoing drought, the City established programs that further decrease water demand and assist in ensuring a sustainable water supply for future generations. Efforts including the City's tiered water rate structure and water audit program have helped to make the City's water conservation efforts known, however starting in 2010 efforts to reach customers increased significantly. The renewed focus often pointed to customer accountability, while offering City support through programs that promote conservation. This changed focus, aided by the publicity of the drought, has engaged City customers to take water conservation seriously which can be seen in the City's ability to meet its 2020 water reduction requirement 5 years ahead of schedule.

The following programs/efforts have increased engagement with customers:

1. Water Efficiency Rebate Program which provides incentives for:
    a. Weather Based Irrigation Controllers (WBIC's)
    b. Drought Tolerant Lawn Conversions
    c. Synthetic Turf Replacement
    d. Water Efficient Clothes Washers
    e. High Efficiency Sprinkler Nozzles
    f. High Efficiency Toilets
2. Top 10% Highest Water User Letter: Contact efforts
3. Design and construction of four demonstration gardens
4. Participation in regional marketing campaign
5. Educational outreach events

In addition to use of bill stuffers, the City advertises water conservation programs and restrictions through use of the following:

- Bill messages and water use comparison charts
- Bulk postcard mailings
- Consumer Confidence Report advertisements
- Newspaper advertisements

- Electronic signboards
- Event presence
- Street banners
- Social media
- Smartphone app

Additionally, the City offers free water saving products to customers to assist in water conservation. These products have included:

- Hose nozzles
- Toilet leak detection tablets
- Lawn/plant moisture meters
- Low water use plants (at local events)
- Shower timers
- Faucet aerators
- Water efficiency educational collateral

As budgets allow, the City plans to continue the programs/efforts listed above, as well as implement new programs. Plans for an educational program focused on educating children on water waste and efficiency outdoors is currently underway. Because State agencies have put emphasis on water waste reporting, enrolling children in water waste investigations will result in additional reporting staff can follow up on, which will yield significant water saving results.

The City also intends to implement a new rebate program to incentivize customers with small groves to convert to efficient irrigation systems. The City has a long history in the citrus industry and many homes and businesses are landscaped with ornamental and functional groves. By incentivizing customers to replace their antiquated irrigation systems with efficient systems, further outdoor water savings can be achieved. Both the educational program and grove irrigation replacement incentives are included as a Supplemental Environmental Project for State Water Resources Control Board which if decided beneficial, may be included within the City's water conservation program.

9.8.6 Water Conservation Program Coordination and Staffing Support

The City's water conservation program currently staffs two full-time employees and three part-time employees. A full-time water conservation coordinator has been staffed since 2007. In 2015, a full-time water conservation assistant and three part-time water waste investigators were hired to assist with implementing and enforcing water conservation mandates.

Efforts to implement these DMM's have been both significant and successful. Since implementation of State restrictions in 2014, the City has nearly tripled its water conservation budget. Since the 2010 UWMP, over $600,000 in rebates has been given to over 600 customers. These incentives have allowed customers to convert over 7,000 high efficiency sprinkler heads, 300 high efficiency toilets, 100 WBIC's, 60 high efficiency washers and nearly 500,000 square feet of lawn. Additionally, since 2014 the City has spent over $75,000 in public outreach, issued over 2,500 water waste violations and has seen water savings of approximately 21% in potable water use.

9.9 Plan Adoption, Submittal, and Implementation

Table 9-29. DWR Table 10-1R. Notification to Cities and Counties

City Name	60 Day Notice	Notice of Public Hearing
City of Redlands	X	X
County Name	**60 Day Notice**	**Notice of Public Hearing**
San Bernardino County	X	X

9.9.1 Public Availability

This Urban Water Management Plan is available to the public to be viewed in its entirety at:

City of Redlands
Municipal Utilities and Engineering Department
35 Cajon Street, Suite 15A
Redlands, CA 92373

During normal business hours, Monday through Friday (closed alternating Fridays) from 7:30 AM-5:30 PM or can be viewed from the City's website at:

www.cityofredlands.org/MUED/water

10 San Bernardino Municipal Water Department

10.1 System Description

SBMWD was created as a municipal utility by Article 9 of the City of San Bernardino Charter, as adopted on January 6, 1905. SBMWD is governed by a Board of Water Commissioners appointed by the Mayor and subject to confirmation by the Common Council. The first Board of Water Commissioners was appointed May 1905, the initial water distribution system, valued at $160,000 in 1905, covered just one square mile and served a population of only 6,000 people. SBMWD obtains 100 percent of its water from the Bunker Hill Groundwater Basin, a sub-basin of the SBBA. Management of this groundwater basin is coordinated through Valley District.

The SBMWD service area has expanded to include portions of the City of San Bernardino and portions of unincorporated areas of the County of San Bernardino shown in Figure 10-1. The area is bounded on the north by the San Bernardino National Forest, on the east by the East Valley Water District and Redlands Municipal Utilities Department, on the south by the cities of Loma Linda and Colton, and on the west by the West Valley Water District, the city of Rialto, and the Muscoy Mutual Water Company. Elevations of the valley floor range from approximately 1,000 feet above sea level at the southern boundary, to an elevation in excess of 2,100 feet above sea level at its northern-most boundary.

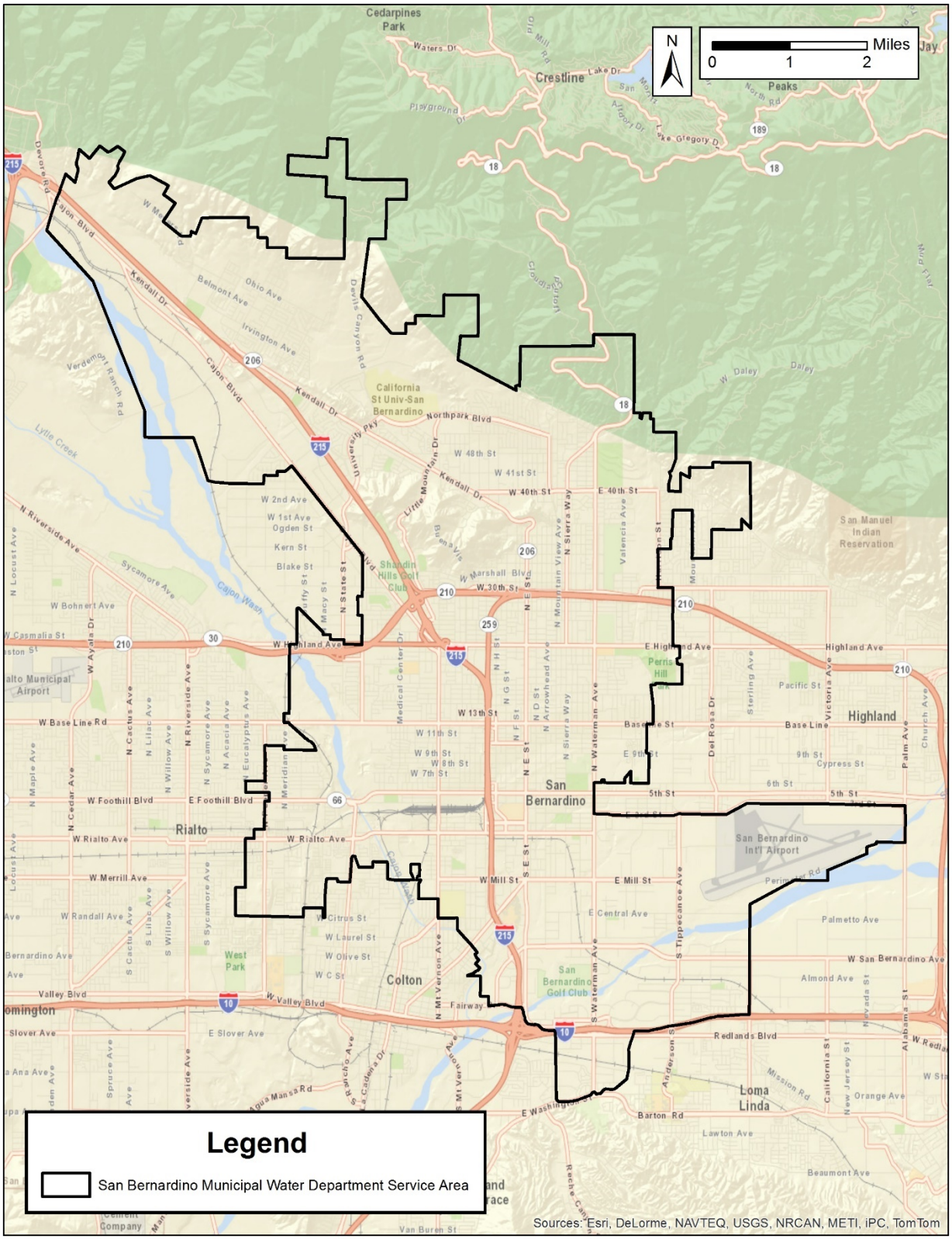


Figure 10-1. City of San Bernardino Service Area Map

The DWR Population Tool was used to intersect the service area boundary in Figure 10-1 with census data to provide population estimates for 1990, 2000, and 2010. Population for intermediate non-census years was estimated using a constant growth rate, as connection data was not available for all the intermediate years. The service area population for 2015 was then estimated using the number of connections in 2010 and 2015.

For future years, the service area boundary was intersected with data provided by SCAG. As part of the 2012 Adopted Growth Forecast, SCAG has estimated the population in 2020 and in 2035 inside each of approximately 4,000 traffic analysis zones (TAZ) that cover southern California. By intersecting the service area boundary with the TAZ, an expected population growth rate was calculated for the SBMWD service area. This growth rate was then used to estimate future populations.

Table 10-1. DWR Table 3-1R. Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040
Population Served	199,657	206,173	212,990	220,031	227,306	234,821

10.1.1 Service Area Climate

The climate typically exhibits hot, dry summers and mild, wet winters. Climate is a primary factor that influences water demand within the SBMWD service area. Most rainfall occurs during the months of November through April. The hottest and driest period of the year is from June through September. It is not unusual during the summer months to have several consecutive days that the daily temperature exceeds 100 degrees Fahrenheit.

Average temperature, precipitation, and evapotranspiration by month are shown in Table 10-2. Evapotranspiration (ET) is the water lost to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indicator of how much water crops, lawn, garden, and trees need for healthy growth and productivity. ET from a standardized grass surface is commonly denoted as ETo.

Table 10-2. Historical Climate Data

Month	Average Daily Low Temperature (°F)	Average Temperature (°F)	Average Daily High Temperature (°F)	Average Precipitation (in.)	Average Standard ETo (in.)
January	44.1	52.4	67.1	3.22	2.53
February	44.6	54.6	67.0	3.25	2.87
March	47.0	56.7	70.7	2.86	4.30
April	49.8	60.9	74.4	1.29	5.38
May	54.3	65.6	78.8	0.47	5.82
June	58.1	71.3	85.2	0.09	6.76
July	62.6	77.7	91.0	0.04	7.38
August	63.2	77.7	92.8	0.15	7.09
September	60.5	73.9	89.4	0.33	5.51
October	55.1	66.5	80.8	0.71	3.97
November	47.8	58.6	72.7	1.32	2.89
December	42.9	53.3	65.9	2.38	2.38
Total				16.1	56.9
Notes: Precipitation and temperature for NOAA weather station 0407723 in San Bernardino; data from 1893 through 2004; http://wrcc.dri.edu; ETo data for CIMIS weather station 44 at University of California, Riverside; data from 1986-2015; http://wwwcimis.water.ca.gov/					

10.2 System Water Use

10.2.1 Water Uses by Sector

SBWMD categorizes water use customers into the following: single-family residential, multifamily residential, commercial/industrial, municipal/government, and landscape. Single-family residential is the largest category, historically accounting for an average of about 51 percent of water deliveries. Multi-family residential and commercial/industrial uses constitute about 16 and 17 percent, respectively. Large landscape use has averaged 12 percent of the supply, and the remaining 4 percent is attributed to municipal/government uses. Actual water deliveries for the years 2011 through 2015 are provided in Table 10-3.

In addition, SBMWD has sold water to Valley District, the City of Loma Linda, and Baseline Gardens Mutual Water Company. SBMWD's historical water sales are summarized in Table 10-3.

Table 10-3. DWR Table 4-1R. Demands for Raw and Potable Water – Actual (AF)

Use Type	Level of Treatment When Delivered	2011	2012	2013	2014	2015
Single Family	Drinking Water	19,502	20,719	20,316	19,379	15,806
Multi-Family	Drinking Water	6,087	6,269	6,111	5,988	5,370
Commercial / Institutional	Drinking Water	7,932	8,574	8,168	8,142	6,083
Landscape	Drinking Water	4,858	5,540	5,423	5,209	4,954
Fire Service	Drinking Water	20	809	139	23	29
Sales / Transfers / Exchanges to other agencies	Drinking Water	7,079	3,915	1,688	113	370
Nonrevenue	Drinking Water	3,288	2,931	3,991	4,575	3,424
	Total	48,767	48,757	45,835	43,429	36,035

In the past, SBMWD has not had water use related to saline barriers, groundwater recharge operations, or recycled water. However, SBMWD does have nonrevenue water. Nonrevenue water is the difference between the amount of water produced and the amount of water billed to customers. Over the last five years, nonrevenue water has been approximately nine percent of produced water within SBMWD system. Sources of nonrevenue water include:

- Hydrant Testing and Flushing
- Groundwater Testing and Flushing
- Fire Hydrant Operations by the Fire Department - This represents the use of water for emergencies
- Meter Inaccuracies
- Leaks from water lines

Based on the SCAG population projections for years 2008, 2020, and 2035 contained in the 2012 Integrated Growth Forecast, SBMWD derived a population growth rate for its service area. This growth rate was applied to 2015 water demands to derive estimates of water demands for the years 2020 through 2040 as shown in Table 10-4.

Table 10-4. DWR Table 4-2R. Demands for Raw and Potable Water – Projected (AF)

Use Type	2020	2025	2030	2035	2040
Single Family	18,426	19,035	19,664	20,314	20,986
Multi-Family	6,260	6,467	6,681	6,902	7,130
Commercial / Institutional / Municipal	7,091	7,325	7,567	7,818	8,076
Landscape Irrigation	4,200	2,800	2,800	2,800	2,800
Fire Service	33	35	36	37	38
Sales/Transfers/Exchanges to other agencies	0	500	1,000	1,500	2,000
Waterman + Baseline Neighborhood Transformation Plan	689	1,378	1,378	1,378	1,378
Nonrevenue	3,670	3,754	3,913	4,075	4,241
Total	40,369	41,294	43,039	44,823	46,649

Total demands, including anticipated use of recycled water, are shown in Table 10-5.

Table 10-5. DWR Table 4-3R. Total Water Demands (AF)

Demand	2015	2020	2025	2030	2035	2040
Potable and Raw Water	36,035	40,369	41,294	43,039	44,823	46,649
Recycled Water – Landscape Irrigation		2,800	2,800	2,800	2,800	2,800
Recycled Water – Other (Sales)		2,800	5,000	7,500	10,000	10,000
Total Water Demand	36,035	45,969	49,094	53,339	57,623	59,449

10.2.2 Distribution System Water Losses

SBMWD operates a meter replacement program which includes replacing meters on a 19-year rotation. Source meters are tested annually. About half of the system has older water mains which the City is aggressively replacing. Additionally, SBMWD operates a leak detection program.

SBMWD performed a water loss audit using the AWWA Manual 36, attached as Appendix O. The volume of water loss for 2015 is shown in Table 10-6.

Table 10-6. DWR Table 4-4R. Water Loss Summary Most Recent 12 Month Period Available

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss (AF)
01/2015	2,470

10.2.3 Estimating Future Water Savings

SBMWD is committed to long-range planning to provide a reliable, cost-effective water supply to its customers.

For this report, SBMWD has projected that future demands will increase at a percentage growth rate that incorporates two factors: the percentage growth in service area population, and potential changes in the per-capita consumption. This approach provides estimates for future system-wide demand that can be used for long-range planning.

In the 2015 UWMP, water suppliers have the option of preparing more detailed demand forecasts by estimating demand factors based on land use categories. For example, SBMWD could identify typical water use per single family customer and per commercial account. These customer classes can be further sub-divided by lot size, neighborhood, or other variables. The intent is to quantify the estimated water use per customer in different customer classes, and then to forecast how future changes will impact water use within each customer class.

For this document, SBMWD has elected not to develop land use-based demand factors and apply future savings from codes and standards. Recent drought regulations have induced significant changes in water consumption patterns, and there is considerable uncertainty as to how demands will change in the future if the drought subsides. Given this uncertainty, SBMWD elected not to quantify passive savings for this UWMP.

10.2.4 Water Use for Lower Income Households

Senate Bill 1087 requires that water use projections of an UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the

housing element of any city, county, or city and county in the service area of the supplier. The SBMWD contains two jurisdictions, the City of San Bernardino and unincorporated County of San Bernardino.

The current General Plan for the City of San Bernardino estimates that 55 percent of households are lower-income. In the absence of more detailed information, this percentage was applied across the SBMWD service area. The estimated demands for lower-income households are shown in Table 10-7. These demands have been included in the projections presented throughout this report.

Table 10-7. Estimated Demands for Lower-Income Households (AF)

Demand	2015	2020	2025	2030	2035	2040
Single Family Residential	8,709	10,153	10,488	10,835	11,193	11,563
Multi-Family Residential	2,959	3,449	3,563	3,681	3,803	3,928
Total	11,668	13,602	14,052	14,516	14,996	15,492

Further, SBMWD will not deny or put unreasonable conditions for water services, or reduce the amount of services applied for by a proposed development that includes housing units affordable to lower income households unless one of the following occurs:

- SBMWD specifically finds that it does not have sufficient water supply
- SBMWD is subject to a compliance order issued by the State that prohibits new water connections
- The applicant has failed to agree to reasonable terms and conditions relating to the provision of services

10.3 SB X7-7 Baselines and Targets

An urban retail water supplier must set a 2020 water use target (herein called the Compliance Water Use Target) and a 2015 interim target (herein called the Interim Water Use Target). SBMWD had previously calculated baseline water use and water use targets in the 2010 RUWMP. However, for the 2015 UWMP, DWR has required that agencies use 2010 census data in the calculation of service area populations. SBMWD has re-calculated its historic service area population using the DWR Population Tool, and in this section presents an updated calculation of baseline water use and water use targets.

DWR has prepared standardized tables to record and document the calculations required for this section. The standardized tables for SBMWD's calculations are included in Appendix Q.

10.3.1 Baseline Water Use

Years 1999 to 2008 have been selected for calculation of the 10-year base period, while years 2003 to 2007 have been selected for calculation of the 5-year base period.

SBMWD's service area population for the period 1995 to 2010 was estimated using the DWR Population Tool. SBMWD has no unmetered uses.

The calculation of gross water use begins with the total amount of water that was put into the potable water distribution system by SBMWD. Water that was exported to another agency was then subtracted, to leave the amount used by SBMWD retail customers.

10.3.2 2015 and 2020 Targets

DWR allows agencies to select from four potential methods for calculating the compliance and interim water use targets as set forth by Water Code section 10608.20(b). SBMWD is using Method 4 to calculate the Compliance and Interim Water Use Targets as set forth by Water Code section 10608.20(b). Compliance Water Use Target under Method 4 is Base Daily GPCD less:

- Indoor residential water savings of 15 GPCD or an amount determined by use of DWR's "BMP Calculator"
- 20 percent savings on all unmetered uses
- 10 percent savings on Baseline CII (expressed in GPCD)
- 21.6 percent savings on current landscape and water loss uses (expressed as GPCD)

SBMWD is choosing to use the default value of 15 GPCD for the indoor residential water savings. SBMWD has no unmetered uses. Baseline CII water use was estimated using the CII water sales for the mid-point year of the baseline period. Baseline CII water use is 42.8 GPCD.

For calculating landscape and water loss uses, DWR has provided the following formula:

= Base Daily Per Capita Water Use - Default Indoor Water Use (70 GPCD) - Baseline CII

Based on this formula, SBMWD's landscape and water loss value is:

= 252 GPCD - 70 GPCD – 42.8 GPCD = 139.3 GPCD

The targets were calculated using the Method 4 spreadsheet provided by DWR. The completed spreadsheet is included in Appendix Q. The resulting targets are summarized in Table 10-8.

Table 10-8. DWR Table 5-1R. Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline GPCD	2015 Interim Target	Confirmed 2020 Target
10-year	1999	2008	252	228	203
5-year	2003	2007	255		

10.3.3 2015 Compliance Daily per Capita Water Use

SBMWD's calculated GPCD for 2015 is below the interim water use target. The results are summarized in Table 10-9.

Table 10-9. DWR Table 5-2R. 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Extra-ordinary Events	Economic Adjust-ment	Weather Normal-ization	Total Adjustments	Adjusted 2015 GPCD	2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015?
160	228	0	0	0	0	160	160	YES

10.4 Demand Management Measures

The reporting format for Demand Management Measures (DMMs) in the 2015 UWMP is different than the 2010 UWMP. This discussion has been arranged into the seven sections recommended by DWR in the 2015 UWMP Guidebook.

10.4.1 Water waste prevention ordinances

SBMWD adopted Rule and Regulation Number 21, attached in Appendix G, which prohibits the waste of water and adopts water shortage conditions in the form of three stages. There are no available estimates on the conservation savings resulting from this DMM or the effects it may have on SBMWD's ability to further reduce demand.

10.4.2 Metering

One-hundred percent of SBMWD's retail customers are metered and billed with commodity rates. SBMWD has a meter maintenance and replacement plan. SBMWD encourages the use of dedicated landscape meters during development review and through water rates.

10.4.3 Conservation pricing

One-hundred percent of SBMWD's retail customers are metered and billed with commodity rates with conservation tiers established per SBMWD Rule and Regulation 21 (provided in Appendix G).

10.4.4 Public education and outreach

SBMWD is in compliance with this DMM. The programs are implemented by the Water Conservation Coordinator.

10.4.4.1 Public Education Programs

SBMWD holds bi-annual water conservation landscape workshops and conservation presentations to neighborhood associations and community groups upon request. SBMWD also coordinates inspections and notify customers in an attempt to identify sources of high-consumption, water waste issues, potential leaks, and inefficient irrigation and water use practices. SBMWD utilizes conserve.sbmwd.org to promote and educate end user water efficiency by offering tools and resources including:

- Water waste reporting portal
- Lists of indoor/outdoor conservation tips
- Lists of all conservation rebate programs
- Information regarding end user restrictions, the drought, and state mandated regulations and updates
- Calendar of conservation related community events hosted or sponsored by SBMWD
- Home water audit checklist and walk through instructions
- Information about local water sources, "Where Your Water Comes from"
- Posting of the annual Consumer Confidence Reports
- Contact information of Conservation Coordinator

Notifications of local conservation related topics and SBMWD sponsored events are posted on the SBMWD Facebook page and through their Twitter account. Facebook and Twitter are also used to post

information on changes in customer services, service alerts, and promotions for conservation programs and incentives.

10.4.4.2 School Education Programs

SBMWD provides elementary and middle school conservation presentations with certified educators for schools within the SBMWD service area. SBMWD is a committee member of the Water Saving Garden Friendly Committee and is in the second year as a sponsor/participant in the regional conservation campaign, "IEfficient". SBMWD also sponsors the annual "Inland Solar Challenge" event and assists in planning of local school events pertaining to water conservation like the annual Kindergarten through 8th Grade water conservation poster contest with schools within the SBMWD service area. Before this event, students are given a conservation presentation as a kick-off to contest participation. Every year SBMWD distributes a conservation calendar featuring the winners of the poster contest and includes:

- Conservation incentive information
- Conservation staff contact information
- Tips for efficient indoor/outdoor water use
- Local water sources information

10.4.5 Programs to assess and manage distribution system real loss

SBMWD operates a meter replacement program which includes replacing meters on a 19-year rotation. Source meters are tested annually. About half of the system has older water mains which the City is aggressively replacing. Additionally, SBMWD operates a leak detection program. To achieve full compliance with the DMM, SBMWD will perform a water loss audit using the AWWA Manual 36. SBMWD will determine the economic value of recovering the water loss, based on the avoided cost of water. SBMWD will perform an analysis of components of apparent and real losses identified per AWWA Manual 36 model, and will determine actions to reduce loss where cost-effective. A comparison of the year-to-year trend of nonrevenue water will be used to evaluate the effectiveness of this DMM. If SBMWD were to reduce nonrevenue water by even one percent this would result in a water savings of 500 AF or more each year. Continued implementation of water loss control practices and procedures is not anticipated to have an effect on SBMWD's ability to further reduce demand.

10.4.6 Water conservation program coordination and staffing support

To be in compliance with this DMM, SBMWD designated a full time water conservation coordinator in 2015. There are no available estimates on the conservation savings resulting from the DMM or the effects of this DMM on SBMWD's ability to further reduce demand.

10.4.7 Other Demand Management Measures

To encourage SBMWD customers to use water wisely, SBMWD offers many conservation rebate incentives making it easy to be water efficient, both in the home, and outdoors. Each SBMWD residential water customer is eligible for up to $1,500 in rebates through their indoor and outdoor water conservation rebate programs. SBMWD has allocated $90,000 for residential conservation outreach and $60,000 for commercial/institutional conservation outreach. Rebates will be available only for as long as funds are available. More detailed information and links to rebate applications can be found at http://www.sbcity.org/water/residents/rebate_information.asp.

10.4.7.1 Irrigation Controller Rebate

Customers can get up to a $250 rebate for installing a weather-based controller or $100 for a standard controller.

10.4.7.2 High-Efficiency Sprinkler Nozzle Rebate

Customers can qualify for a 50-percent rebate, up to $200, for installing High-Efficiency sprinkler heads.

10.4.7.3 Garden Hose Shut-Off Nozzle Rebate

Customers who purchase up to 2 automatic shut-off nozzles for their garden hoses can receive a rebate of up to $10.

10.4.7.4 Drip Irrigation System Rebate

Customers purchasing and installing a drip system in their landscaping or garden may qualify for a 50% rebate, up to $150.

10.4.7.5 Drought Tolerant Plant Rebate

Customers who incorporate drought tolerant trees, plants, and shrubs into their landscaping can receive a 50% rebate, up to $300.

10.4.7.6 Turf Replacement / Removal Rebates

Customers who replace grass turf with mulch or gravel can receive up to a 50% rebate, up to $300. Customers who replace grass turf with artificial turf can receive up to $2 per square foot, up to $400. Customers who replace grass turf with other approved materials can receive a rebate of $2 per square foot, up to $1,500.

10.4.7.7 High-Efficiency Toilet Rebate

Customers can get a rebate of up to $100 when they purchase and install high-efficiency toilets that use 1.28 gallons per flush or less (dual flush toilets that use more than this for any flush, do not qualify). These high-efficiency water-saving toilets can be purchased at nearly any hardware or home improvement store. SBMWD is offering up to four toilet rebates per residence.

10.4.7.8 High-Efficiency Showerhead Rebate

Customers are eligible for a $20 rebate for the purchase and installation of a low flow shower head. These shower heads use 1.6 gallons per minute or less. Maximum of four per residence.

10.4.7.9 High-Efficiency Washing Machine Rebate

SBMWD offers customers a $100 rebate for the purchase and installation of a high-efficiency washing machine that has a CEE rating of Tier 1 or greater. Limit one per residence.

10.4.7.10 High-Efficiency Dishwasher Rebate

Customers are eligible for a $75 rebate for the purchase and installation of a single high-efficiency dishwasher that has a CEE Rating of Tier 1 or greater. Limit one per residence.

10.4.7.11 Household Conservation Kits

SBMWD has put together a household conservation kit to assist their residential water customers. In this packet customers get an easy-to-install kitchen aerator, two bathroom aerators, a shower timer, and

two leak detecting dye tabs. By installing these simple items, customers can see substantial water savings over time. The kit is free, but supplies are limited and offered on a first come first serve basis (limit of 1 per household). Kits can be picked up at SBMWD offices on the 5th floor of City Hall at 300 N D St. The customer's name must appear on an SBMWD residential account. These kits are available only while supplies last.

10.4.8 Planned Implementation to Achieve Water Use Targets

SBMWD's current per-capita consumption is less than its 2020 compliance target. SBMWD expects to continue to implement its current conservation programs to encourage conservation and maintain per-capita consumption below the compliance target.

10.5 System Supplies

SBMWD obtains 100 percent of its water from the Bunker Hill Groundwater Basin, a portion of the SBBA. Management of this groundwater basin is coordinated through Valley District.

10.5.1 Purchased or Imported Water

Imported water available to SBMWD is State Water Project water purchased from Valley District. SBMWD has not used State Water Project water for direct potable use in the past five years and does not plan to use any in the future. However, SBMWD has and will continue to purchase State Water Project water for recharging of the Bunker Hill Basin.

10.5.2 Groundwater

Over the last five years, SBMWD has drawn 100 percent of its water from wells in the SBBA. Currently, water is derived from 57 groundwater wells located throughout its service area. The wells range from 50 to 1,300 feet in depth, and have production capacities ranging from 50 to 3,500 gpm.

The latest version of the BTAC Regional Water Management Plan can be found at http://www.sbvmwd.com/about-us/local-water-conditions.

SBMWD's historical production for the past five years is shown in Table 10-10.

Table 10-10. DWR Table 6-1R. Groundwater Volume Pumped (AF)

Groundwater Type	Location or Basin Name	Water Quality	2011	2012	2013	2014	2015
Alluvial Basin	SBBA	Drinking Water	48,767	48,757	45,835	43,429	36,035
	Total		48,767	48,757	45,835	43,429	36,035

10.5.3 Surface Water

SBMWD obtains 100 percent of its water from groundwater supplies. SBMWD does not plan to utilize any surface water as a source of drinking water in the future.

10.5.4 Stormwater

SBMWD is participating in regional planning efforts to capture additional stormwater for purposes of groundwater recharge.

10.5.5 Wastewater and Recycled Water

SBMWD currently does not use recycled water to offset potable demand. SBMWD anticipates up to 5,600 AFY of recycled water use by year 2020. SBMWD has not yet implemented a recycled water program, but is actively undertaking design and feasibility studies for the use of recycled water. Sewer collection systems are not operated by the SBMWD, but rather are operated by the County of San Bernardino, cities of San Bernardino, Loma Linda, and EVWD. Collected wastewater is treated at the San Bernardino Water Reclamation Plant to a secondary treatment level.

Table 10-11 and Table 10-12 show existing wastewater collection and treatment at the San Bernardino Water Reclamation Plant.

Following treatment at the San Bernardino Water Reclamation Plant effluent is conveyed to the RIX Tertiary Treatment Facility in the City of Colton. This facility is jointly owned by SBMWD and the City of Colton, and is operated under contract solely by the City of San Bernardino. At the RIX facility, tertiary treatment to Title 22 standards consists of a native soil filtration process followed by ultraviolet (UV) disinfection prior to discharge to the Santa Ana River. A portion of the discharged water, 16,000 AFY, is provided by contract to Valley District to maintain flows in the Santa Ana River, fulfilling Valley District's downstream obligations under the Orange County Judgment.

SBMWD's Water Reclamation Division completed a Water Reclamation Feasibility Study in February 2005. This recycled water optimization plan was designed to explore an effective and efficient means of constructing and distributing recycled water to customers within the service area as no water recycling facilities are currently located in the service area. The results of this study have led to the proposed Clean Water Factory. The Clean Water Factory is a project to treat effluent from the San Bernardino Water Reclamation Plant to a quality approved for recharge—as set by the California Division of Drinking Water (DDW) and the Santa Ana RWQCB — and convey the recycled water to the Waterman Basins, the East Twin Creek Spreading Grounds, and the Devil Canyon and Sweetwater Basins for surface spreading in the northern portion of the SBMWD service area. Recycled water spread at these facilities will artificially recharge the Bunker Hill Groundwater Basin (Bunker Hill Basin) and, more specifically, the Bunker Hill A Management Zone, as described in the Water Quality Control Plan for the Santa Ana River Watershed (Basin Plan). The Clean Water Factory will also treat a side stream of San Bernardino Water Reclamation Plant effluent to a quality approved for direct use and convey the tertiary treated recycled water to customers that can benefit from a non-potable water supply. With potential expansion (later phases), it is estimated that up to 34,200 AFY of recycled water could be generated and used on the SBMWD service area during the planning period.

Table 10-11. DWR Table 6-2R. Wastewater Collected within Service Area in 2015

Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2015 (AF)	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
City of San Bernardino	Metered	15,124	City of San Bernardino	San Bernardino Water Reclamation Plant	Yes	No
	Total Wastewater Collected from Service Area in 2015	15,124				

Table 10-12. DWR Table 6-3R. Wastewater Treatment and Discharge within Service Area in 2015

Waste-water Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Waste-water Discharge ID Number	Method of Disposal	Does this Plant Treat Waste-water Generated Outside the Service Area?	Treat-ment Level	Waste-water Treated Volume 2015 (AF)	Discharged Treated Waste-water Volume 2015 (AF)	Recycled Within Service Area Volume 2015
San Bernardino Water Reclamation Plant	Rapid Infiltration / Extraction (RIX) Plant	Flow to RIX		Other	Yes	Secondary, Disinfected - 23	15,124	15,124	0
						Total	15,124	15,124	0

10.5.5.1 Recycled Water Beneficial Uses

The estimated future beneficial uses are based on planning documents for the Clean Water Factory.

Table 10-13. DWR Table 6-4R. Current and Projected Recycled Water Direct Beneficial Uses within Service Area (AF)

Name of Agency Producing (Treating) the Recycled Water:	City of San Bernardino Municipal Water Department							
Name of Agency Operating the Recycled Water Distribution System:	City of San Bernardino Municipal Water Department							
Supplemental Water Added in 2015	N/A							
Source of 2015 Supplemental Water	N/A							
Beneficial Use Type	**General Description of 2015 Uses**	**Level of Treatment**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Direct non-potable use	Landscape irrigation, other (sales)	Tertiary		5,600	7,800	10,300	12,800	12,800
Groundwater recharge		80% Advanced, 20% Tertiary		0	4,300	8,300	12,200	18,700

Table 10-14. DWR Table 6-5R. 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual (AF)

Beneficial Use Type	2010 Projection for 2015	2015 Actual Use
Recycled Water Use	5,600	0

10.5.5.2 Actions to Encourage and Optimize Future Recycled Water Use

SBMWD is still in the planning stages for recycled water. As described earlier, the primary use of recycled water is anticipated to be groundwater recharge. Other potential uses include non-potable uses in the vicinity of the San Bernardino Water Reclamation Plant. These existing uses include landscaping at the reclamation plant itself, the San Bernardino Municipal Golf Course, and landscape irrigation by the California Department of Transportation in the vicinity of Interstate 215. It is estimated these uses have approximately 840 AFY of demand. Table 10-15 provides estimates of future recycled water use expected from these projects.

The primary user of the proposed recycled water will be SBMWD itself; the agency will use the water in-lieu of imported water to maintain the SBBA groundwater basin. So long as recycled water costs less than a like an amount of SWP water, there will be a strong financial incentive to develop and use recycled water for groundwater recharge.

Challenges to the use of recycled water include public acceptance of recycled water, cost, and potential environmental impacts. Given the location of the water reclamation plant, it will be necessary to pump water several miles before it reaches acceptable spreading areas. In addition, there are concerns about

maintaining flows for other beneficial uses of the Santa Ana River as well as maintenance of water quality in any groundwater basins that receive recycled water.

Table 10-15. DWR Table 6-6R. Methods to Expand Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Clean Water Factory	The Clean Water Factory will primarily treat effluent from the San Bernardino Water Reclamation Plant to quality approved for recharge. The factory will also treat a side stream of San Bernardino Water Reclamation Plant effluent to a quality approved for direct use and convey the tertiary treated recycled water to customers that can benefit from a non-potable supply.	2020	5,600

10.5.6 Desalinated Water Opportunities

The need for brackish groundwater desalting is somewhat limited in the San Bernardino Valley. While elevated salts are a concern in the groundwater basins of the Western Judgment (SBBA, Rialto-Colton, Riverside), average TDS levels in all of these basins are currently below 500 mg/L (DWR 2003). However, elevated salts are an issue for retailers that overlie the San Timoteo Groundwater Basin and agencies in this basin are considering implementing desalter operations. The area is fortunate to have a brine line which can transport non- reclaimable waste, by gravity, from the City of San Bernardino Wastewater Reclamation Plant to the Orange County Sanitation District's treatment plant.

The development of (or financial participation in) a new seawater desalination project, while costly, is being investigated by other wholesale and retail water agencies in southern California. Because the San Bernardino Valley is an inland area, in order for desalination to work it would be necessary for agencies in the San Bernardino Valley to join with other water purveyors in the development of a coastal desalination facility and then receive water from the SWP supplies of other participants via an exchange. It is not cost-effective for the San Bernardino Valley to receive direct delivery of desalted ocean water.

Seawater desalination is an alternative that is technically viable. However, production and treatment costs have historically been several times higher than those of SWP costs and conventional treatment.

10.5.7 Exchanges or Transfers

SBMWD has water exchange and transfer agreements with several of the surrounding agencies on an as-needed basis. Exchanges occur when SBMWD pumps water for another agency and in turn receives water from that agency at a future time and at a specified ratio to account for pumping and delivery costs. Exchanges in the past have occurred during periods of lowered groundwater levels, loss of water by other agencies due to groundwater contamination, and to facilitate increased pumping in SBMWD's artesian pressure zone to lower groundwater levels that had infiltrated underground utilities. Exchanges are on an as-needed basis and only occur when adequate supplies are available within SBMWD's service area. Therefore, exchanges are not taken into consideration when examining future water supplies.

10.5.8 Future Water Projects

As described in Section 10.5.5, SBMWD is planning a recycled water supply.

Table 10-16. DWR Table 6-7R. Expected Future Water Supply Projects or Programs

Name of Future Projects or Programs	Joint Project with Other Agencies?	Other Agency Names	Description	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Agency (AF)
Clean Water Factory			The Clean Water Factory is a project to treat effluent from the San Bernardino Water Reclamation Plant to a quality approved for recharge and convey the recycled water to the Waterman Basins, the East Twin Creek Spreading Grounds, and the Devil Canyon and Sweetwater Basins for surface spreading in the northern portion of the SBMWD service area. The Clean Water Factory will also treat a side stream of San Bernardino Water Reclamation Plant effluent to a quality approved for direct use and convey the tertiary treated recycled water to customers that can benefit from a non-potable water supply.	2020	Average Year	5,600

10.5.9 Summary of Existing and Planned Sources of Water

SBMWD's current and anticipated future supplies are summarized in Table 10-17 and Table 10-18.

Table 10-17. DWR Table 6-8R. Water Supplies - Actual

Water Supply	Additional Detail on Water Supply	2015 Actual Volume (AF)	2015 Water Quality
Groundwater	SBBA	36,035	Drinking Water
	Total	36,035	

Table 10-18. DWR Table 6-9R. Water Supplies – Projected (AF)

Water Supply	Additional Detail on Water Supply	2020	2025	2030	2035	2040
Groundwater	SBBA	52,671	54,730	56,866	59,082	59,082
Recycled Water	Landscape Irrigation	2,800	2,800	2,800	2,800	2,800
Recycled Water	Other (sales)	2,800	5,000	7,500	10,000	10,000
Recycled Water	Groundwater Recharge	0	4,300	8,300	12,200	18,700
	Total	58,271	66,830	75,466	84,082	90,582

10.6 Water Supply Reliability Assessment

10.6.1 Constraints on Water Sources

During times of State-wide drought conditions, the availability of State Water may be reduced. These conditions are normally known in advance, providing SBMWD with the opportunity to plan for the reduced supply.

The SBBA is a managed basin. SBMWD therefore has the opportunity to develop additional wells and over-extract groundwater under specified conditions contained in the stipulated judgment. The wells in general have provided a stable source of water supply.

Exchanges in the past have occurred during periods of lowered groundwater levels, loss of water by other agencies due to groundwater contamination, and to facilitate increased pumping in SBMWD's artesian pressure zone to lower groundwater levels that had infiltrated underground utilities. Exchanges are on an as-needed basis and only occur when adequate supplies are available within SBMWD's service area. Therefore, exchanges are not taken into consideration when examining future water supplies.

10.6.2 Reliability by Type of Year

The UWMP Act requires urban water suppliers assess water supply reliability by comparing total projected water use with the expected water supply over the next twenty years in five year increments. The Act also requires an assessment of single-dry year and multiple-dry years. This section presents the reliability assessment for SBMWD's service area.

10.6.2.1 Normal Water Year

The Normal/Average water year is a year in the historical sequence that most closely represents median runoff levels and patterns. Table 10-23 demonstrates that SBMWD anticipates adequate supplies for years 2020 to 2040 under normal conditions.

10.6.2.2 Single Dry Year

The single-dry year is generally the lowest annual runoff for a water source in the record. The single-dry year may differ for various sources. In Table 10-24, demands are assumed to be 10 percent greater in a single-dry year than during a normal year. Table 10-24 demonstrates the SBMWD anticipates adequate supplies for years 2020 to 2040 under single-dry year conditions.

10.6.2.3 Multiple-Dry Years

The multiple-dry year is generally the lowest annual runoff for a three year or more consecutive period. The multiple-dry year period may differ for various sources. In Table 10-25, demands are assumed to be 10 percent greater in the first year of a multiple-dry year than during an average year. During the second year of a multiple dry year period, demands are expected to be the same as an average year due to conservation and public education efforts. During the third year of a multiple dry year period, demands are expected to decrease 10 percent due to mandatory conservation measures that would be enacted in year three of a multiple dry year period. Table 10-25 demonstrates that SBMWD anticipates adequate supplies for years 2020 to 2040 under multiple-dry year conditions.

10.6.3 Regional Supply Reliability

SBMWD is committed to minimizing the need to import water from other regions. SBMWD operates a number of conservation programs to implement various Demand Management Measures.

10.7 Water Shortage Contingency Planning

Water supplies may be interrupted or reduced significantly in a number of ways, such as drought which limits supplies, a fire or earthquake which damage delivery or storage facilities, chemical spill, or a regional power outage. Chapter 5 of this RUWMP describes water shortage contingency planning for regional water supply sources (imported water, groundwater). This section focuses on water shortage contingency planning for SBMWD. In order to ensure a reliable water supply in a water shortage situation, SBMWD developed a Drought Contingency Plan that was originally adopted by SBMWD on March 12, 1991 in response to a statewide water shortage. This plan included voluntary conservation measures. The objective of the Drought Contingency Plan was to provide effective, implementable measures to ensure a safe, adequate, and reliable supply of water during continued drought conditions. It was also the SBMWD's intention to continue to cooperate with other local water purveyors to assist them in meeting their water needs. Additionally, SBMWD updated its Emergency Response Plan in 2008. This plan is designed to address emergency water shortages that could occur as a result of an earthquake, flood, fire, or other catastrophic events affecting power supplies and/or the water distribution system. SBMWD updated its Water Shortage Contingency Plan with Rule and Regulation Number 21, attached in Appendix G, on June 1st, 2015. During any drought or water supply shortage condition, the Department's General Manager may declare any one of three shortage levels responses described in this chapter.

10.7.1 Stages of Action

The stages are shown in Table 10-19.

Table 10-19. DWR Table 8-1R. Stages of WSCP

Stage	Percent Supply Reduction	Water Supply Condition
1	0	Normal Conditions
2	10	5% - 10% shortage
2A	30	10% - 30% shortage
3	50	30% to 50% shortage

10.7.2 Prohibitions on End Uses

The water use prohibitions for each stage are shown in Table 10-20.

Table 10-20. DWR Table 8-2R. Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	CII - Other CII restriction or prohibition	Large water use commercial and industrial facilities shall, upon request of the General Manager, provide the SBMWD with a plan to conserve water at their facilities. The SBMWD will provide these facilities with information regarding the average monthly water use by the facility for the last two-year period. The facility will be expected to provide the SBMWD with a plan to conserve or reduce the amount of water used by that percentage deemed by the SBMWD to be necessary under the circumstances.	Yes
2	Landscape – Limit landscape irrigation to specific days	Irrigation shall be limited to four days per week on Mondays, Wednesdays, Fridays, and Sundays only	Yes
2	Landscape – Limit irrigation to specific times	Irrigation shall be only allowed between the off-peak hours of 6:00 pm through 8:00 am	Yes
2	Landscape - Restrict or prohibit runoff from landscape irrigation	No water of outdoor landscapes that cause excessive runoff	Yes
2	Other - Prohibit use of potable water for washing hard surfaces	No washing down driveways, sidewalks, or other hardscapes	Yes
2	Other - Require automatic shut of hoses	The washing of cars, trucks or other vehicles is not permitted except with a hose equipped with an automatic shut-off device, or a commercial facility so designated for vehicle washing purposes.	Yes
2	Other – Customers must repair leaks, breaks, and malfunctions in a timely manner	All leaks shall be corrected within seventy-two (72) hours of Department notification	Yes
2	Other water feature or swimming pool restriction	No use of fountains that use potable water, unless the water is recirculated	Yes
2A	Landscape – Limit irrigation to specific days	Irrigation shall be limited to three days per week; Mondays, Wednesdays, and Fridays only	Yes
2A	Landscape – Other landscape restriction or prohibition	Maximum irrigation time of 15 minutes per station per designated irrigation day	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2A	Landscape – Other landscape restriction or prohibition	Irrigation of ornamental turn on public street medians is prohibited	Yes
2A	Landscape – Other landscape restriction or prohibition	Irrigation is prohibited for a full 48 hours after a significant precipitation event (rainfall in excess of 1/8") as measured by SBMWD's rain gauge	Yes
2A	Other – Prohibit use of potable water for construction and dust control	Use of potable water outside of new residential home and commercial/industrial construction that is not delivered by drip or micro-spray systems is prohibited	Yes
2A	CII – Restaurants may only serve water upon request	The serving of drinking water other than upon request is prohibited, in eating or drinking establishments including but not limited to restaurants, hotels, cafes, cafeterias, bars, or any other public place where food or drink are served	Yes
2A	CII – Lodging establishment must offer opt out of linen service	All hotels/motels shall provide their guests with the option of choosing not to have towels and linens laundered daily. The hotel/motel must prominently display notice of this option in each bathroom using clear and easy language.	Yes
3	Landscape - Prohibit certain types of landscape irrigation	Commercial nurseries shall discontinue all watering and irrigation. Watering of livestock is permitted as necessary.	Yes
3	Other - Prohibit use of potable water for construction and dust control	No new construction meter permits shall be issued by SBMWD. All existing construction meters shall be removed and/or locked out of service.	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Washing of vehicles, except when done by commercial car wash establishments using only recycled or reclaimed water may be prohibited.	Yes
3	Landscape – Limit irrigation to specific times	Irrigation shall be allowed only between the off-peak hours of 8:00 pm through 6:00 am; however, the Department reserves the right to prohibit all outdoor irrigation at any time depending on the severity of the emergency	Yes
3	Landscape – Limit landscape irrigation to specific days	Irrigation shall be limited to two days per week, on Mondays and Thursdays; however, the Department reserves the right to prohibit all outdoor irrigation at any time depending on the severity of the emergency	Yes

10.7.3 Penalties, Charges, Other Enforcement of Prohibitions

Rule and Regulation No. 21 contains a series of Notices of Violations for water waste:

- Step 1: 1st Violation warning letter to customer/owner describing the water waste issue and notice of potential fines for continuing waste, providing a SBMWD customer service contact for conservation information and assistance. Provides customer/owner seven (7) calendar days to remedy the water waste situation and comply with conservation restrictions.

- Step 2: 2nd Violation, customer/owner site visit or phone call to discuss nature of the water waste and potential solutions. A second Notice of Violation letter allowing seven calendar days to remedy the water waste situation and comply with the conservation restrictions.
- Step 3: 3rd Violation: Third Notice of Violation letter informing customer/owner of financial penalty and allowing seven calendar days to remedy water waste situation and comply with conservation measures. One hundred dollars ($100.00) penalty assessed.
- Step 4: Subsequent Violation(s): Additional penalties increasing incrementally by one hundred dollars ($100.00) per incident. Customer/owner shall receive a separate notice per each subsequent violation and will have seven (7) calendar days after each notification to remedy the water waste situation and comply with conservation restrictions;
- Step 5: The Department may restrict the amount of water supplied to any customer/owner failing to comply with conservation standards. The provisions of this section shall be applied at the discretion of the Department.
  Exceptions: The restrictions of water consumption outlined herein are not applicable to water usage necessary for public health and safety or for essential governmental services, such as police, fire, and emergency services. The Department reserves the right to waive any water restriction penalty when, in its discretion, such consumption is required in order to maintain an adequate level of public health and safety.

10.7.4 Consumption Reduction Methods

SBMWD offers various rebates to encourage conservation (i.e. ultra-low flush toilet replacements, high efficiency washing machines, etc.). SBMWD has a water rate structure that promotes water efficiency. The reduction goal is to balance supply and demand.

Table 10-21. DWR Table 8-3R. Stages of WSCP - Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
1	Expand Public Information Campaign	Provide reminder notices regarding noted water waste and offer community outreach programs
2	Expand Public Information Campaign	Increase advertisement of conservation measures; Maintain a message center for reporting water waste; Determine course of action to remediate reported water waste
2	Other	Commercial and industrial facility education on water use.
2	Implement or Modify Drought Rate Structure or Surcharge	10 percent rate increase on customers that don't fulfill 5 percent reduction
2A	Implement or Modify Drought Rate Structure or Surcharge	20 percent rate increase on customers that don't fulfill 28 percent reduction
2A	Expand Public Information Campaign	Increase advertisement of conservation measures; Maintain a message center for reporting water waste; Determine course of action to remediate reported water waste
3	Implement or Modify Drought Rate Structure or Surcharge	100 percent rate increase on customers that don't fulfill 50 percent reduction

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
3	Expand Public Information Campaign	Increase advertisement of conservation measures; Maintain a message center for reporting water waste; Determine course of action to remediate reported water waste

10.7.5 Determining Water Shortage Reductions

Under normal conditions, SBMWD prepares monthly production reports which are reviewed and compared to production reports and pumping statistics from prior months and the same period of the prior year. Under shortage conditions, these production reports could be prepared as often as daily. In addition, billing reports could be reviewed to identify users who are not abiding by water the water shortage contingency plan.

10.7.6 Revenue and Expenditure Impacts

The projected impact on water sales for a one-year period under a Stage 2 water shortage condition would result in an overall decrease in water sales revenue of approximately 10 percent. A decrease in water sales revenue of this magnitude would not adversely impact the financial operations of SBMWD.

Under Stage 2A, SBMWD is seeking to achieve a 28-percent reduction in water usage and assess financial penalties on usage in excess of those amounts. If customers do achieve the target reductions, the reduction in revenue to SBMWD would be between 10 and 25 percent.

A one-year period under a Stage 3 water shortage condition would reduce sales revenue by approximately 25 percent given the current rate structure. Adequate reserves are available to cover both shortage scenarios described above. However, a 25 percent reduction in water sales revenue would necessitate a water rate increase if the Stage 3 condition continued beyond the initial one-year period.

10.7.7 Resolution or Ordinance

A Drought Contingency Plan and Water Conservation Policy were originally adopted by SBMWD in 1991. More recently, on June 1, 2015, the City of San Bernardino Board of Water Commissioners passed Resolution 763, which amended the general water service/rates, water conservation measures, and water waste penalties as set forth in Rule and Regulation No. 21 (see Appendix G).

10.7.8 Catastrophic Supply Interruption

SBMWD is a participant in ERNIE a water/wastewater mutual aid network within San Bernardino and Riverside counties. In an emergency ERNIE could be activated. If a disaster overwhelms the local resources, SBMWD will activate the CalWARN system for statewide mutual aid. In addition to CalWARN and ERNIE, SBMWD has mutual aid agreements with the City of Loma Linda, City of Rialto, City of Redlands, City of Riverside, and Yucaipa Valley County Water District. The updated Emergency Response Plan is consistent with the Statewide Emergency Management System and the National Incident Management System, meaning that during an emergency SBMWD will be able to effectively coordinate its response with state and federal agencies and will be able to utilize the Governor's Office of Emergency services to provide and receive mutual aid from nearby agencies.

The Emergency Response Plan may be activated whenever any of the following conditions exist:

- Natural disaster, such as an earthquake, flood, fire, etc.
- Loss of water transmission lines, main breaks, or other major facilities.
- Water quality issue involving a "boil water" order or other major public relations/communications issue.
- Emergency curtailment.
- Disturbance affecting nearby utilities.
- Hazardous spill (chlorine).
- Terrorist activities.

SBMWD maintains portable backup power supply and diesel and/or natural gas driven wells at critical locations within the distribution system to provide domestic water for emergency purposes during sustained power outages. In the event of a natural or man-made catastrophe that affects SBMWD's ability to provide a potable water supply for a sustained period of time (30 days or more), the following measures will be implemented as required:

- SBMWD's boil water notification program will be activated. The notice will be provided to local radio stations and newspapers.
- Customers will be notified of supplemental sources of water for cooking and drinking.
- Mutual Aid Agreements will be implemented.
- Potable water will be made available and distributed to customers throughout the SBMWD service area.
- A public information program will be initiated.
- Normal water service conditions will be restored as expediently as possible.

10.7.9 Minimum Supply Next Three Years

The UWMP Act requires a retailer to quantify the minimum water supply available during the years 2016 to 2018, assuming years 2016 to 2018 repeat the driest three-year historic sequence for each water supply source. Table 10-22 shows the estimated total supplies, given a repeat of historically low conditions on all water supplies. Comparing these supplies to the demand projections, SBMWD has adequate supplies available to meet projected demands should a multiple-dry year period occur during the next three years.

Table 10-22. DWR Table 8-4R. Minimum Supply Next Three Years (AF)

Available Water Supply	2016	2017	2018
Available Water Supply	52,671	52,671	52,671

10.8 Supply and Demand Assessment

The following tables show a comparison of supplies and demands during normal and dry years. SBMWD anticipates that demands could increase 10 percent during a single dry year. During multiple dry years, experience during the recent drought has shown that conservation measures can offset demand increases and even lead to reduced demands. SBMWD has estimated that demands could be 10 percent higher during the first dry year, be equivalent to an average year during the second dry year, and be 10 percent lower during the third dry year.

Table 10-23. DWR Table 7-2R. Normal Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	58,271	66,830	75,466	84,082	90,582
Demand Totals	45,969	49,094	53,339	57,623	59,449
Difference	12,302	17,736	22,127	26,459	31,133

Table 10-24. DWR Table 7-3R. Single Dry Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	58,271	66,830	75,466	84,082	90,582
Demand Totals	50,566	54,003	58,673	63,386	65,394
Difference	7,705	12,827	16,793	20,696	25,188

Table 10-25. DWR Table 7-4R. Multiple Dry Years Supply and Demand Comparison (AF)

Year	Totals	2020	2025	2030	2035	2040
First Year	Supply Totals	58,271	66,830	75,466	84,082	90,582
	Demand Totals	50,566	54,003	58,673	63,386	65,394
	Difference	7,705	12,827	16,793	20,696	25,188
Second Year	Supply Totals	58,271	66,830	75,466	84,082	90,582
	Demand Totals	45,969	49,094	53,339	57,623	59,449
	Difference	12,302	17,736	22,127	26,459	31,133
Third Year	Supply Totals	58,271	66,830	75,466	84,082	90,582
	Demand Totals	41,372	44,184	48,005	51,861	53,504
	Difference	16,899	22,646	27,461	32,221	37,078

11 West Valley Water District

11.1 System Description

WVWD is a County Water District, a public agency of the State of California, organized and existing under the County Water District Law (Division 12, Section 30,000 of the Water Code) of the State of California. Among other typical political subdivision powers, it has the power of taxation and eminent domain.

WVWD is located in southwestern San Bernardino County with a small part in northern Riverside County. The service area is shown in Figure 11-1. WVWD is adjacent to the western limits of the City of San Bernardino on the east; adjacent to, and including the eastern part of the City of Fontana on the west; adjacent to the U.S. Forest Service boundary on the north; and the County of Riverside on the south. WVWD is divided into northern and southern sections by the central portion of the City of Rialto.

The DWR Population Tool was used to intersect WVWD's water service area with compiled census data to estimate historic service area populations for 1990, 2000, and 2010. Values for intermediate years were estimated assuming a constant growth percentage.

WVWD's service area overlaps five political jurisdictions: the Cities of Rialto, Fontana, Colton, and Jurupa Valley; and unincorporated areas of San Bernardino County (including the community of Bloomington). The density of development and recent growth patterns vary considerably within these different jurisdictions, and WVWD maintains records of the number of connections within each jurisdiction. In order to estimate the 2015 service area population, WVWD divided its service area into six sub-divisions based on political boundaries. WVWD calculated the 2010 census population for each of these six sub-divisions (the portions inside Rialto, Fontana, Colton, Bloomington, Jurupa Valley, and unincorporated San Bernardino County) using the DWR Population Tool. WVWD then used the number of connections in 2010 and 2015 to estimate the 2015 population in each of these six sub-divisions, and summed the populations to estimate a total service area population for 2015.

For future populations, the Southern California Association of Governments (SCAG) has developed a forecast called the 2012 Adopted Growth Forecast. As part of the 2012 Adopted Growth Forecast, SCAG has estimated the population in 2020 and in 2035 inside each of approximately 4,000 traffic analysis zones (TAZ) that cover southern California. GIS software was used to intersect WVWD's service area with the SCAG projections to calculate an estimated annual growth rate of approximately 1.5 percent for the WVWD service area. This growth rate was applied for years beyond 2015. The current and estimated future populations are shown in Table 11-1.

Table 11-1. DWR Table 3-1R. Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040
Population Served	80,161	86,246	92,793	99,836	107,415	115,568

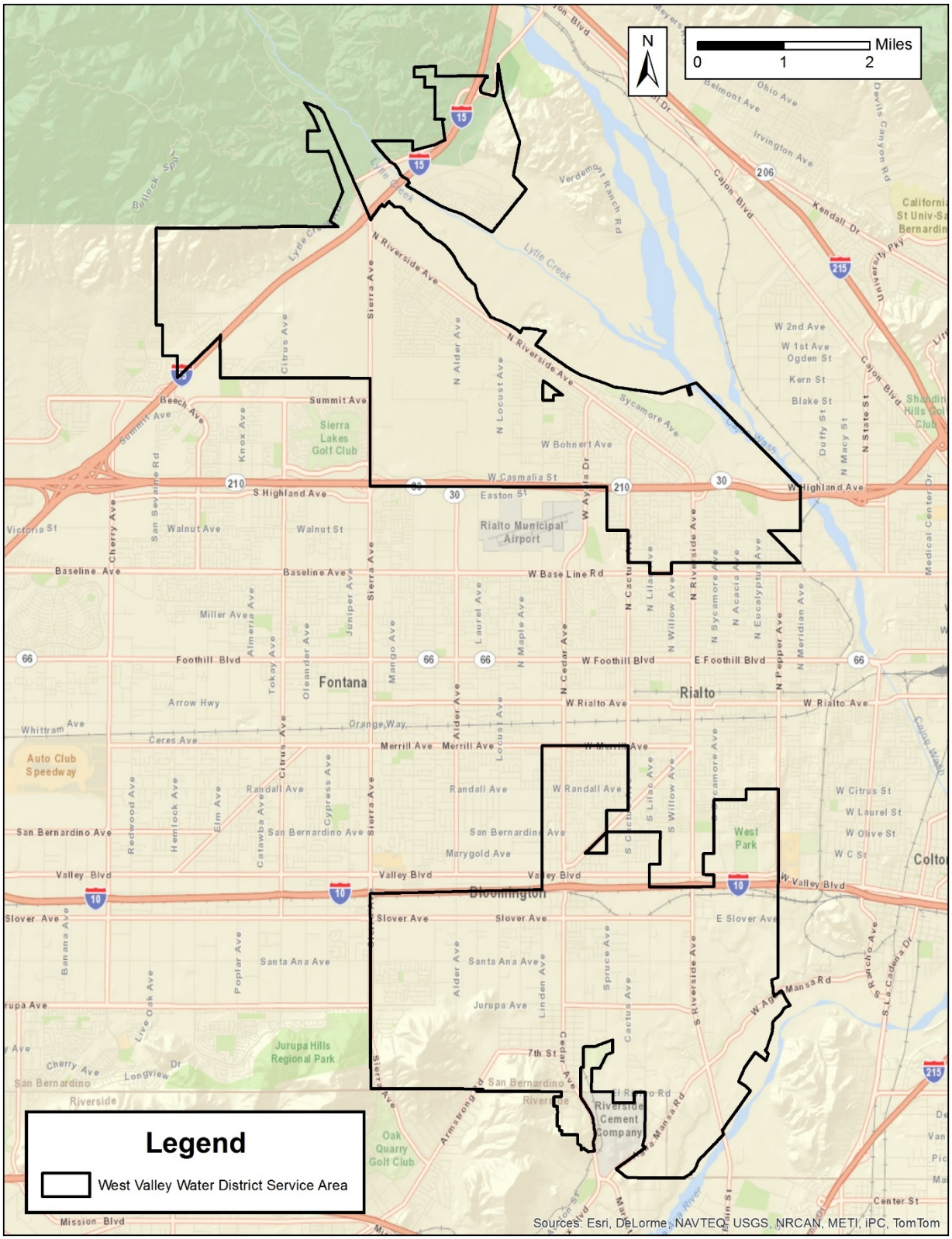


Figure 11-1. West Valley Water District Service Area

11.1.1 Service Area Climate

The climate typically exhibits hot, dry summers and mild, wet winters. Climate is a primary factor that influences water demand within the WVWD service area. Most rainfall occurs during the months of November through April. The hottest and driest period of the year is from June through September. It is not unusual during the summer months to have several consecutive days that the daily temperature exceeds 100 degrees Fahrenheit.

Average temperature, precipitation, and evapotranspiration by month are shown in Table 11-2. Evapotranspiration (ET) is the water lost to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indicator of how much water crops, lawn, garden, and trees need for healthy growth and productivity. ET from a standardized grass surface is commonly denoted as ETo.

Table 11-2. Historical Climate Data

Month	Average Temperature (°F)	Average Precipitation (in.)	Average Standard ETo (in.)
January	52.4	3.22	2.53
February	54.6	3.25	2.87
March	56.7	2.86	4.30
April	60.9	1.29	5.38
May	65.6	0.47	5.82
June	71.3	0.09	6.76
July	77.7	0.04	7.38
August	77.7	0.15	7.09
September	73.9	0.33	5.51
October	66.5	0.71	3.97
November	58.6	1.32	2.89
December	53.3	2.38	2.38
Total		**16.1**	**56.9**
Notes: Precipitation and temperature for NOAA weather station 0407723 in San Bernardino; data from 1893 through 2004; http://wrcc.dri.edu; ETo data for CIMIS weather station 44 at University of California, Riverside; data from 1986 through 2015; http://wwwcimis.water.ca.gov/			

11.1.2 Climate Change

Climate change has the potential to impact water supplies and demands for WVWD. Water demands could increase if summer temperatures rise, or if there are more days with high temperatures. Water supplies could be affected by changes in precipitation and runoff that contribute to groundwater recharge.

WVWD participates in regional planning efforts that have considered potential impacts of climate change. The 2015 Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP) (San Bernardino Valley Municipal Water District, January 2015) included a discussion of climate change and its potential impacts on water demand. The IRWMP included a Climate Change Vulnerability Assessment, which is included in Appendix F of this document. Some areas identified in the vulnerability

assessment include wildfires and potential erosion impacts on water quality, as well as floods and their potential impact on water facilities.

11.2 System Water Use

11.2.1 Water Uses by Sector

WVWD categorizes customers as single family residential, multi-family residential, landscape irrigation, agricultural irrigation, commercial, industrial, institutional, fire service, and hydrant uses. Water deliveries for each customer class for the years 2011 through 2015 are summarized in Table 11-3.

Table 11-3. DWR Table 4-1R. Demands for Raw and Potable Water – Actual (AF)

Use Type	Additional Description	Level of Treatment When Delivered	2011	2012	2013	2014	2015
Single Family		Drinking Water	12,017	12,789	12,400	11,958	9,786
Multi-Family		Drinking Water	531	597	566	553	504
Commercial		Drinking Water	1,450	1,625	1,690	1,654	1,453
Institutional		Drinking Water	1,020	1,232	1,160	1,157	825
Industrial		Drinking Water	886	876	762	770	709
Agricultural irrigation		Drinking Water	117	152	90	111	105
Landscape Irrigation		Drinking Water	1,355	1,674	1,687	1,799	1,319
Golf Course		Drinking Water	292	0	0	0	0
Fire Service		Drinking Water	2	2	1	2	2
Hydrant		Drinking Water	97	143	281	326	273
Sales/Transfers/Exchanges to other agencies	SB County Connection / Glen Helen	Drinking Water	0	0	0	10	92
Nonrevenue		Drinking Water	2,200	2,157	2,074	2,131	2,064
		Total	19,966	21,246	20,710	20,472	17,131

Projected future water use was estimated using two factors: the expected growth in service area population, and the expected change in per-capita consumption. For planning purposes, WVWD estimated that beginning in 2020, its per-capita consumption would be approximately 10 percent higher than the observed 2015 value. While WVWD will continue to encourage conservation, this assumption reflects the possible change in behaviors that may occur after the current drought ends and mandatory drought restrictions are phased out. The estimated future demands are shown in Table 11-4. WVWD does not anticipate any routine or single large water sales to any agencies in the future. WVWD does not anticipate future water use related to saline barriers, groundwater recharge operations, or recycled water. For the purpose of projections, based on data from the past five years, nonrevenue water is assumed to be 10 percent of total sales. WVWD will continue efforts to decrease water loss and thereby reduce gallons per capita per day of water use.

Table 11-4. DWR Table 4-2R. Demands for Raw and Potable Water – Projected (AF)

Use Type	Additional Description	Level of Treatment	2020	2025	2030	2035	2040
Single Family		Drinking Water	11,654	12,538	13,490	14,514	15,616
Multi-Family		Drinking Water	600	646	695	747	804
Commercial		Drinking Water	1,730	1,861	2,002	2,154	2,318
Institutional		Drinking Water	982	1,057	1,137	1,223	1,316
Industrial		Drinking Water	1,944	2,008	2,077	2,151	2,231
Agricultural Irrigation		Drinking Water	100	80	40	20	0
Landscape Irrigation		Drinking Water	1,571	1,691	1,819	1,957	2,105
Golf Course		Drinking Water	0	0	0	0	0
Fire Service		Drinking Water	2	3	3	3	3
Hydrant		Drinking Water	325	349	376	404	435
Sales/Transfers/Exchanges to other agencies	SB County Connection / Glen Helen	Drinking Water	0	0	0	0	0
Nonrevenue		Drinking Water	1,891	2,023	2,164	2,317	2,483
	Total		20,799	22,256	23,802	25,492	27,312

Table 11-5. DWR Table 4-3R. Total Water Demands (AF)

Demand	2015	2020	2025	2030	2035	2040
Potable and Raw Water	17,131	20,799	22,256	23,802	25,492	27,312
Recycled Water Demand	0	0	0	0	0	0
Total Water Demand	17,131	20,799	22,256	23,802	25,492	27,312

11.2.2 Distribution System Water Losses

Based on system data for the past five years, WVWD used 10 percent of total sales to estimate nonrevenue water for future demand projections. Not all nonrevenue water is lost from the system; some is authorized, but unbilled, consumption. WVWD completed a water audit using the AWWA software to estimate its actual water losses. The audit results are summarized in Table 11-6.

Table 11-6. DWR Table 4-4R. Water Loss Summary Most Recent 12 Month Period Available

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss (Acre-feet)
01/2015	639.9

11.2.3 Estimating Future Water Savings

WVWD is committed to long-range planning to provide a reliable, cost-effective water supply to its customers.

For this report, WVWD has projected that future demands will increase at a percentage growth rate that incorporates two factors: the percentage growth in service area population, and potential changes in the per-capita consumption. This approach provides estimates for future system-wide demand that can be used for long-range planning.

In the 2015 UWMP, water suppliers have the option of preparing more detailed demand forecasts by estimating demand factors based on land use categories. For example, WVWD could identify typical water use per single family customer and per commercial account. These customer classes can be further sub-divided by lot size, neighborhood, or other variables. The intent is to quantify the estimated water use per customer in different customer classes, and then to forecast how future changes will impact water use within each customer class.

For this document, WVWD has elected not to develop land use-based demand factors and apply future savings from codes and standards. Recent drought regulations have induced significant changes in water consumption patterns, and there is considerable uncertainty as to how demands will change in the future if the drought subsides. Given this uncertainty, WVWD elected not to quantify passive savings for this UWMP.

11.2.4 Water Use for Lower Income Households

Senate Bill 1087 requires that water use projections in an UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier. WVWD serves portions of five jurisdictions: the City of Rialto, the City of Fontana, the City of Colton, the City of Jurupa Valley, and unincorporated San Bernardino county.

The City of Rialto updated its housing element in 2010. The housing element estimates that about 44% of households are very low- and low-income in the City. However, there is not specific information on very low- or low-income households in the WVWD service area.

The City of Fontana updated its housing element in 2010. The housing element estimates that approximately 38 percent of households are very low- and low-income in Fontana. However, the information is not sufficient to estimate the existing number of lower-income households or the associated water demand in the WVWD service area.

In City of Colton updated its housing element in 2013. The housing element estimates that 51 percent of households in Colton are lower-income.

The County of San Bernardino updated its housing element in May 2007. The Housing Element provides information on regional housing needs and states goals for new housing to accommodate very-low and low-income households. According to the housing element, approximately 42 percent of households in the unincorporated county are very-low or low-income.

The weighted percentage estimate of very-low and low-income households in the WVWD service area is 44 percent. Therefore, it is assumed that 44 percent of future residential demands will come from very-low and low-income households. The estimated demands for lower-income households are shown in Table 11-7. These demands have been included in the projections presented throughout this report.

Table 11-7. Estimated Demands for Lower-Income Households (AF)

Demand	2015	2020	2025	2030	2035	2040
Single Family Residential	4,306	5,128	5,517	5,936	6,386	6,871
Multi-Family Residential	222	264	284	306	329	354
Total	4,527	5,392	5,801	6,241	6,715	7,225

11.3 SB X7-7 Baselines and Targets

In the 2015 UWMP, an urban retail water supplier must set a 2020 water use target (herein called the Compliance Water Use Target) and a 2015 interim target (herein called the Interim Water Use Target).

11.3.1 Updating Calculations from 2010 UWMP

In the 2010 UWMP, WVWD calculated a baseline water use of 316 GPCD. WVWD used Target Method 4 to calculate a compliance water use target of 254 GPCD for 2020, and an interim water use target of 285 GPCD for 2015. In 2010, the actual consumption was calculated as 236 GPCD.

For the 2015 UWMP cycle, DWR has made a GIS-based Population Tool available to calculate service area population using Census Bureau data. WVWD has used this tool to re-calculate its service area population, baseline per-capita use, and compliance targets.

11.3.2 Baseline Periods

Years 2000 to 2009 have been selected for calculation of the 10-year base period, while years 2004 to 2008 have been selected for calculation of the 5-year base period.

11.3.3 Service Area Population

In order to calculate Base Daily Per Capita Water Use for past years, it was necessary to develop population estimates for past years. WVWD's service area population for years 2000 and 2010 was estimated using the DWR Population Tool. Service area population for intermediate years was estimated assuming a constant growth rate between census years.

11.3.4 Gross Water Use

The calculation of gross water use begins with the total amount of water that was put into the potable water distribution system by WVWD. Water that was exported to another agency was then subtracted, leaving the amount used by WVWD retail customers.

For the period of 2000 to 2009, gross water use in the WVWD service area fluctuated between 19,682 and 22,777 acre-feet per year.

11.3.5 Baseline Daily per Capita Water Use

The 10-year average Base Daily Per Capita Water Use for WVWD is 285 GPCD; the 5-year average is 284 GPCD.

11.3.6 2015 and 2020 Targets

After determining baseline water use, SB X7-7 requires that a retail water supplier identify its demand reduction targets. WVWD is choosing to meet SBX7-7 targets as an individual agency rather than as part

of a regional alliance. WVWD has selected Method 4 to calculate the agency's 2020 Compliance Water Use Target and Interim Water Use Target. Compliance Water Use Target under Method 4 is Base Daily GPCD less:

- Indoor residential water savings of 15 GPCD or an amount determined by use of DWR's "BMP Calculator" (WVWD used the default value of 15 GPCD)
- 20 percent savings on all unmetered uses (WVWD has no unmetered uses)
- 10 percent savings on Baseline CII, where Baseline CII is represented by CII use during 2004 (the mid-point of the baseline period)
- 21.6 percent savings on current landscape and water loss uses, where landscape and water loss is estimated as Base Daily GPCD minus Baseline CII and a default indoor water use of 70 GPCD.

WVWD used the DWR Method 4 Target Calculator to calculate its Compliance Water Use Target. This spreadsheet is included in Appendix Q. The resulting Compliance Water Use Target is 232 GPCD, and the Interim Water Use Target is 259 GPCD. The targets are summarized in Table 11-8.

Table 11-8. DWR Table 5-1R. Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline GPCD	2015 Interim Target	Confirmed 2020 Target
10-year	2000	2009	285	259	232
5-year	2004	2008	284		

11.3.7 2015 Compliance Daily per Capita Water Use

Based on 95 percent of the 5-year baseline average, the Maximum Allowable GPCD is 270. The Compliance Water Use Target under Method 4 is less than the Maximum Allowable GPCD, so no adjustments to the Compliance Water Use Target are necessary.

WVWD's actual per-capita consumption in 2015 was 190 GPCD, which is below the Interim Water Use Target for 2015, as shown in Table 11-9.

Table 11-9. DWR Table 5-2R. 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Extra-ordinary Events	Economic Adjust-ment	Weather Normal-ization	Total Adjustments	Adjusted 2015 GPCD	2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015?
190	259	0	0	0	0	190	190	YES

11.4 Demand Management Measures

11.4.1 Water waste prevention ordinances

WVWD, through Article 24, lists use of water considered non-essential to the public health, safety and welfare and, defines what constitutes water wasting pursuant to Water Code Section 350 et seq., Water Code Section 71640 et. seq., and the common law. Article 24 was adopted on August 6, 2015, and is provided in Appendix G.

11.4.2 Metering

WVWD is in the process of changing its entire meter stock to Automatic Meter Reading (AMR). This system eliminates the need for each meter to be visually read by a technician and ensures that water usage is billed correctly. The AMR system will also be highly useful in identifying and addressing customer-side leaks, as well as for understanding and assessing the impacts of various conservation programs. WVWD is currently 75% AMR installed and plans to be 100% installed by 2021.

11.4.3 Conservation pricing

WVWD is in compliance with this DMM. The volumetric portion of District's water revenue accounts for about 71 percent of total revenue. WVWD has a tiered water rate system that is always in place. WVWD charges customers increasing rates based on their water usage during a billing cycle to encourage water conservation.

WVWD completed a rate study in 2012 and implemented an Inclining Block Rate tiered rate structure starting January 1, 2013 (Tier One - 1-10 units, Tier Two - 11-50 units, Tier Three - 51+ units).

11.4.4 Public education and outreach

WVWD provides informational materials to customers through paid advertising, classes, water bills, demonstration gardens, a website, social media and quarterly newsletters. In 2015, WVWD held a series of workshops called the Water 101 class. This class was offered to all customers within the District's service area and covered everything from the History of the District to water quality. One class was dedicated solely to water conservation.

WVWD has revamped its website to include multiple pages on information for water conservation including rebates and programs that WVWD is participating in, water conservation tips for indoor and outdoor use, as well as the ability for customers to report water waste. WVWD's conservation piece of the website is updated on a regular basis to include new ideas. WVWD continues to hold water conservation classes for students at local elementary, middle and high schools located within WVWD. The District also gives tours to local schools of the Treatment Plants and hands out conservation materials.

For the last 10 years WVWD has sponsored a Water Conservation Poster Contest with the elementary schools located in the District. This last year the District had more than 25 teachers participate in the contest as well as over 150 entries. The District will also have conservation messages appear directly on the customer's bill as well as change the bill format by adding a graph that shows customer's current usage compared to previous years.

In 2010, the District, in conjunction with Valley District and other water agencies in the area, partnered to participate in the Inland Empire Garden friendly program which is designed to help customers save water by installing climate friendly plants. For the last several years, the District has created a welcome

package for all new customers including a Leak Detection Guide, the Demonstration Garden brochure and plant list, the Quarterly Newsletter, and the District's Water Conservation Calendar. Landscape Classes, Conservation Workshops, and Information booths at public events are done multiple times during the year. All of the District's outreach information, fliers, brochures and mailers are printed in both English and Spanish.

In early 2014 WVWD partnered with 19 other Inland Empire Water Agencies to form iEfficient.com, a regional approach to conservation and messaging. The outreach campaign is in its second year and has helped implement the following:

- Collaborative communication effort, with more than 20 Inland Empire agencies participating, focused on ending water waste through outreach & education;
- Sharing information unique to the IE through On-Hold messages, Mailers, Bill inserts, Lawn signs, Promotional items, Event participation, and Special outreach events;
- Using Press Conferences, Press Releases, Holding Statements, Fact Sheets, Targeted advertising, Presence on website and outreach materials, Participation in social media, and Regular live events; and
- Use of iEfficient app and iEfficient Customer Relationship Toolkit.

11.4.5 Programs to assess and manage distribution system real loss

WVWD has policies for meter testing and replacement that were implemented in January 2011. WVWD now requires an annual testing of meters 4 inch and larger. The Meter Supervisor must develop a schedule for testing that includes all meters that are 5 years or older. WVWD has a new valve maintenance crew to repair distribution system leaks. WVWD is in the process of installing fire hydrant standard internal check valves so water loss is minimized if a fire hydrant gets hit. WVWD has a full time maintenance (9 full time employees) and meter department (9 full time employees) and a contracted company that helps with any repairs on leaks that are reported by customers or personnel, on a priority basis. The total budget for these departments for FY 2015-2016 is 2.6 million dollars. WVWD repairs approximately 30 leaks a month. The Billing Department Staff also notifies customers, using their monthly meter readings; if it looks like the consumption has increased significantly. Customer Service Staff also provides a letter of thanks to customers for reporting leaks.

11.4.6 Water conservation program coordination and staffing support

Soon after the passage of the Water Conservation Act of 2009 (SB X7-7), which sought a 20% reduction in per capita water use by 2020, WVWD displayed its commitment to conservation by creating a Water Conservation Department. With the creation of this department the District committed a full time Water Conservation Coordinator. The District's conservation department over the last several years has continued to grow with the addition of a full-time Water Conservation Specialist in October 2014, a temporary office employee in July 2015, and a temporary field employee in August 2015 to help patrol and make sure watering restrictions are being followed. The 2014-2015 Fiscal Year Budget for the Conservation Department was approximately $500,000.

In early 2014 the District partnered with 19 other Inland Empire Water Agencies to form iEfficient.com, a regional approach to conservation and messaging. The outreach campaign is in its second year. The Board of Directors of WVWD adopted Ordinance No. 80, Amending Article No. 24 Water Conservation, of the Service Rules and Regulations. The adoption of this ordinance allowed the District to create a Stage III, A,B & C to be able to restrict number of irrigation days allowed by Board action instead of

ordinance adoption. This Ordinance also addressed the changes required by the State Water Resources Control Board on May 5, 2015.

11.4.7 Other demand management measures

- Residential Plumbing Retrofit Kits - package to customers that includes 2 low flow showerheads, 1 kitchen faucet aerator, and 2 bathroom faucet aerators. WVWD plans to keep this program in place through 2020.
- Residential ULFT/HET Rebates - Up to $100 rebate per household, with a total budget of $1,250 for Fiscal Year 2015-2016.
- Residential HEW Rebates - Up to $100 rebate per household, with a total budget of $2,500 for Fiscal Year 2015-2016.
- Residential WBIC Rebates - Up to $100 rebate per household, with a total budget of $5,000 for Fiscal Year 2015-2016.
- Residential HE Nozzles Rebates - Up to $4 per nozzle rebate, with a total budget of $400 for Fiscal Year 2015-2016.
- Residential Turf Replacement Rebates - Up to $1 per square foot, maximum $1,000 rebate, with a total budget of $75,000 for Fiscal Year 2015-2016.
- Proposition 84 Institutional and HOA Turf Removal Program - up to $2.50 per square foot of turf removal and replacing with a drought tolerant landscape.
- Institutional Rebate Programs - rebate program targeted at schools within WVWD's boundaries to offer rebates on an individual basis for toilets and ET controllers for landscaping.
- CII Rebate Programs - WVWD will identify high water users and will work with each company on an individual basis to create a conservation program tailored to their particular needs.
- Disadvantaged Community (DAC) Water/Energy Grant Program - Starting 2016, remove 65,000 square feet of residential turf and replace it with drought tolerant landscaping. Annually, Water Savings of 44 gallons per square foot.

11.4.8 Planned Implementation to Achieve Water Use Targets

WVWD's current per-capita consumption is less than its 2020 compliance target. WVWD expects to continue to implement its current conservation programs to encourage conservation and maintain per-capita consumption below the compliance target.

WVWD will be participating in three major projects with the Santa Ana Watershed Project Authority (SAWPA):

1. Aerial Mapping Project - to use for Technology Based Information Project.
2. Technology Based Information Project - the project includes data, analysis and outreach to WVWD customers through OmniEarth and Dropcountr technology.
3. Turf Removal Projects (Institutional accounts).

11.5 System Supplies

WVWD utilizes three primary sources for drinking water supply: local surface water from flows on the east side of the San Gabriel Mountains, including North Fork Lytle Creek, Middle Fork Lytle Creek, and South Fork Lytle Creek; groundwater; and imported water from the State Water Project (SWP). The

WVWD distribution system is divided into eight pressure zones; it currently has 25 existing reservoirs with a total storage capacity of approximately 72.61 million gallons. WVWD also operates a 14.4-MGD water filtration facility.

11.5.1 Purchased or Imported Water

WVWD receives SWP water from Valley District through the Lytle Turnout off the San Gabriel Feeder Pipeline. Newly constructed metering and transmission facilities will enable WVWD to purchase and treat up to 20 MGD (approximately 23,000 AFY) at final treatment plant expansion. SWP water is treated at the District's Oliver P. Roemer Water Filtration Facility (WFF) and used for potable supply, or can be used to supply non-potable customers, or for groundwater recharge in the Lytle Creek Basin. In 2006 the WFF was expanded to increase production capacity to 14.4 MGD. Ultimately this plant will have a capacity of 20.4 MGD. WVWD has been utilizing SWP water through the Lytle Turnout since 1999.

11.5.2 Groundwater

WVWD draws approximately 65 percent of its water supply from its wells. WVWD's normal operating practice is to pump its wells 16 hours a day during off peak hours to take advantage of Southern California Edison's time of use rate. If, for some reason, wells are not in service (maintenance or repair), WVWD has the ability and right to pump its wells up to 24 hours per day. WVWD has approximately 36 MGD production capability from all of its wells in operation 24 hours per day.

WVWD extracts groundwater from five regional groundwater basins: Bunker Hill and Lytle Creek (which are both part of the SBBA), Rialto-Colton, Riverside North, and Chino Basins. All five basins have been adjudicated and are managed, as discussed further in Chapter 2.

WVWD, in a joint venture with the City of Rialto and Valley District, constructed 25,000 feet of 48-inch transmission line known as the Baseline Feeder. Through an agreement with Valley District, WVWD is to receive 5,000 AFY of supply through this transmission line. WVWD has received water through the Baseline Feeder since 1998. Because this water is not produced by WVWD, it is not included in Table 11-10.

WVWD's historical production for the past five years is shown in Table 11-10.

Table 11-10. DWR Table 6-1R. Groundwater Volume Pumped (AF)

Groundwater Type	Location or Basin Name	Water Quality	2011	2012	2013	2014	2015
Alluvial Basin	Lytle Creek	Drinking Water	2,983	4,002	3,776	3,262	2,159
Alluvial Basin	Riverside North	Drinking Water	3,144	3,932	3,389	2,992	2,065
Alluvial Basin	Rialto-Colton	Drinking Water	4,883	4,093	4,005	3,916	2,505
Alluvial Basin	Bunker Hill	Drinking Water	1,335	1,682	1,885	1,478	1,520
Alluvial Basin	Chino	Drinking Water	0	0	0	0	0
	Total		12,345	13,709	13,055	11,648	8,249

11.5.3 Surface Water

WVWD has the right to divert and export out of the Lytle Creek Region 2,290 gpm when it is available. WVWD can also purchase an additional 1,350 gpm of Lytle Creek flows through an agreement with the

City of San Bernardino (San Bernardino is not able to utilize their surface water flows), which is treated at the Oliver P. Roemer WFF. WVWD also utilizes Lytle Creek surface water flows for groundwater recharge in the Lytle Creek Basin.

11.5.4 Stormwater

WVWD is participating in regional planning efforts to capture additional stormwater for purposes of groundwater recharge.

11.5.5 Wastewater and Recycled Water

The wastewater collected within different portions of the WVWD water service area is treated by the City of Rialto (City), the City of Colton, San Bernardino County, or the Inland Empire Utilities Agency.

11.5.5.1 Recycled Water Coordination

The City of Rialto is updating its Recycled Water Master Plan to investigate the expansion of its existing tertiary treatment plant and reclaimed water system as a way to supplement the City's water supply.

11.5.5.2 Wastewater Collection, Treatment, and Disposal

The City of Rialto has a 12.0 MGD tertiary treatment plant with a current flow of 8 MGD. All of the City's treatment plant effluent meets Title 22 for recycled water usage in restricted irrigation. Reclaimed water not currently being used for irrigation is discharged into the Santa Ana River. WVWD is evaluating the feasibility of adding recycled water to its non-potable supply usage, but would rely on the City of Rialto to provide the recycled water from their wastewater treatment facility.

Table 11-11. DWR Table 6-2R. Wastewater Collected within Service Area in 2015

Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2015 (AF)	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
City of Rialto	Estimate	4,480	City of Rialto	Rialto Wastewater Treatment Plant	Yes	Yes
City of Colton	Estimate	550	City of Colton	Colton	No	No
San Bernardino County	Estimate	340	San Bernardino County	Lytle Creek North Water Reclamation Plant	No	No
Inland Empire Utilities Agency	Estimate	900	Inland Empire Utilities Agency	Recycled Plant No. 4	No	No
	Total Wastewater Collected from Service Area in 2015	6,270				

11.5.5.3 Recycled Water System

WVWD does not currently have a recycled water distribution system. WVWD is completing a master plan for potential use of recycled water within its service area. WVWD's plans for recycled water are still preliminary, and the expected beneficial use has not been quantified.

11.5.5.4 Actions to Encourage and Optimize Future Recycled Water Use

WVWD is evaluating current large landscape and non-potable users for potential use of recycled water and the infrastructure required to supply that demand. To the extent feasible, if and when recycled water is available to WVWD, this water will be offered to WVWD customers.

Table 11-12. DWR Table 6-6R. Methods to Expand Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Planning	Continue planning efforts to identify potential cost-effective uses of recycled water	2020	Not yet defined

11.5.6 Desalinated Water Opportunities

The need for brackish groundwater desalting is somewhat limited in the San Bernardino Valley. While elevated salts are a concern in the groundwater basins of the Western Judgment (SBBA, Rialto-Colton, Riverside), average TDS levels in all of these basins are currently below 500 mg/L. However, elevated salts are an issue for retailers that overlie the San Timoteo Groundwater Basin, and agencies in this basin are considering implementing desalter operations. The area is fortunate to have a brine line which can transport non-reclaimable waste, by gravity, from the City of San Bernardino Water Reclamation Plant to the Orange County Sanitation District's treatment plant.

The development of (or financial participation in) a new seawater desalination project, while costly, is being investigated by other wholesale and retail water agencies in southern California. Because the San Bernardino Valley is an inland area, in order for desalination to work it would be necessary for agencies in the San Bernardino Valley to join with other water purveyors in the development of a coastal desalination facility and then receive water from the SWP supplies of other participants via an exchange. It is not cost-effective for the San Bernardino Valley to receive direct delivery of desalted ocean water.

Seawater desalination is an alternative that is technically viable. However, production and treatment costs have historically been several times higher than those of SWP costs and conventional treatment.

11.5.7 Exchanges or Transfers

WVWD currently has interconnections with the Cities of Rialto, Colton and San Bernardino, the Fontana Water Company, Marygold Mutual Water Company, and Valley District which can be utilized as needed for short-term supply needs. These connections are not typically used for extended periods.

11.5.8 Future Water Projects

To meet the future demands within the system, WVWD plans to rehabilitate existing wells, to drill new wells, and equip wells with wellhead treatment if required. These wells are planned for various groundwater basins and pressure zones within the distribution system.

Groundwater is not the only planned supply source to be utilized by WVWD to meet the anticipated future demands. WVWD has expanded the Oliver P. Roemer Water Filtration Facility to allow additional treatment of SWP water when available. A future expansion of the plant will increase the ultimate capacity of the facility to 20.4 MGD.

When planning future water supply sources, WVWD selects projects that will provide sufficient supply to meet peak day demands. When possible, these sources are planned by pressure zone, thereby reducing the need to lift water to a higher zone. WVWD currently pumps its wells 16 hours per day to take advantage of Southern California Edison's reduced off peak pumping rate. This pumping schedule lowers overall costs and allows WVWD operational flexibility.

As development progresses and increased demands are placed on the system, WVWD will determine which projects to implement. Although WVWD may not need to utilize each source to its full potential, construction of these water supply projects gives WVWD this option should one or more source be off line due to maintenance. Known future supply developments are listed in Table 11-13.

Table 11-13. DWR Table 6-7R. Expected Future Water Supply Projects or Programs

Name of Future Projects or Programs	Joint Project with Other Agencies?	Other Agency Names	Description	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Agency (AF)
Expansion of Roemer Water Filtration Facility	No		WVWD has expanded the Oliver P. Roemer Water Filtration Facility to allow additional treatment of SWP water when available. A future expansion of the plant will increase the ultimate capacity of the facility to 20.4 mgd.	2025	Average Year	5,000

11.5.9 Summary of Existing and Planned Sources of Water

WVWD's actual supplies used during 2015 are summarized in Table 11-14.

Table 11-14. DWR Table 6-8R. Water Supplies - Actual

Water Supply	Additional Detail on Water Supply	2015 Actual Volume (AF)	2015 Water Quality
Surface Water	Lytle Creek	2,271	Drinking Water
Purchased or Imported Water	SWP Water	2,244	Drinking Water
Groundwater	Lytle Creek	2,159	Drinking Water
Groundwater	Riverside North	2,065	Drinking Water
Groundwater	Rialto-Colton	2,505	Drinking Water
Groundwater	Bunker Hill	1,520	Drinking Water
Groundwater	Chino	0	Drinking Water
Purchased or Imported Water	Baseline Feeder (Bunker Hill)	4,367	Drinking Water
	Total	17,131	

WVWD plans to utilize a greater amount from each of its supply sources, up to the legal rights and availability. WVWD's available supplies for future years are summarized in Table 11-15.

Table 11-15. DWR Table 6-9R. Water Supplies – Projected (AF)

Water Supply	Additional Detail on Water Supply	2020	2025	2030	2035	2040
Surface Water	Lytle Creek	5,500	5,500	5,500	5,500	5,500
Purchased or Imported Water	SWP Water	7,000	7,000	7,000	7,000	7,000
Groundwater	Riverside North	2,500	3,500	4,000	4,500	4,500
Groundwater	Rialto-Colton	6,000	6,000	6,000	6,000	6,000
Groundwater	SBBA Groundwater (Bunker Hill / Lytle)	9,500	14,000	17,000	19,500	19,500
Groundwater	Chino	900	900	900	900	900
Purchased or Imported Water	Baseline Feeder (Bunker Hill)	5,000	5,000	5,000	5,000	5,000
	Total	36,400	41,900	45,400	48,400	48,400

11.6 Water Supply Reliability Assessment

11.6.1 Imported Water

During times of State-wide drought conditions, the availability of SWP water may be reduced. These conditions are normally known in advance, providing WVWD with the opportunity to plan for the reduced supply. During a drought period, it is Valley District's priority to meet obligations to maintain lake levels at Big Bear Lake and to make direct deliveries to the water treatment plants operated by Redlands, WVWD, EVWD, YVWD, and SBMWD.

11.6.2 Groundwater

Some of the WVWD's wells have been impacted by arsenic, perchlorate and volatile organic carbons (VOCs). WVWD has implemented wellhead treatment as needed and continues to monitor groundwater contamination and the movement of groundwater contaminant plumes. These past and ongoing groundwater treatment projects have demonstrated that treatment is an economically viable alternative for handling arsenic, perchlorate and VOCs. Based on current conditions, water quality is not

anticipated to affect WVWD supply reliability. However, water quality issues are constantly evolving. WVWD will take action to protect and treat supply when needed, but it is well recognized that water quality treatment can have significant costs.

Geologic hazards within Lytle Creek have the potential to disrupt the water supply system by restricting the flow and/or introducing large quantities of suspended solids to the runoff, thereby increasing turbidity levels. To deal with this water quality issue, WVWD added pre-treatment capability at the Oliver P. Roemer WFF to achieve both turbidity removal and total organic carbon reduction.

11.6.3 Reliability by Type of Year

During normal and wet years, Valley District uses SWP water for groundwater recharge. Therefore, this water is available for production during dry years. Through its use of groundwater storage, Valley District does not anticipate a reduction in the availability of SWP water during single or multiple dry years.

Due to the size of the groundwater basins utilized by WVWD, a single dry year will not affect well production. The annual amount produced in past normal, single dry, or multiple dry water years from a basin does not give an accurate representation of potential basin production. Factors such as lower system demand, cost of pumping, inoperable wells, pumping duration, replenishment costs, water quality, cost of supply and the ability to treat water all affect annual basin production numbers.

WVWD has been able to utilize up to 5,500 AFY during normal times from Lytle Creek surface flows and projects a minimum of 2,130 AFY during extended drought conditions. WVWD and its predecessors have been utilizing Lytle Creek surface flows for water supply for more than 130 years.

11.6.4 Regional Supply Reliability

WVWD is committed to minimizing the need to import water from other regions. WVWD operates a number of conservation programs to implement various Demand Management Measures, helping to reduce the need for imported water.

11.7 Water Shortage Contingency Planning

Water supplies may be interrupted or reduced significantly in a number of ways, such as drought which limits supplies, an earthquake which damages delivery or storage facilities, or a regional power outage. Chapter 5 of this RUWMP describes water shortage contingency planning for regional water supply sources (imported water, groundwater). This section focuses on water shortage contingency planning for WVWD.

In order to minimize the social and economic impact of water shortages, WVWD will manage water supplies prudently. As the shortages become evident to WVWD, the District will invoke the appropriate stage, approved by the Board of Directors. Shortages may evoke a stage at any time. The four-stage rationing plan to be undertaken by WVWD in response to water supply shortages is listed in the following sections and is described in the “Water Conservation Provisions of Stages 2, 3 and 4”.

11.7.1 Stages of Action

During times of normal supply, it is recommended that water conservation be practiced within the home or business, and all restaurants are requested not to serve water to their customers unless specifically

requested by the customer. Stage 1 also lists water uses considered nonessential to the public health, safety, and welfare, and would be considered wasting of water and are therefore prohibited. Subsequent stages include more extensive water saving regulations. WVWD's Water Shortage Contingency Plan has four stages, as shown in Table 11-16.

Table 11-16. DWR Table 8-1R. Stages of WSCP

Stage	Percent Supply Reduction	Water Supply Condition
1	0	Normal Condition
2	20	Water Alert
3	25	Water Warning (includes sub-stages A, B, and C)
4	30 to 50	Water Emergency

11.7.2 Prohibitions on End Uses

The water use prohibitions for each stage are shown in Table 11-17.

Table 11-17. DWR Table 8-2R. Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Landscape - Other landscape restriction or prohibition	The use of sprinklers for any type of irrigation during high winds is prohibited.	Yes
1	Landscape – Limit landscape irrigation to specific times	Limit all landscape irrigation to between the hours of 8:00 p.m. and 6:00 a.m. Hand watering should be done between 6:00 p.m. and 8:00 a.m. Drip irrigation and hand watering while gardening is exempt from this recommendation. Water being used during repair or maintenance of watering system is exempt from this section.	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Use of water for outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures is prohibited.	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	No person shall permit water to leak from any facility, improvement or plumbing fixture on his/her/its premises; said leak shall be repaired in a timely manner.	Yes
1	Other - Require automatic shut of hoses	Washing of automobiles, trucks, trailer, boats, and other mobile equipment is prohibited unless done with a hand held device equipped with an automatic shut off trigger nozzle. This does not apply to commercial car washes utilizing a recycling system or when the health and safety of the public would necessitate.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Water Features - Restrict water use for decorative water features, such as fountains	No water shall be used to clean, fill, operate or maintain levels in decorative fountains unless the water is part of a recycling system.	Yes
1	Other – Prohibit use of potable water for washing hard surfaces	There shall be no application of water to sidewalks, walkways, driveways, parking areas, patios, porches, verandas, tennis courts, or other paved, concrete, or other hard surface areas, except that flammable or other similarly dangerous or unhealthy substances may be washed from said areas by direct hose flushing for the benefit of public health or safety.	Yes
1	Landscape – Prohibit certain types of landscape irrigation	The irrigation of potable water of ornamental turf on public street medians is prohibited. The term "median" shall mean the strip of land between street lanes.	Yes
2	CII - Restaurants may only serve water upon request	All restaurants prohibited from serving water to their customers except when requested by customer.	Yes
2	CII – Lodging establishment must offer opt out of linen service	Operators of hotels and motels must provide guests with the option of choosing not to have towels and linens laundered daily. The hotels and motels shall prominently display notice of this option in each guestroom using clear and easily understood language.	Yes
2	Landscape - Limit landscape irrigation to specific days	Limit all landscape irrigation to four (4) days per week for no more than ten (10) minutes per station per day. This provision does not apply to any landscape that has water-efficient devices that are operated properly. Water-efficient devices are drip irrigation systems and operational weather-based irrigation controllers. The term "week" is defined as Sunday through Saturday.	Yes
2	Other - Prohibit use of potable water for construction and dust control	District will screen all new applications for water service installations and will limit water use before occupancy to that essential use for construction and testing of landscape plumbing. Limited landscaping for new development shall be allowed as approved by the District. Water use for compaction, dust control, and other types of construction shall be by permit only and will be limited to conditions of the permit or may be prohibited as determined by the General Manager or his/her designee.	Yes
2	Other – Customers must repair leaks, breaks, and malfunctions in a timely manner	Repair all leaks within seventy-two (72) hours of notification by the District unless other arrangements are made with the general manager of the District ("General Manager").	Yes
2	Landscape – Other landscape restriction or prohibition	Irrigating landscaping, including, but not limited to, turf and ornamental landscapes during and within forty-eight (48) hours following measurable precipitation is prohibited.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	Other water feature or swimming pool restriction	Swimming pools, ornamental pools, fountains, water displays, hot tubs, spas and artificial lakes shall not be filled or refilled after being drained.	Yes
2	Other – Prohibit use of potable water for construction and dust control	Water used for compaction, dust control, and other types of construction shall be by permit only and will be limited to conditions of the permit or may be prohibited as determined by the General Manager, or his/her designee.	Yes
3A	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Washing of automobiles, trucks, trailers, boats, airplanes, and other types of mobile equipment are prohibited. Washing of the above-listed vehicles or mobile equipment shall be allowed only at a commercial car wash where recirculating water is being utilized.	Yes
3A	Landscape - Limit landscape irrigation to specific times	All agricultural water users shall irrigate only at times approved by the District.	Yes
3A	Water Features - Restrict water use for decorative water features, such as fountains	Swimming pools, ornamental pools, fountains, water displays, hot tubs, spas, and artificial lakes shall not be refilled or filled after being drained.	Yes
3A	Landscape – Limit landscape irrigation to specific days	Limit all landscape irrigation to three (3) days per week for no more than ten (10) minutes per station per day. Drip systems that are operated efficiently are exempt from these regulations.	Yes
3A	Other – Customers must repair leaks, breaks, and malfunctions in a timely manner	Repair all leaks within forty-eight (48) hours of notification by the District unless other arrangements are made with the General Manager.	Yes
3B	Landscape – Limit landscape irrigation to specific days	Limit all landscape irrigation to two (2) days per week for no more than ten (10) minutes per station per day.	Yes
3C	Landscape – Limit landscape irrigation to specific days	Limit all landscape irrigation to one (1) day per week for no more than ten (10) minutes per station per day.	Yes
4	Landscape - Prohibit all landscape irrigation	No lawn or landscape water will be allowed.	Yes
4	Other - Prohibit use of potable water for construction and dust control	No construction water use to be allowed, construction meters to be locked off or removed.	Yes
4	CII – Other CII restriction or prohibition	Commercial nurseries shall water only between the hours of 11:00 p.m. and 6:00 a.m. and only with hand-held devices or with drip irrigation systems.	Yes
4	Landscape – Prohibit all landscape irrigation	The use of water shall be limited to essential household, commercial, manufacturing, or processing uses only, except where other uses may be allowed by permit	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
4	Landscape – Limit landscape irrigation to specific times	All agricultural water users shall irrigate only at times approved by the District.	Yes

11.7.3 Penalties, Charges, Other Enforcement of Prohibitions

Consumption limits in the progressively restrictive stages are imposed on different uses. These are based on percentage reductions in water allotments, and restrictions on specific uses. The specific percentage reductions at each stage and for each user class are detailed in the ordinance. The individual customer allotments will be based on the previous year's use. This provides WVWD a basis for reviewing appeals.

Mandatory provisions to reduce water use during the different stages of water shortage are also summarized in the ordinance. Provisions of Article 24 - Water Conservation, adopted August 6, 2015, were adopted pursuant to Sections 375 and 376 of the California Water Code. Any second or subsequent violation of this policy after notice as specified in Section 2411 1(a) is a misdemeanor (California Water Code Section 377).

11.7.3.1 Violations

In addition to the remedy of criminal prosecution available to the District, violation of the Ordinance may result in the imposition of surcharges and restriction and/or termination of water service as set forth below:

- First Violation – Notice of Non-Compliance – a written warning accompanied by a copy of this Ordinance, delivered by U.S. Mail and/or hung on customer's door.
- Second Violation – Warning of Penalties – a written warning notice of future imposition of penalties that could be placed on the customer's water bill.
- Third Violation (within one (1) year) - a surcharge of $100.00.
- Fourth Violation (within one (1) year of the first violation) – a surcharge of $300.00, and installation of flow restricting device in the meter for a minimum of ninety-six (96) hours. Said restricted flow shall meet minimum County Health Department's standards, if any have been established. If said ninety-six (96) hour period ends on a weekend or holiday, full service will be restored during the next business day.
- Fifth Violation (within one (1) year of the first violation) – a surcharge of $500.00, and termination of service for such period as the Board determines to be appropriate under the circumstances, following a hearing regarding said issue. Written notice of the hearing shall be mailed to the customer at least ten (10) days before the hearing.

Any surcharge hereunder shall be in addition to the basic water rates and other charges of the District for the account and shall appear on and be payable with the billing statement for the period during which the violation occurred; non-payment shall be subject to the same remedies available to the District as for non-payment of basic water rates.

In addition to any surcharge, a customer violating this Ordinance shall be responsible for payment of the District's charges for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service per the District's Schedule of Charges then in effect. Such charges shall be paid prior to the removal of the flow restrictor or reconnection of service, whichever the case may be.

11.7.4 Consumption Reduction Methods

WVWD uses a comprehensive conservation program to encourage consumption reduction throughout its service area. The District's consumption reduction methods are identified in Table 11-18.

Table 11-18. DWR Table 8-3R. Stages of WSCP - Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
All	Expand Public Information Campaign	Provide reminder notices regarding noted water waste and offer community outreach programs
2	Decrease Line Flushing	
2	Other - Use historical data instead of performing fire flow tests for new developments	
2	Other - Screen all new applications for water service installations and limit water use before occupancy	
2	Reduce system water loss	Repair all leaks within 72 hours
3	Reduce system water loss	Repair all leaks within 48 hours

11.7.5 Determining Water Shortage Reductions

The mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency plan will be the review of the daily production figures and the monthly water meter readings. The General Manager of WVWD, or his designee, shall access all available water supply data and shall make a report of his findings to the Board of Directors at the next regular meeting or at a special meeting called for that purpose. The Board of Directors at that time determine and declare which of the four previously discussed conditions WVWD's water supply is in and the extent of water conservation required to prudently plan for and supply water to the District's customers.

11.7.6 Revenue and Expenditure Impacts

During Stages 2 through 4 of the District's Water Shortage Contingency Plan, water consumption will decrease based upon each individual stage and the amount of reduction goal achieved. The impacts of these reductions will result in a reduction in water sales revenues and a reduction of water production expenditures. In order to mitigate the financial impacts of a water shortage, WVWD maintains sufficient funds within a Rate Stabilization Account. These funds could be used to stabilize water rates during periods of water shortage or disasters affecting the water supply.

11.7.7 Resolution or Ordinance

To offset the prolonged effects of the drought periods, the Board of Directors adopted a Water Conservation Plan with Ordinance No. 68 on July 5, 1990 by adding Article No. 24 entitled "Water Conservation" to its water service regulations and a Water Shortage Contingency Plan with Ordinance No. 69 on February 6, 1992 which amended portions of the Water Conservation Plan. On August 6, 2015, the Board of Directors amended Resolution No. 387 through Ordinance Number 80, attached in

Appendix G, which established water service regulations, schedules of rates, and charges. Article No. 24 describes Water Conservation objectives and outlines four stages of action to be implemented during a water shortage. WVWD's Plan includes voluntary and mandatory stages.

The purpose of Article 24 is to provide water conservation measures in order to minimize the effect of a water shortage on the citizens of, and the economic well-being of, the communities WVWD serves. This Article adopts provisions that will significantly reduce the wasteful and inefficient consumption of water, thereby extending the available water resources required for the domestic, sanitation, and fire protection needs of the citizens of the communities they serve while reducing the hardship on WVWD and the general public to the greatest extent possible.

11.7.8 Catastrophic Supply Interruption

Extended multi-week supply shortages due to natural disasters or accidents which damage all water sources are unlikely. WVWD's 25 storage reservoirs have a combined capacity of over 72 million gallons, which is sufficient water to meet the health and safety requirements of 50 gallons per day per capita for approximately 80,000 residents for 18 days. This assumes zero non-residential use. Under emergency power outages or a catastrophic earthquake conditions, the existing storage is expected to provide a supply of four days of average day demand or 2.5 days under maximum summer demand. WVWD also has interconnections with other agencies for emergency supplies.

WVWD has portable back-up generators that can be used in the event of an area-wide power outage. These generators can be located on both wells and booster stations to continue water production. These generators will be located in the northern part of the distribution system. Water can then be boosted to higher zones or gravity fed to the lower zones. In addition to the portable generators, WVWD will be installing back-up generators at the Zone 5 and 6 booster stations.

11.7.9 Minimum Supply Next Three Years

The UWMP Act requires a retailer to quantify the minimum water supply available during the years 2016 to 2018, assuming years 2016 to 2018 repeat the driest three-year historic sequence for each water supply source. WVWD's estimated minimum supplies are shown in Table 11-18. These supplies are based on the anticipated reliability of imported SWP water from Valley District, local surface water, and local groundwater.

Table 11-19. DWR Table 8-4R. Minimum Supply Next Three Years (AF)

Available Water Supply	2016	2017	2018
Available Water Supply	33,030	33,030	33,030

11.8 Supply and Demand Assessment

There has been a historical trend associated with drier years and an increase in water use among agencies. Conservation efforts have proven to be effective in decreasing water use in dry years, such as the past three years (2013-2015).

For this report, WVWD has estimated that demands could increase 10 percent during a single dry year. During a multiple dry year period, it is expected that conservation messaging and restrictions would lead

to consumption dropping back down to normal year levels in the second dry year, and falling a further 10 percent in the third dry year.

The following tables summarize the anticipated supplies and demands for WVWD.

Table 11-20. DWR Table 7-2R. Normal Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	36,400	41,900	45,400	48,400	48,400
Demand Totals	20,799	22,256	23,802	25,492	27,312
Difference	15,601	19,644	21,598	22,908	21,088

Table 11-21. DWR Table 7-3R. Single Dry Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	33,030	38,530	42,030	45,030	45,030
Demand Totals	22,879	24,481	26,183	28,041	30,043
Difference	10,151	14,049	15,847	16,989	14,987

Table 11-22. DWR Table 7-4R. Multiple Dry Years Supply and Demand Comparison (AF)

Year	Totals	2020	2025	2030	2035	2040
First Year	Supply Totals	33,030	38,530	42,030	45,030	45,030
	Demand Totals	22,879	24,481	26,183	28,041	30,043
	Difference	10,151	14,049	15,847	16,989	14,987
Second Year	Supply Totals	33,030	38,530	42,030	45,030	45,030
	Demand Totals	20,799	22,256	23,802	25,492	27,312
	Difference	12,231	16,274	18,228	19,538	17,718
Third Year	Supply Totals	33,030	38,530	42,030	45,030	45,030
	Demand Totals	18,719	20,030	21,422	22,943	24,580
	Difference	14,311	18,500	20,608	22,087	20,450

12 Yucaipa Valley Water District

12.1 System Description

Yucaipa Valley Water District (YVWD) was formed as part of a reorganization, pursuant to the Reorganization Act of 1965, being Division I of Title 6 of the Government Code of the State of California. This reorganization consisted of the dissolution of the Calimesa Water Company and formation of Improvement District No. 1 of YVWD as successor-in-interest thereto, and the dissolution of Improvement District "A" of the San Bernardino Valley Municipal Water District and the formation of Improvement District "A" of YVWD as successor-in-interest thereto. On September 14, 1971, the Secretary of State of the State of California certified and declared the formation of the District.

YVWD operates under the County Water District Law, being Division 12 of the State of California Water Code. Although the immediate function of the District at the time was to provide water service, YVWD currently provides a variety of services to residential, commercial and industrial customers. These services include: potable water service, drinking water treatment, recycled water service, sewer collection, sewer treatment and salinity elimination.

Table 12-1. Public Water System

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
36-055	Yucaipa Valley Water District	12,304	9,595
	TOTAL	12,304	9,595

YVWD is located in the upper portion of the Santa Ana Watershed approximately 40 miles west of Palm Springs, 70 miles east of Los Angeles, and 120 miles north of San Diego in a high elevation valley at the base of the San Bernardino Mountain Range. YVWD's primary service area ranges in elevation from a low elevation of 2,044 feet above sea level to a high elevation of 5,184 feet above sea level. The range in elevation of 3,140 feet within the District requires YVWD to provide water service from 18 separate pressure zones.

YVWD's current service area encompasses approximately 25,742 acres, or 40 square miles which include the City of Calimesa and the City of Yucaipa. Neighboring cities include the City of Redlands and the City of Beaumont. YVWD's sphere of influence expands the acreage to 43,525 acres, or 68 square miles.

The YVWD service area includes two mutual water companies the Western Heights Water Company and the South Mesa Water Company. The service area of the Western Heights Mutual Water Company is 4.53 square miles (2,902 acres) and the service area of the South Mesa Mutual Water Company is 4.00 square miles (2,561 acres). In the future, the population of Western Heights Mutual Water Company and South Mesa Water Company are expected to have limited growth as compared to the larger service area boundary of YVWD.

Table 12-2. DWR Table 2-3R Agency Identification

Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency 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

Table 12-3. DWR Table 2-4R: Water Supplier Information Exchange – Wholesale supplier's name

Wholesale Water Agencies
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
San Bernardino Valley Municipal Water District
San Gorgonio Pass Water Agency

Figure 12-1 shows the YVWD service area and sphere of influence boundary.

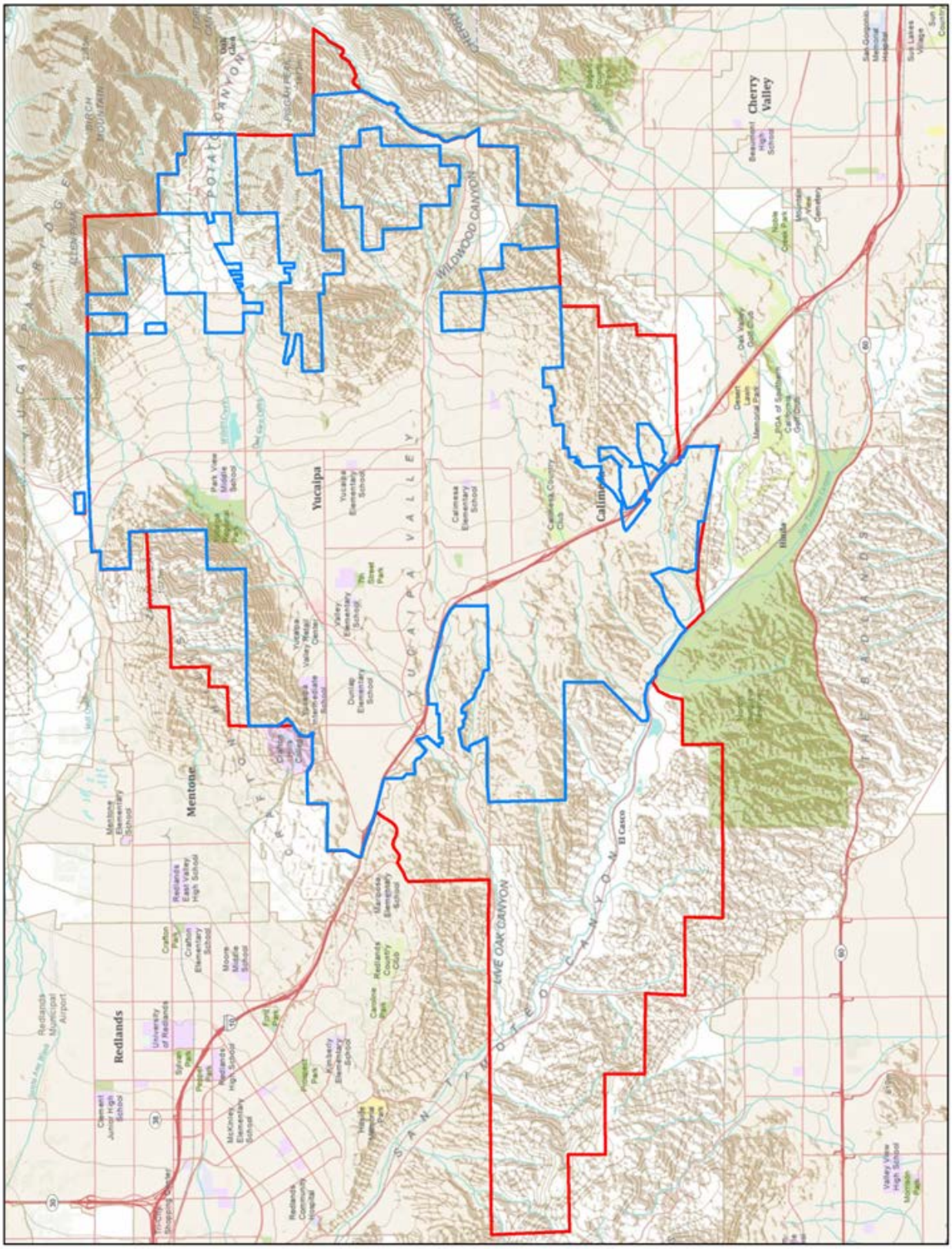


Figure 12-1 Yucaipa Valley Water District Service Area boundary (blue) and Sphere of Influence (red).

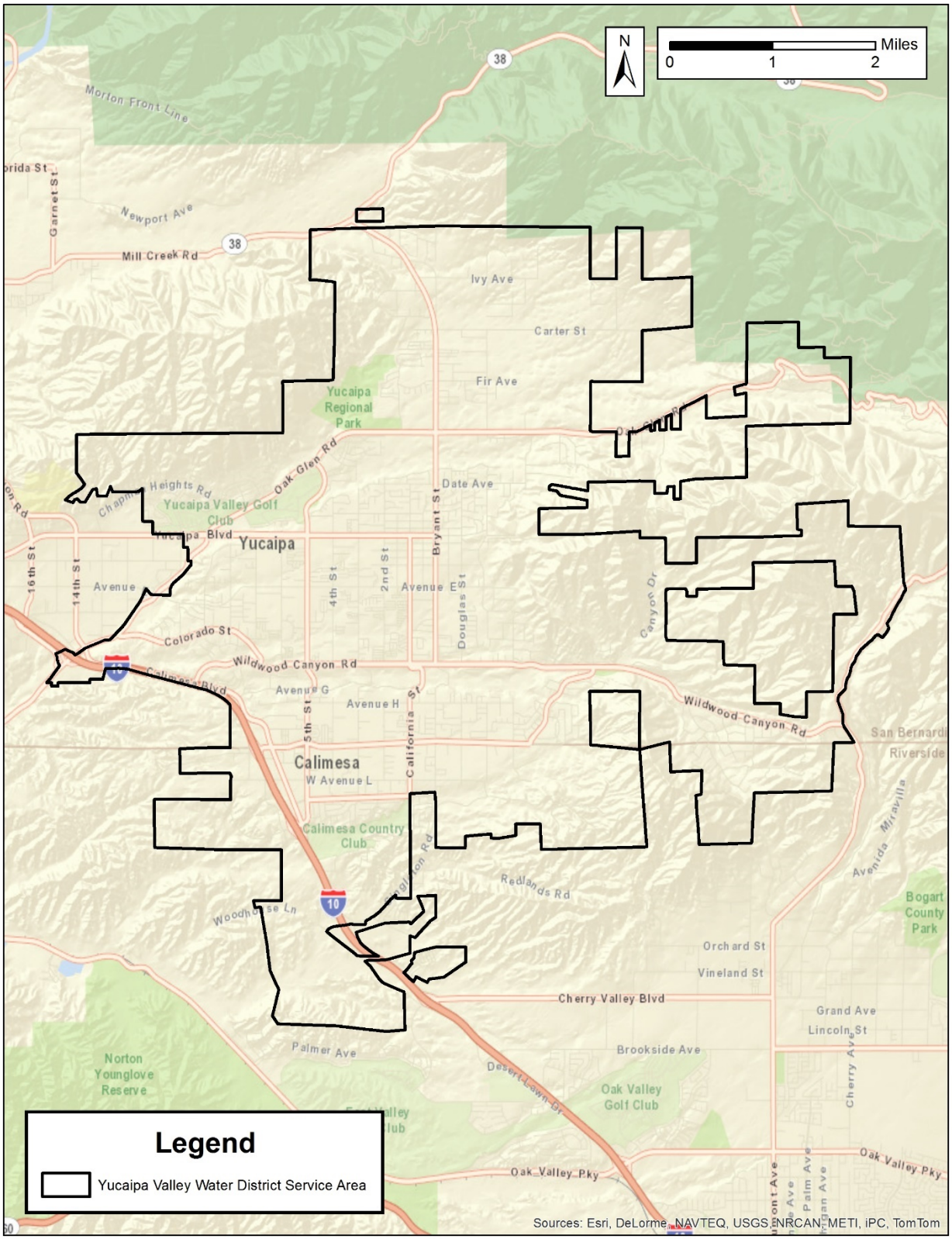


Figure 12-2. Yucaipa Valley Water District Service Area

To calculate the population of the YVWD service area, the YVWD service area boundary in Figure 12-2 was used with census data to provide population estimates for 1990, 2000, and 2010. Population for intermediate non-census years was estimated using an anticipated growth rates based on future development projections. The service area population for 2015 was estimated using the number of water connections in 2010 and 2015. The estimated population of Western Heights Mutual Water Company and South Mesa Mutual Water Company are not included in these calculations.

The estimated service area populations are shown in Table 12-4 for the existing service area of YVWD.

Table 12-4 DWR Table 3-1R. Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040	2045
Population Served	44,745	47,809	51,676	55,976	60,558	65,410	69,207

12.2 Service Area Climate

YVWD is located in the upper portion of the Santa Ana Watershed within the South Coast Hydrologic Region. Temperatures range from an average high of 78º and an average low of 49º. The record high for the area is 117º and the record low is 17º.

The annual average rainfall for the area is about 15.80 inches per year. The climate is characterized by hot dry summers when temperatures can rise above 100º, and moderate winters, with rare freezing temperatures. A major portion of the precipitation occurs between December and March. Snow in the upper reaches of the area is possible, but is not considered an important contributing factor to runoff.

Average temperature, precipitation, and evapotranspiration by month are shown in Table 12-5. Evapotranspiration (ET) is the loss water to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indicator of how much water crops, lawn, garden, and trees need for healthy growth and productivity. ET from a standardized grass surface is commonly denoted as ETo. These data are based on 30 years of record (1986-2015) at Station 044 (University of California Riverside) within the California Irrigation Management Information System (CIMIS).

Table 12-5. Historical Climate Data

Month	Average Minimum Temperature (°F)	Average Maximum Temperature (°F)	Average Precipitation (in.)	Average Standard ETo (in.)
January	39.3	64.7	2.67	3.32
February	41.3	66.1	2.65	2.41
March	43.6	69.1	2.31	4.62
April	46.8	73.7	1.18	5.58
May	51.1	78.5	0.48	6.32
June	55.2	86.7	0.11	5.37
July	60.3	94.5	0.06	7.60
August	60.6	94.2	0.15	6.68
September	57.5	90.0	0.29	5.89
October	51.2	81.0	0.70	4.40
November	44.0	72.6	1.14	3.18
December	39.6	65.9	1.79	2.08
Annual	49.2	78.1	13.53	57.45
Notes: Precipitation and temperature for NOAA weather station 0407723 in San Bernardino; data from 1893 through 2004; http://wrcc.dri.edu; ETo data for CIMIS weather station 44 at University of California, Riverside; http://wwwcimis.water.ca.gov/				

12.3 System Water Use

12.3.1 Water Uses by Sector

YVWD has experienced significant growth in the last 20 years as with many areas in San Bernardino and Riverside County. Within the last 8 years Yucaipa and Calimesa's growth has slowed due to overall economic conditions across the United States.

YVWD categorizes its water customers based on the following categories (the percentages represent the proportionality of service connections as of March 31, 2016):

- Single Family Residential - 91.84%
- Multi-Family Residential - 4.00%
- Commercial - 1.79 %
- Irrigation Potable - 0.88%
- Institutional - 0.56%
- Irrigation - Recycled Water - 0.55%
- Construction Water - 0.17%
- Fire Service - 0.13%
- Industrial - 0.07%

YVWD anticipates a fairly consistent distribution of customer its customer base in the future. Actual water deliveries from 2011 through 2015 are provided in Table 12-6.

Sources of nonrevenue water include:

- Customer Meter Inaccuracies - Customer meters represent one of the main sources of nonrevenue water as they tend to under-represent actual consumption in the water system. YVWD has a replacement program to replace malfunctioning meters and a systematic program to replace and upgrade water meters on a 10-year basis.

- Storage Reservoir overflows - This represents unrecorded water use when reservoirs overflow.

- Leaks from water lines - Leakage from water pipes is a common occurrence in water systems. A significant number of leaks remain undetected over long periods of time as they are very small; however, these small leaks contribute to the overall nonrevenue water.

The historic and estimated future demands are shown in Table 12-6 and Table 12-7 in acre feet (af).

Table 12-6. DWR Table 4-1R. Demands for Raw and Potable Water – Actual

Use Type	Level of Treatment When Delivered	2011	2012	2013	2014	2015
Single Family	Drinking Water	7,536.36	8,184.36	8,039.54	8,235.27	6548.60
Multi-Family	Drinking Water	1,223.41	1,242.32	1,240.91	1,201.16	1050.34
Commercial	Drinking Water	315.42	332.81	338.18	332.82	298.00
Construction Water	Drinking Water	26.63	18.02	19.25	61.48	30.03
Fire Service	Drinking Water	0.05	0.10	0.00	0.18	0.31
Industrial	Drinking Water	82.11	91.02	46.76	88.40	50.05
Institutional	Drinking Water	178.39	211.78	201.36	216.61	149.61
Landscape Irrigation	Drinking Water	615.33	697.03	618.58	633.94	456.88
Nonrevenue	Drinking Water	1,541.05	1,021.04	1360.80	1109.06	1010.97
	Total	**11,518.75**	**11,801.48**	**11,865.38**	**11,878.91**	**9,594.78**

Table 12-7. DWR Table 4-2R. Demands for Raw and Potable Water – Projected

Use Type	Level of Treatment	2020	2025	2030	2035	2040
Single Family	Drinking Water	7,510	7,737	7,986	8,248	8,522
Multi-Family	Drinking Water	1,161	1,196	1,234	1,275	1,317
Commercial	Drinking Water	315	325	335	346	358
Construction Water	Drinking Water	30	31	32	33	34
Industrial	Drinking Water	70	72	74	77	79
Institutional	Drinking Water	187	192	198	205	212
Landscape Irrigation	Drinking Water	589	607	626	647	668
Sales/Transfers/Exchanges to other agencies	Drinking Water	200	200	200	200	200
Nonrevenue	Drinking Water	1,178	1,214	1,253	1,294	1,337
		11,240	**11,574**	**11,938**	**12,325**	**12,727**

YVWD total demands including expected recycled water use are shown in Table 12-8. Recycled water is discussed further in Section 12.6.

Table 12-8. DWR Table 4-3R. Total Water Demands

Demand	2015	2020	2025	2030	2035	2040
Potable and Raw Water	9,595	11,240	11,574	11,938	12,325	12,727
Recycled Water Demand	1,213	1,651	2,177	2,792	3,490	4,282
Total Water Demand	10,808	12,891	13,751	14,730	15,815	17,009

12.3.2 Distribution System Water Losses

YVWD has an active water loss control program and has performed a water loss audit using the AWWA Manual 36 for calendar year 2015. The audit results are summarized in Table 12-9. The AWWA Water Audit Reporting Worksheet is included in Appendix O.

Table 12-9. DWR Table 4-4R. Water Loss Summary Most Recent 12 Month Period Available

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss
01/2015	580.449 AF

Based on the results of the 2015 Distribution System Water Loss report, the YVWD has implemented a refinement of this program to involve additional staff members to participate in the compilation of the report so there is a better understanding of water losses in an effort to improve the efficiency and effectiveness of the operations.

The AWWA water audit methodology will be performed annually in preparation of the 2020 UWMP document that requires reporting information for 2016, 2017, 2018, 2019, and 2020.

12.3.3 Estimating Future Water Savings

YVWD is committed to long-range planning to provide a reliable, cost-effective, and diversified water supply to its customers. YVWD actively monitors water consumption in its service area as part of their active planning and management strategies. Portions of the information collected by YVWD are included in the monthly reports sent to the State Water Resources Control Board.

For this report, YVWD has projected that future demands will increase at different growth rates applied to each decade together with the following factors:

- The percentage growth in service area population based on projections for each decade to 2070;
- The variations associated with imported water availability for the San Bernardino Valley Municipal Water District (for potable water service to the City of Yucaipa) and the San Gorgonio Pass Water Agency (for potable water service to the City of Calimesa);
- Anticipated reductions to the current per-capita consumption for the reporting period;
- Active construction of recycled water infrastructure for dual-plumed residential developments; and
- Projections for each type of customer classification served by YVWD.

In the 2015 UWMP, water suppliers have the option of preparing more detailed demand forecasts by estimating demand factors based on land use categories. For example, YVWD could identify typical water use per single family customer and per commercial account. These customer classes can be further sub-divided by lot size, neighborhood, or other variables. The intent is to quantify the estimated water use per customer in different customer classes, and then to forecast how future changes will impact water use within each customer class.

For this document, YVWD has elected not to develop land use-based demand factors and apply future savings from codes and standards. Recent drought regulations have induced significant changes in water consumption patterns, and there is considerable uncertainty as to how demands will change in the future if the drought subsides. Given this uncertainty, YVWD has elected not to quantify passive savings for this UWMP.

12.3.4 Water Use for Lower Income Households

Senate Bill 1087 requires that water use projections of an UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier.

The YVWD contains two jurisdictions, the City of Yucaipa and the City of Calimesa and two mutual water companies that also provide service to lower income households. YVWD reviewed the most recent General Plan for each of these entities to determine the percentage of households that are lower income (less than 80 percent of the median household income). YVWD estimated a weighted average of 15 percent of households in the service area are lower income. In the absence of more detailed information, YVWD estimated that this percentage applies to its single-family residential and multi-family residential water use across the service area. The estimated water use for lower-income households is shown in Table 12-10. These demands are included in the projections presented throughout this report.

Table 12-10. Estimated Demands for Lower-Income Households (AF)

Demand	2015	2020	2025	2030	2035	2040
Single Family Residential	982	1,127	1,161	1,198	1,237	1,278
Multi-Family Residential	158	174	179	185	191	198
Total	1,140	1,301	1,340	1,383	1,428	1,476

YVWD will not deny or put unreasonable conditions for water services, or reduce the amount of services applied for by a proposed development that includes housing units affordable to lower income households unless one of the following occurs:

- YVWD specifically finds that it does not have sufficient water supply
- YVWD is subject to a compliance order issued by the State that prohibits new water connections
- the applicant has failed to agree to reasonable terms and conditions relating to the provision of services

The conditions above apply to all applicants and developers.

12.4 SB X7-7 Baselines and Targets

An urban retail water supplier must set a 2020 water use target (herein called the Compliance Water Use Target) and a 2015 interim target (herein called the Interim Water Use Target). YVWD had previously calculated baseline water use and water use targets in the 2010 RUWMP using 2010 census data in the calculation of service area populations.

DWR has prepared standardized tables to record and document the calculations required for this section. The standardized tables for YVWD's calculations are included in Appendix Q.

12.4.1 Baseline Water Use

Years 2000 to 2009 have been selected for calculation of the 10-year base period, while years 2005 to 2009 have been selected for calculation of the 5-year base period.

YVWD's service area population was calculated using census data for the determination of the service area population for 1990, 2000, and 2010. Populations for intermediate years were calculated based on the number of residential water accounts between census years.

The calculation of gross water use begins with the total amount of water that was put into the potable water distribution system by YVWD. Water that was exported to another agency was then subtracted, to leave the amount used by YVWD retail customers.

For the period from 2000 through 2009, the 10-year average Base Daily Per Capita Water Use for YVWD is 276 GPCD; the 5-year is 274 GPCD.

12.4.2 2015 and 2020 Targets

The Water Conservation Bill of 2009 (SBX7-7) is one of four policy bills enacted as part of the November 2009 Comprehensive Water Package (Special Session Policy Bills and Bond Summary). The Water Conservation Bill of 2009 provides the regulatory framework to support the statewide reduction in urban per capita water use described in the 20 by 2020 Water Conservation Plan. Consistent with SBX7-7, each water supplier must determine and report its existing baseline water consumption and establish future water use targets in gallons per capita per day (GPCD); reporting is to begin with the 2010 UWMP.

An urban retail water supplier must set a 2020 water use target (herein called the Compliance Water Use Target) and a 2015 interim target (herein called the Interim Water Use Target). There are four methods for calculating the Compliance Water Use Target:

1. Eighty percent of the urban water supplier's baseline per capita daily water use

2. Per capita daily water use estimated using the sum of the following:

    a) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of DWR's 2016 report to the Legislature reviewing progress toward achieving the statewide 20 percent reduction target, this standard may be adjusted by the Legislature by statute.

    b) For landscape irrigated through dedicated or residential meters or connections, water use efficiency equivalent to the standards of the Model Water Efficient Landscape

Ordinance set forth in section 490 et seq. of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992.

c) For commercial, industrial, and institutional (CII) uses, a ten percent reduction in water use from the baseline CII water use by 2020.

3. Ninety-five percent of the applicable state hydrologic region target as stated in the state's April 30, 2009, draft 20 by 2020 Water Conservation Plan. YVWD falls within the South Coast Hydrologic Region; the region target is 142 GPCD. The South Coast region encompasses several coastal counties (Ventura, Los Angeles, Orange, and San Diego) and also includes portions of inland areas such as San Bernardino and Riverside. This target is more appropriate for coastal, rather than inland, areas.

4. Reduce the 10 or 15-year Base Daily Per Capita Water Use a specific amount for different water sectors:

    a) Indoor residential water use to be reduced by 15 GPCD or an amount determined by use of DWR's "BMP Calculator".

    b) A 20 percent savings on all unmetered uses.

    c) A 10 percent savings on baseline CII use.

    d) A 21.6 percent savings on current landscape and water loss uses.

The Interim Water Use Target is set as a halfway point between the Base Daily Water Use GPCD and the 2020 Compliance Water Use Target GPCD.

In addition to calculating base gross water use, SBX7-7 requires that a retail water supplier identify its demand reduction targets. YVWD chose to meet SBX7-7 targets as an individual agency rather than as part of a regional alliance. YVWD also selected Method 1 to calculate its 2020 Compliance Water Use Target and Interim Water Use Target.

Compliance Water Use Target under Method 1 is eighty percent of the water supplier's baseline per capita water use. The resulting Compliance Water Use Target is 220 GPCD, the interim Water Use Target is 248 GPCD.

Table 12-11. DWR Table 5-1R. Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline GPCD	2015 Interim Target	Confirmed 2020 Target
10-year	2000	2009	276	248	220
5-year	2005	2009	274	- -	- -

The actual 2015 GPCD was 194.

Table 12-12. DWR Table 5-2R. 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments to 2015 GPCD Enter "0" for adjustments not used from *Methodology 8*					2015 GPCD *(Adjusted if applicable)*	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events	Economic Adjustment	Weather Normalization	TOTAL Adjustments	Adjusted 2015 GPCD		
194	248	0	0	0	0	194	194	Yes
**All values are in Gallons per Capita per Day (GPCD)*								

12.5 Demand Management Measures

Demand Management Measures are mechanisms implemented by Yucaipa Valley Water District to increase water conservation. The District is a signatory to the California Urban Water Conservation Council's Memorandum of Understanding which was developed to expedite implementation of reasonable water conservation measures in urban areas and to establish assumption for use in calculating estimates of reliable future water conservation savings. The Department of Water Resources Demand Management Measures coincide with the Best Management Practices developed by the California Urban Water Conservation Council (CUWCC). The 2013 and 2014 Coverage Reports required by CUWCC have been completed to comply with CWC 10631(i). See Appendix P. The status of the two 'Not on Track' BMP's are described below.

Table 12-13. California Urban Water Conservation Council Best Management Practices

2013 – 2014 Best Management Practice	Status
BMP 1.1 Operation Practices	On Track
BMP 1.2 Water Loss Control	Not on Track
BMP 1.3 Metering with Commodity Rates	On Track
BMP 1.4 Retail Conservation Pricing	On Track (2013) Not on Track (2014)
BMP 2.1 Public Outreach	On Track
BMP 2.2 School Education Programs	On Track
BMP 3.1 Residential	On Track / GPCD Compliance
BMP 4.1 CII	On Track / GPCD Compliance
BMP 5.1 Landscape	On Track / GPCD Compliance

BMP 1.2 Water Loss Control

In order to comply with BMP 1.2 – System Water Audits, YVWD recognizes that completing the standard water audit and balance using the American Water Works Association (AWWA) Water Loss software and completing the Component Analysis. This is to determine the current volume of apparent and real water loss and the cost impact of these losses on utility operations. The AWWA Water Audit has been completed but the Component Analysis was not completed by the most recent BMP Reporting cycle. Since then, the training in Component Analysis and process has been complete and will be On Track for the next BMP reporting cycle.

BMP 1.4 Retail Conservation Pricing

The Retail Water Service Rate BMP was developed to establish a strong nexus between volume-related system costs and volumetric commodity rates, allowing conservation pricing to reward water efficient customers. The District practices conservation pricing for its water service with a commodity rate structure that includes five tiers.

The District is currently implementing conservation pricing. With the incentive to conserve structured in the water rate, it is deemed unnecessary to attempt to construct a commodity rate structure for sewer service. Additionally the accuracy of such rate structures, which rely on a formula based on water consumption, are questionable as they generally assess charges based upon winter season demands, which vary demanding on hydrology of a given year and landscaping demands YVWD UWMP, 2005).

Table 12-14. Yucaipa Valley Water District Water Rates

Units	Cost/Unit
1-15	$1.429
16-60	$1.919
61-100	$2.099
101 & over	$2.429
30+ multiple units x 0.800 factor	
Non-Potable Water - Commodity Charge	
1000 gallons	$1.235
Note: Potable Water Commodity Charge – Step Rate Table-per 1000 gallon units	

12.5.1 Water Waste Prevention Ordinance

YVWD adopted its Water Shortage Contingency Plan (WSCP). The WSCP describes voluntary and mandatory conservation measures, which include the recommendation that all water users should prevent the waste or unreasonable use of water in normal conditions, such as using hoses without shutoff nozzles, gutter flooding, etc. The WSCP also requires the following prohibitions on wasting potable water in mandatory stages:

- Prohibit use of any ornamental fountain using drinking water for operation or make-up.
- Prohibit car washing except at commercial car wash facilities that recycle water.
- Rescind water construction meter hydrant permits.
- Prohibit washing of sidewalks, streets, decks or driveways except as necessary for public health
- Limit pressure washing of buildings to situations that require it as part of scheduled building rehabilitation project (e.g., painting)
- Prohibit water waste including untended hoses without shut-off nozzles, obvious leaks and water running to waste such as gutter flooding and sprinklers/irrigation whose spray pattern unnecessarily and significantly hits paved areas.

12.5.2 Metering

CWC 526 and 527 require agencies are fully metered by 2025. All of YVWD's customers are metered, as are all new connections. All customers are billed with commodity rates. YVWD has a meter maintenance and replacement plan.

12.5.3 Conservation pricing

A conservation pricing structure using increasing block rates is always in place and is not dependent upon a water shortage for implementation. YVWD bills all water accounts volumetrically, plus a monthly service based on meter size.

12.5.4 Public education and outreach

The public information program encourages YVWD's customers to conserve water. Specific program components include:

- Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
- Website posts
- Landscape water conservation media campaigns
- General water conservation information through media, such as news releases and articles
- Free tours of the drinking water and wastewater facility
- Inland Empire Garden Friendly Program
- School Education Program with SBVMWD

YVWD has partnered with the Inland Empire Resource Conservation District to present water use efficiency programs to students grades K-12. The Water Use Efficiency program is designed to meet California State Standards and is free of charge.

12.5.5 Programs to assess and manage distribution system real loss

YVWD completes the AWWA water audit annually as part of its compliance with CUWCC BMPs in which it reports on leaks repaired to the extent cost effective and training to assess water losses.

12.5.6 Water conservation program coordination and staffing support

The Water Resources Manager fills the role of the conservation coordinator of YVWD.

12.5.7 Other demand management measures

YVWD provides water conservation rebates including the following:

- High efficiency sprinkler nozzles
- Weather based irrigation controllers
- High efficiency toilets

12.6 System Supplies

YVWD relies on four primary water resources to meet annual water demands: groundwater resources, local surface water resources; imported water resources; and recycled water resources. YVWD's water supply consists primarily of groundwater from 25 wells located throughout the YVWD service area. These wells provide about 50 percent of the total drinking water supply. In addition to groundwater, The

Oak Glen Surface Water Treatment Plant provides about 3 percent of the total drinking water supply and the Yucaipa Valley Regional Water Filtration Facility provides the remaining 47 percent of the total drinking water supply.

12.6.1 Purchased or Imported Water

YVWD purchases imported water from two State Water Project contractors, the San Bernardino Valley Municipal Water District (SBVMWD) for the San Bernardino County portion of the service area, and the San Gorgonio Pass Water Agency (SGPWA), for the Riverside County portion of the service area.

The two State Water Contractors convey imported water from the Sacramento San Joaquin Delta which is utilized as a supplemental potable water source to the local supply and is treated at the Yucaipa Valley Regional Filtration Facility. The imported water is also used for groundwater recharge.

12.6.1.1 San Bernardino Valley Municipal Water District (Valley District)

The San Bernardino Valley Municipal Water District has an entitlement to 102,600 AFY of SWP water that is used for both direct deliveries to treatment plants and artificial recharge of the Yucaipa groundwater basins.

The following table and chart reflects the anticipated imported water demands from Valley District.

Table 12-15. SBVMWD Wholesale Supplies – Existing and Planned Sources of Water (AF)

Imported Water Demands	2015	2020	2025	2030	2035	2040
Drinking Water Demands: Yucaipa Valley Water Filtration Facility	4,133	6,195	6,366	6,537	6,693	6,843
Conjunctive Use Demands: Local Water Banking	0	1,500	1,500	1,500	1,500	1,500
New Development Long-Term Supply Sustainability Program	0	2,892	3,002	2,701	2,789	1,995
Purchase from Valley District	***4,133***	***10,587***	***10,868***	***10,738***	***10,982***	***10,338***

12.6.1.2 San Gorgonio Pass Water Agency

The San Gorgonio Pass Water Agency has an entitlement to 17,300 AFY of SWP water that is used for both direct deliveries to treatment plants and artificial recharge of the groundwater basins. The San Gorgonio Pass Water Agency needs to secure an additional 22,000 AFY of supplemental water to meet the ultimate demand of 94,000 AFY by year 2045 (SGPWA Supplemental Water Supply Planning Study, October 2009).

The following table and chart reflects the anticipated imported water demands from the San Gorgonio Pass Water Agency.

Table 12-16. SGPWA Wholesale Supplies – Existing and Planned Sources of Water (AF)

Imported Water Demands	2015	2020	2025	2030	2035	2040
Drinking Water Demands: Yucaipa Valley Water Filtration Facility	454	609	767	962	1,191	1,444
Conjunctive Use Demands: Local Water Banking	0	1,200	1,200	1,200	1,200	1,200
New Development Long-Term Supply Sustainability Program	0	2,504	3,040	3,596	4,344	3,407
Total	**454**	**4,313**	**5,007**	**5,758**	**6,735**	**6,051**

In 2000, imported water resources were not utilized to meet the water demands of the Yucaipa Valley Water District. By 2010, this resource supplied 28.2% of total water demands.

Table 12-17. Wholesale Supplies – Existing and Planned Sources of Water in a Normal Year (AF)

Wholesale source	2015	2020	2025	2030	2035	2040
Purchase from SBVMWD	4,133	10,587	10,868	10,738	10,982	10,338
Purchase from SGPWA	454	4,313	5,007	5,758	6,735	6,051

Table 12-18. Wholesale Supplies – Single Dry and Multiple Dry Years (AF)

Wholesale source	2015	2020	2025	2030	2035	2040
Single-Dry Year	5,525	5,780	6,060	6,370	6,700	7,040
Multiple-Dry Year	5,850	6,120	6,410	6,740	7,095	7,455

The numbers presented above are very conservative. During a shortage, it is anticipated that direct deliveries are the first priority for any SWP water coupled with immediate reductions in drinking water use. With the aggressive use of recycled water for new homes, the critical nature of the direct deliveries will become more evident in the future since YVWD will only be using imported water for drinking water at new homes and not for irrigation of front and rear yards. To further bolster the imported water supplies, YVWD will continue to recharge groundwater basins and can use groundwater sources to back up imported water deliveries during a single-dry and multiple-dry years.

12.6.2 Groundwater

YVWD has traditionally met the bulk of service area customer needs from groundwater through the use of groundwater extraction wells. In 2010, over 75% of the groundwater used by the YVWD was extracted from the Wilson Creek Basin and the Calimesa Basin. The remaining groundwater production was from the Beaumont Basin, Chicken Hill Basin, Triple Falls Creek Basin, Oak Glen Basin and the Wildwood Basin.

Since about 1970 and especially during the 1990's, the wide-spread urbanization of southern California has extended into the Yucaipa area. Undeveloped land, agricultural land, and sparsely populated residential land has been converted into tracts of single family homes. The net effect of this change in land use has been an increase in the demand for water.

Since the local supply of surface water and groundwater is limited in this semiarid region, water purveyors in the Yucaipa Valley have explored several alternatives related to the development of water resources in the area. Most studies have identified groundwater resources at 200-300 feet below the surface elevation with a general basin-wide movement of both surface water and groundwater from the surrounding hills and mountains, to the south and west. After a brief study of the area, it becomes apparent to most observers that on a localized scale, the movement of groundwater through the numerous faults is very complex.

The groundwater extractions by appropriators in the sphere of influence of the Yucaipa Valley Water District have decreased over the past five years. This is mainly attributed to the increased use of recycled water and imported water in the region. Overall, the three appropriators in the Yucaipa Valley are progressing towards a balanced safe yield of groundwater extractions at about 9,000 acre feet per year.

As discussed above, the overall water demand in the region has increased, but the amount of groundwater used to meet the demands has decreased. Technically, most of the groundwater basins in the Yucaipa Valley area considered in an overdraft situation, but significant efforts have been made by the YVWD to increase the amount of water in storage in the central part of the Yucaipa Valley.

Groundwater projection in the Yucaipa Valley generally is associated with three primary groundwater basins, the Yucaipa, San Timoteo and Beaumont Basins. The Yucaipa Basin is divided into a series of eight subbasins separated by faults and other physical barriers:

- Calimesa Basin
- Chicken Hill Basin
- Gateway Basin
- Oak Glen Basin
- Triple Falls Basin
- Western Heights Basin
- Wilson Basin
- Wildwood Basin

Other local groundwater basins operated and managed by the Yucaipa Valley Water District include: the San Timoteo Groundwater Basin; the Beaumont Groundwater Basin and the Singleton Groundwater Basin. The Department of Water Resources recognizes the Beaumont and San Timoteo Basin as one basin, the San Timoteo Subbasin.

Table 12-19. Yucaipa Valley Water District Groundwater Basins

Groundwater Basin	Acres	Square Miles
Beaumont	17,035.48	26.62

Groundwater Basin	Acres	Square Miles
Calimesa	6,627.40	10.36
Chicken Hill	1,043.65	1.63
Edgar Canyon	5,187.77	8.11
Gateway	570.05	0.89
Oak Glen	5,193.71	8.12
Sand Canyon	3,849.26	6.01
San Timoteo	31,131.42	48.64
Singleton	2,033.47	3.18
Triple Falls	1,632.30	2.55
Western Heights	2,601.53	4.06
Wildwood	4,980.71	7.78
Wilson	1,846.08	2.88

Table 12-20. Summary of Groundwater Basin Hydro-geologic Characteristics

Parameter	Yucaipa Basin	Beaumont Basin	San Timoteo Basin
Basin Area	41 square miles[b]	26 square miles[a],[c]	49 square miles
Groundwater formations	Alluvium[a],[d]	Alluvium[a],[d]	Alluvium[a],[d]
Depth of water bearing sediments	700 - 1000 feet[a],[e]	700 - 1,000 feet[a],[e]	700 - 1,000 feet[a],[e]
Typical Specific Yields	4 - 22% [a],[f] (10% average)	3 - 35 %[a] (11% average)	3 - 35%[a] (11% AVERAGE)
Groundwater Storage Capacity	800,000 af[a],[g]	1,000,000 AF[a], [h]	1,000,000 AF[a], [h]
Estimated Long-term Natural Recharge	8,000 AFY[a], [i]	8,560 AFY[a], [j]	> 20,000 AFY[a], [k]
Current Approximate Extractions	14,000 AFY[a]	16,000 AFY[a], [l]	Not Available[m]
Dominant Recharge Source	Stream flow infiltration[a], [n]	Stream flow infiltration and artificial Recharge[a]	Stream flow infiltration, subsurface inflow, and deep percolation[a]
Artificial Recharge Potential	7000-14,000 AF[a]	200,000 AF[a], [o]	Not Available[m]
Typical Well Yields	200 gpm (average)[a]	200 gpm (average)[a]	Not Available[m]
Maximum Well Yields	2,800 gpm[a]	2,000 gpm[a], [p]	Not Available[m]
Typical Municipal Well Depths	500 feet[a]	500 feet[a]	500 feet[a]
Typical Range of TDS concentration	200 - 630 mg/l[a]	170 - 340 mg/l[a]	Not Available[m]
Average Groundwater TDS	320 mg/l[a]	250 mg/l[a]	Not Available[m]

Notes:

(a) From DWR Bulletin No. 118 (*California's Groundwater*, 2004).

(b) Water bearing sediments cover approximately 29 square miles (19,000 acres) within the Yucaipa Basin. The total watershed area of the basin is approximately 39 square miles (25,000 acres).

(c) Water bearing sediments cover approximately 26 square miles (16,000 acres) within the Beaumont Basin. The total combined watershed area of the Beaumont and San Timoteo Basins is approximately 114 square miles (73,000 acres).

(d) Includes recent alluvium from Holocene age, older Pleistocene age alluvium, and alluvial deposits within the eroded and folded Pliocene-Pleistocene age sediments of the San Timoteo Formation.

(e) San Timoteo Formation depths extend 1500 to 2000 ft, but water-bearing sediments limited to depths of 700 to 1000 ft.

(f) Lowest specific yields are reported northeast of Yucaipa. In the southern part of the basin, specific yields are estimated to range from 6 to 22 percent, with an average of 10 percent.

(g) Storage capacity estimates reported by DWR Bulletin No. 118 range from approximately 800,000 AF to 1.2 million AF.

(h) Total combined storage capacity of the Beaumont and San Timoteo Basins is estimated at 2,000,000 by DWR. Approximately one-half of this capacity is in the Beaumont Basin and one half is in the San Timoteo Basin.

(i) Approximate long-term yield presented in DWR Bulletin No. 118 on the basis of studies performed in 1980. A 1988 study performed for YVWD entitled Perennial Yield of the Yucaipa Groundwater Basin (David Keith Todd Consulting Engineers, 1988) estimated a long-term yield of approximately 7,900 AFY.

(j) Long-term yield estimated at 8,650 AFY, as reported in the FY2005-2006 annual Beaumont Basin Watermaster Report.

(k) Estimate not available. Recharge estimates for the combined San Timoteo/Beaumont Basins provided within DWR Bulletin No. 118 suggest that the total long-term recharge to the San Timoteo Basin is in excess of 20,000 AFY.

(l) Annual production has ranged from 14,100 AFY to 19,300 AFY during the period FY2003-04 and FY2006-07, as reported in the FY 2006-07 Beaumont Basin Watermaster report.

(m) Estimated value not available for the San Timoteo Basin.

(n) Infiltration from Yucaipa, Wilson, and Oak Glen Creeks, predominantly in the north and eastern portions of the basin.

(o) Estimated by Beaumont Basin Watermaster in annual report for FY2006-07.

(p) Based on pumping data presented in the Beaumont Basin Watermaster FY 2006-2007 Annual Report, adjusted by an assumed 70 percent operational factor.

YVWD's historical production for the past five years is shown in Table 12-21.

Table 12-21. DWR Table 6-1R. Groundwater Volume Pumped (AF)

Groundwater Type	Location or Basin Name	Water Quality	2010	2011	2012	2013	2014	2015
Alluvial Basin	Yucaipa Groundwater Basin	Drinking Water	6,627	5,733	6,125	6,212	7,828	4,785
Alluvial Basin	Beaumont Groundwater Basin	Drinking Water	672	534	700	1,031	1,198	119
Alluvial Basin	San Timoteo Groundwater Basin	Drinking Water	0	0	0	0	0	0
		Total	**7,299**	**6,267**	**6,825**	**7,243**	**9,027**	**4,904**
		Percentage of Drinking Water Supply	66%	54%	57%	60%	75%	50%

12.6.2.1 Yucaipa Groundwater Basin

The Yucaipa Groundwater Basin is located in the Santa Ana Subregion of the South Coast Hydrologic Region within the County of San Bernardino. The Yucaipa Basin has a surface area of 25,300 acres (DWR Bulletin 118) and a capacity of 800,000 AF (Groundwater Water Recharge/Recovery Project, 2009). The Basin is bounded on the north by the San Andreas fault, on the west by the Redlands fault and the Crafton Hills, on the south by the Banning fault, and on the east by the Yucaipa Hills.

Alluvial deposits in the subbasin are divided into older and younger units. The Holocene age younger alluvium consists of unconsolidated boulders, gravel, sand, silt, and clay (Moreland 1970). This unit forms a thin veneer and is mostly above the water table (Moreland 1970). The middle to late Pleistocene age older alluvium consists of boulders, gravel, sand, silt, and clay (Moreland 1970), and holds the primary source of groundwater in the subbasin. Clays present in this section are due to weathering and soil formation during accumulation of the deposits (DPW 1934).

The 2003 California Department of Water Resources Bulletin 118-2003 identifies the Basin in overdraft. Although the basin is defined in an overdraft state; water levels are at or near historic highs (California's Groundwater Bulletin 118, 2004). Moreover, the Yucaipa Valley Water District has decreased groundwater pumping dramatically since 2007 attributable to the supplemental supply of State Water Project Water and the use of recycled water. Prior to importing State Water Project water, YVWD pumped 3,585 million gallons per year (YVWD 2005 Production Report). Incorporating supplemental water has reduced pumping by 50% (YVWD 2010 Production Report).

The Yucaipa Groundwater Basin is subdivided into several subbasins including the: Calimesa, Chicken Hill, Gateway, Oak Glen, Singleton, Triple Falls Creek, Western Heights, Wildwood and Wilson Subbasin.

- Calimesa Subbasin - The Calimesa subbasin along with the Wilson Creek subbasin are the two largest subbasins within the Yucaipa Groundwater Basin. Total capacity of the Calimesa subbasin is estimated at 175,000 acre-feet (Groundwater Water Recharge/Recovery Project, 2009). The safe yield of the basin is small compared to this storage capacity, and is estimated at 1,500 million gallons per year, or 4,600 Acre feet per year (Wildermuth, 2005). Groundwater is typically reached within 225-350 feet below the land surface (Wildermuth, 2005).

- Chicken Hill Subbasin - The Chicken Hill subbasin is located in the northwest portion of the Yucaipa Basin. The subbasin has a total of five wells with two of those wells being active as of December 2010.
- Gateway Subbasin - The Gateway subbasin is located in the northern portion of the Yucaipa Basin. Currently there are no active wells in use as of December 2010. The Gateway subbasin contains three abandoned wells and one monitoring well.
- Oak Glen Subbasin - The Oak Glen Subbasin is located in the Northeastern portion of the Yucaipa Basin while extending south between the Wilson and Wildwood Subbasins as it straddles the mountain range to the east. The subbasin represents one of the largest subbasins within the Yucaipa Basin. Five active wells, four monitoring wells and one inactive well are located within this subbasin.
- Singleton Subbasin - The Singleton Subbasin is located in the Southern most portion of the Yucaipa Valley Water District's service area within the City of Calimesa in Riverside County. The subbasin containing one monitoring well
- Triple Falls Creek Subbasin - The Triple Falls Creek subbasin is the northernmost subbasin within Yucaipa Valley Water District's service area. This subbasin contains one active well, two abandoned wells and two inactive wells just outside of the subbasin boundary.
- Western Heights Subbasin - The Western Heights Subbasin is located in the western portion of the Yucaipa Basin and extends into the City of Redlands. The basin contains no wells utilized by the Yucaipa Valley Water District. Groundwater extraction from this basin is generally from the Western Heights Mutual Water Company.
- Wildwood Subbasin - The Wildwood Subbasin is located in the eastern portion of the Yucaipa Basin and possesses the largest amount of active wells utilized by YVWD totaling 11 active wells. Additional well status results in three inactive wells, four standby and two abandoned wells.
- Wilson Subbasin - The Wilson subbasin is one of the largest subbasins within the Yucaipa Basin. The Wilson Subbasin has a large storage capacity (estimated at 125,000 acre-feet by Carollo, 1985). The safe yield of the subbasin is small (estimated at 1,500 AFY (Wildermuth, 2005) compared to the large storage capacity. Existing depth to groundwater in the Wilson basin average roughly 175 to 425 feet below ground surface (Wildermuth, 2005).
- The additional spreading of water in the Wilson Creek spreading grounds and utilization of the Oak Glen Creek stream channel for recharge has contributed to increased groundwater levels. By maximizing the existing spreading grounds the capability exists to spread from 7,000 to 14,000 acre-feet of surface water annually into the Yucaipa Basin.

With ample storage, ability to recharge the basin through in-lieu use of surface water and by direct spreading surface waters and apparent flexibility in managing groundwater levels without subsidence problems, the Yucaipa Basin could be conjunctively managed both to meet normal annual demands and to meet water resource needs in the event of a drought and curtailment or loss of inconsistent surface water supplies, resulting in a highly reliable water supply. Current goals are to secure agreements to not pump beyond the long-term safe yield of the basin by utilizing the imported surface water supplemental supply.

YVWD has initiated an annual groundwater monitoring program that calculates the change in storage of the seven primary subbasins in the Yucaipa Groundwater Basin. Figure 12-3 illustrates that the groundwater levels have increased in the Crafton Subbasin, Gateway Subbasin, and Wilson Creek Subbasin by 32,280 acre feet when comparing groundwater conditions of 2005 to groundwater conditions in 2015. During the same period of time, the change in storage of the Calimesa Subbasin, Oak Glen Subbasin, Triple Falls Creek Subbasin and the Western Heights Subbasin have decreased by 9,349 acre feet. Comparing the groundwater conditions of 2005 to 2015, the subbasins of the Yucaipa Groundwater Basin have improved with a net increase in groundwater in storage by 22,931 acre feet.

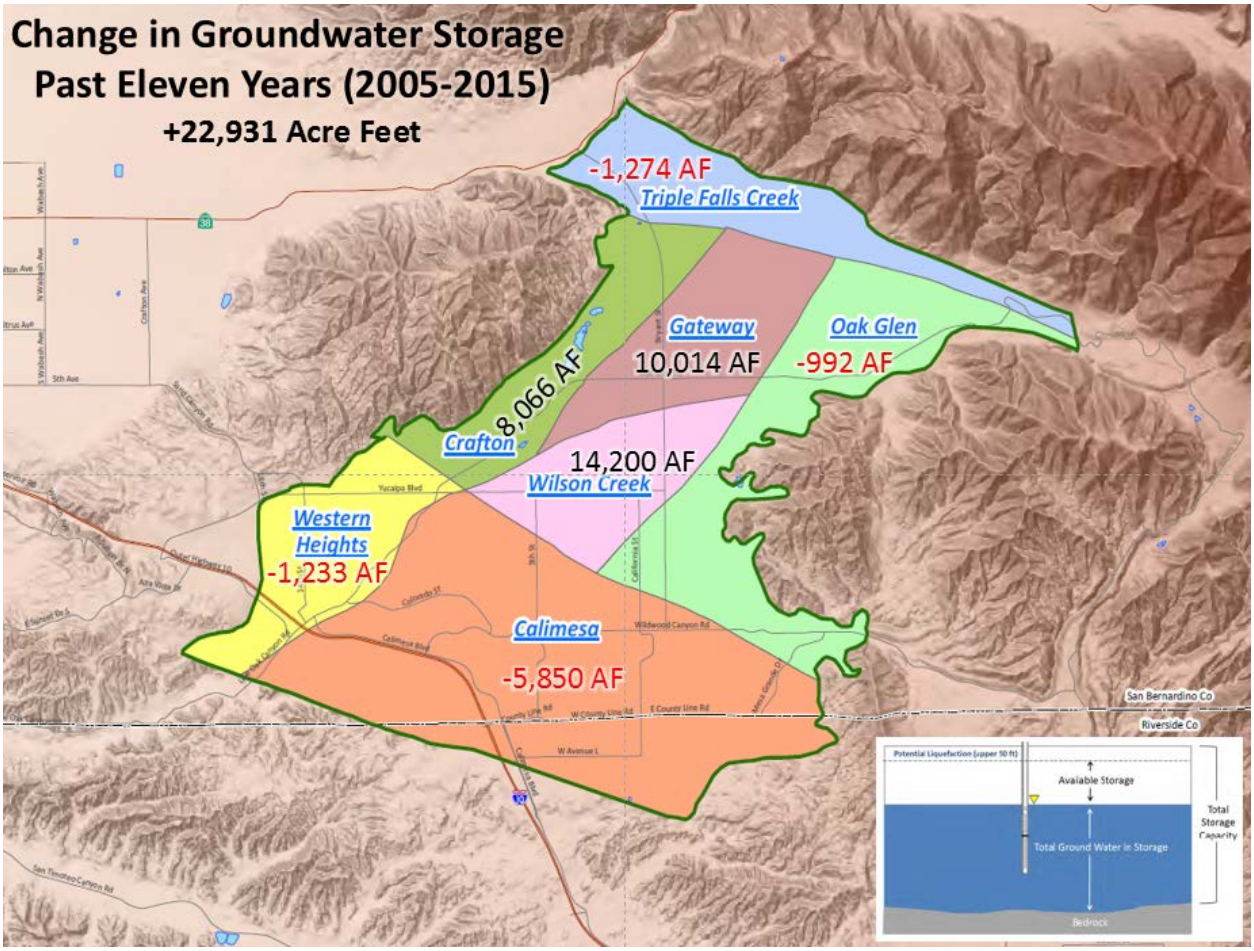


Figure 12-3 Yucaipa Groundwater Basin - Change in Groundwater Storage

YVWD has cooperated with the U.S. Geological Survey and the San Bernardino Valley Municipal Water District to construct real-time groundwater monitoring wells in the area. Groundwater level data indicates that the groundwater levels in the Wilson subbasin have increased in 2009 and 2010. This is attributed to the additional supplemental supply of State Water Project water (Groundwater Water Recharge/Recovery Project, 2009).

The Yucaipa Valley Water District is currently involved with development of a groundwater management plan (AB 3030 Plan) to proscribe collective management of the Yucaipa Groundwater Basin. With ample

storage, ability to recharge the basin by spreading surface waters and apparent flexibility in managing groundwater levels without subsidence problems, the Yucaipa Basin could be conjunctively managed both to meet normal annual demands and to meet water resource needs in the event of a drought and curtailment or loss of inconsistent surface water supplies, resulting in a highly reliable water supply. Current goals are to secure agreements to not pump beyond the safe yield of the basin, supplementing supplies with imported surface.

12.6.2.2 San Timoteo Groundwater Basin

The San Timoteo Groundwater Basin is located downstream from the Yucaipa and Beaumont groundwater basins in northeastern Riverside County and Southeastern San Bernardino County. This groundwater basin covers approximately 29 square miles. Groundwater movement in the San Timoteo Groundwater Basin trends from the east to the west. Surface water in the area is drained by San Timoteo Creek.

As with the Yucaipa and Beaumont Basins, groundwater is found in alluvium and in the San Timoteo Formation to depths of 700 to 1000 feet. Estimates for total groundwater storage capacity within the basin vary. On the basis of information presented by DWR (2004), the total groundwater capacity in the basin appears to be approximately 1,000,000 AF.

On the basis of information presented in DWR Bulletin No. 118, it appears that long-term recharge to the San Timoteo Basin is significantly higher than recharge within either the Yucaipa or Beaumont Basins (estimated to be on the order of 20,000 AFY). No significant long-term decline in depths to groundwater is reported in the San Timoteo Basin.

The San Timoteo Basin is not adjudicated, and reliable estimates of total groundwater pumping within the San Timoteo basin are not available. Because water table elevations within the basin have not declined (and remain near the surface in some areas along San Timoteo Creek), it may be concluded that long-term pumping within the basin is less than the long-term average recharge.

12.6.2.3 Beaumont Groundwater Basin

The Beaumont Basin is located in northwestern Riverside County, south of the Yucaipa Basin. While this basin is located outside of San Bernardino Valley Municipal Water District's jurisdiction, the basin eventually drains to San Timoteo Creek, a tributary of the Santa Ana River and covers approximately 26 square miles. Groundwater elevations generally slope from the northeast to southwest in the basin.

Groundwater within the basin is predominantly found in Holocene age alluvium and in the San Timoteo Formation. While the San Timoteo Formation extends to depths in excess of 1500 feet, water bearing sediments within the Beaumont Basin exist to depths of 700 to 1000 feet. Estimates for total groundwater storage capacity within the basin vary. The Beaumont Basin storage capacity is estimated at approximately 1,000,000 AF. (Beaumont Basin Watermaster, 2007)

In February 2004 the San Timoteo Watershed Management Authority filed a judgment adjudicating the groundwater rights in the Beaumont Basin and assigned the Beaumont Basin Watermaster with the authority to manage the groundwater basin. The Beaumont Basin Watermaster is comprised of managers from the Beaumont Cherry Valley Water District, City of Banning, City of Beaumont, South Mesa Mutual Water Company and Yucaipa Valley Water District.

In February 2004 the San Timoteo Watershed Management Authority filed a judgment adjudicating the groundwater rights in the Beaumont Basin and assigned the Beaumont Basin Watermaster with the authority to manage the groundwater basin (Judgment Pursuant To Stipulation Adjudicating Groundwater Rights in the Beaumont Basin, 2004). The adjudication of the Beaumont Basin has defined overlying and appropriator pumping rights and also allows for supplemental water to be stored and recovered from the basin.

12.6.2.4 Groundwater Basin Management

The two basins that have not been adjudicated within the Yucaipa Valley Water District's service area are the Yucaipa Basin and San Timoteo Basin. Under present management conditions the basins are expected to have controlled overdraft conditions. Prior to 2007, the Yucaipa Basin was considered in overdraft due to over extractions by the Yucaipa Valley Water District, South Mesa Water Company and Western Heights Mutual Water Company. In 2005, the Yucaipa Valley Water District began treating State Water Project water through a newly constructed Yucaipa Valley Regional Filtration Facility. This has provided an opportunity to alleviate pumping from local supplies increasing groundwater levels to 70 feet in one well location in the Wilson subbasin (USGS Groundwater Monitoring Levels).

During the peak temperature months, demands exceeded groundwater supply. It is unlikely the District could meet 100 percent of the full summer water demands solely with groundwater. Utilizing data from 2007 which represented a single-dry year, the monthly production exceeded the well capacity for four months. In a more realistic scenario, the available production during maximum day pumping would be 85% of the total well capacity.

12.6.3 Surface Water

The watershed of the Yucaipa Valley extends from the crest of the Crafton Hills in the northwest, to the crest of the Yucaipa Ridge of the San Bernardino Mountains to the north east, and the Yucaipa Hills in the south east to the Badlands of San Timoteo Canyon to the south west. Drainage in the area is by many small ephemeral creeks including: Yucaipa Creek, Oak Glen Creek, Wilson Creek, Birch Creek, and San Timoteo Creek. These creeks all begin in the upland areas to the northeast and drain down to the southwest through Live Oak Canyon to San Timoteo Creek which is a tributary of the Santa Ana River.

Stream gauge data and observations by District staff reveal that the creeks are generally dry during most of the year except along their upland reaches where small sustained year-round flows may occur. Irregular flows do occur occasionally along the entire reach of the creeks during both high intensity summer cloudbursts and long duration seasonal winter storms. In both cases, the stream flows generated from these conditions tend to be very flashy, with water levels changing rapidly over time and large amounts of unconsolidated sediments being scoured from the upper reaches and washed downstream. The largest volume of these flow events occur during the winter storm season from November through April.

The main tributaries in the sphere of influence of the YVWD are considered relatively small by comparison to the Santa Ana River and Mill Creek directly to the north of YVWD. Drainage courses in the boundary of YVWD include Wilson Creek, Oak Glen Creek, Yucaipa Creek, and San Timoteo Wash.

YVWD has operated and maintained a surface water resources from the Oak Glen area since the early 1900's. The existing Oak Glen Surface Water Filtration Facility continues to produce a steady flow of high quality drinking water for the Yucaipa Valley.

In 2015, local surface water supplies provided 2-3% of the total water demands of YVWD.

Table 12-22. Local Surface Water Supplies – Normal, Single-Dry, and Multiple Dry Years (AF)

	2020	2025	2030	2035	2040
Normal Year					
Oak Glen	*350*	*350*	*350*	*350*	*350*
Single Dry Year					
Oak Glen	*175*	*175*	*175*	*175*	*175*
Multiple-Dry Year					
Oak Glen	*175*	*175*	*175*	*175*	*175*

12.6.4 Stormwater

YVWD is participating in regional planning efforts to capture additional stormwater for purposes of groundwater recharge with the City of Yucaipa and the City of Calimesa. Water captured in these facilities will be part of the conjunctive use project used to provide a more robust, enhanced and sustainable water supply to existing customers of the YVWD.

12.6.5 Wastewater and Recycled Water

12.6.5.1 Recycled Water Coordination

YVWD is a proactive advocate of recycled water use and implementation in the Inland Empire. The Board of Directors have adopted planning guidelines that require the use of recycled water for front and rear yard irrigation of new development throughout the YVWD service area.

Recycled water is currently used to provide 10-15 percent of Yucaipa Valley Water District's overall water demands. A significant portion of YVWD's projected future water demands will be met with the use of recycled water for irrigation of golf courses, parks, landscape areas and front-/rear-yard irrigation of residential dwellings.

To serve the projected water demands, YVWD has implemented an extensive dual water distribution system. The dual water system includes a drinking water conveyance system to convey potable water to customers and a separate recycled water distribution system to convey recycled water to customers.

As water becomes an increasingly precious commodity, Yucaipa Valley Water District is stepping up its recycling efforts so that more water can be reused on golf courses, school grounds, roadside medians and for other landscaping purposes -- even the front and rear yards of new homes.

To achieve this objective, YVWD expanded and enhanced the sewer treatment plant, or water recycling facility, to a capacity of 8 million gallons per day. YVWD's water recycling facility is one of a relatively small number of sewer treatment facilities in the country to be equipped with microfiltration filters and ultraviolet light for disinfection. The treatment process used to transform our sewer water to recycled water is very similar to some drinking water treatment plants. This provides high quality recycled water that is also extremely safe.

The new microfiltration technology is important because it acts as pretreatment to a reverse osmosis system at the water recycling facility to further purify our recycled water. While the microfiltration system does not allow particles larger than 0.1 micrometer to pass through the filtration system and become part of the recycled water supply, the reverse osmosis system creates a physical barrier to stop salt molecules while allowing water molecules to pass through. The resulting water supply is very similar to the purity of rainwater.

This state-of-the-art technology commonly used by desalinization plants to convert ocean water to drinking water will soon be used by YVWD to meet strict water quality objectives set by the Regional Water Quality Control Board. With the requirement to produce such exceptionally high quality recycled water, YVWD has developed plans to use the recycled water for the direct benefit of the community.

With the completion of the reverse osmosis facility, YVWD has also extending a brineline to dispose of the salts removed by the treatment system. The Yucaipa Valley Brineline is a 15-mile pipeline that will connect to an existing brine disposal pipeline located in San Bernardino. The brine solution created by YVWD, which is about 1/10th as salty as sea water, will be conveyed to the Orange County Sanitation District to be added to their ocean outfall.

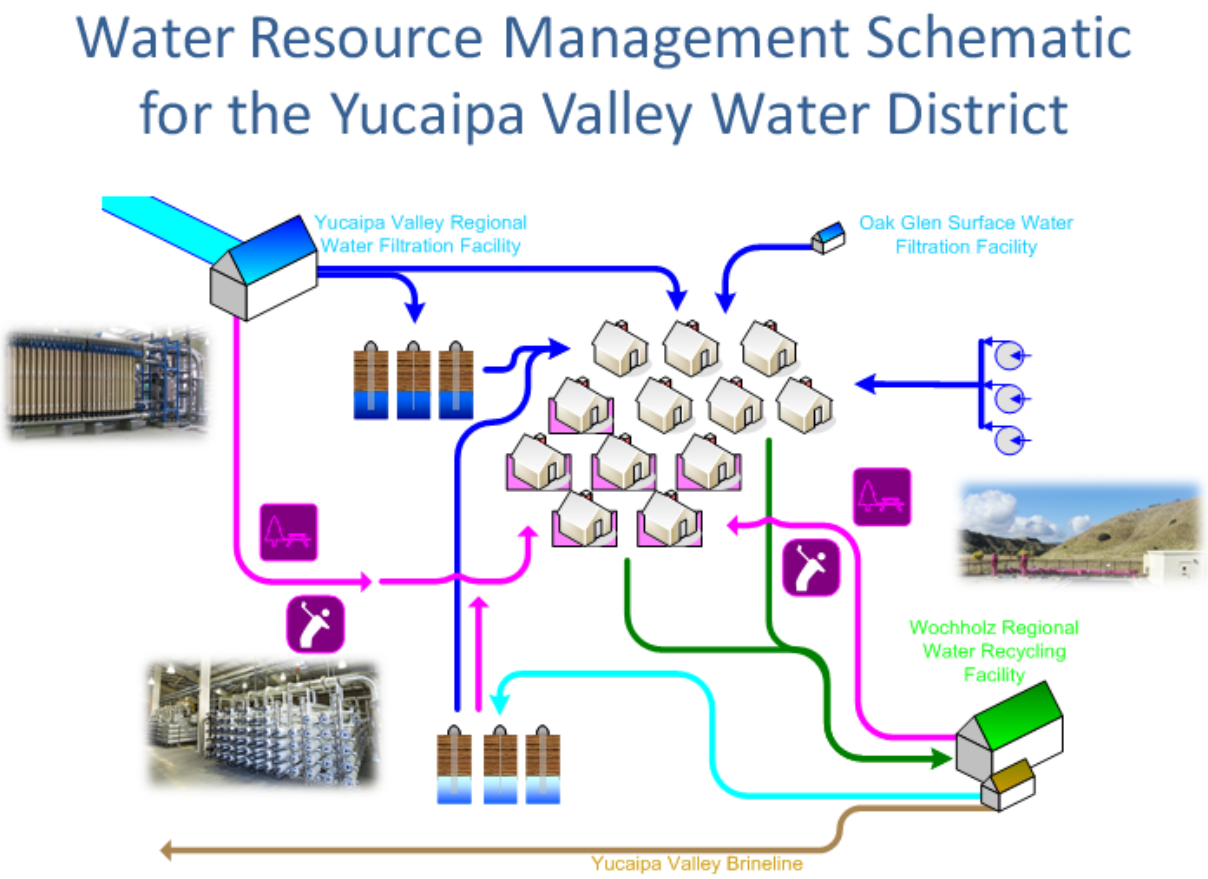


Figure 12-4. Yucaipa Valley Water District Water Resource Management Schematic

12.6.5.2 Wastewater Collection, Treatment, and Disposal

YVWD began treating wastewater in 1986. The sewer collection system has been expanded steadily over the years to provide additional recycled water supplies to the community. In the 2005 UWMP, YVWD projected delivering 1,900 AF of recycled water by year 2010; YVWD delivered 2,016 AF of recycled water in 2010.

The Wochholz Regional Water Recycling Facility was recently expanded to a 8.0 MGD wastewater treatment facility. The ultimate facility will be capable of treating up to 11 MGD of wastewater and includes the following major components:

- Septage Receiving Station - A septage receiving facility provides septage haulers an efficient location to discharge septage wastes for treatment at the plant.
- Headworks Grit Removal System - The grit removal system has been recently upgraded and enlarged to increase grit removal efficiency and reduce the impacts of grit on downstream treatment processes.
- Primary Equalization Tank - The primary equalization tank provides YVWD with the ability to stabilize daily flow variations and hold additional wastewater during peak periods for a steady-state treatment flow throughout the treatment facility.
- Secondary Treatment System - The secondary treatment system has been equipped with nitrogen removal technology that is used to provide compliance with the total inorganic nitrogen limits of 6 mg/l.
- Advanced Tertiary Treatment Facilities - Equalized flows are treated with microfiltration technology commonly used in the beverage and drinking water industry. The recycled water product from this treatment process is significantly more pure than the tertiary filters previously used by YVWD. This treatment technology is a precursor to the reverse osmosis treatment process.
- Reverse Osmosis System - YVWD currently operates a 2.5 MGD reverse osmosis treatment system to purify the recycled water produced at the Wochholz Regional Water Recycling Facility. The brine concentrate is delivered to the Inland Empire Brineline for disposal at Orange County Sanitation District pursuant to existing agreements with the San Bernardino Valley Municipal Water District and the Santa Ana Watershed Project Authority.
- Recycled Water Storage Reservoir - A 4.0-MG recycled water storage reservoir and pump station is used to store the recycled water prior to plant effluent.

Yucaipa Valley Water District (District) is continuing to expand its recycled water system to meet increasing demand in the system. The increasing demand is a result of additional golf courses, schools, community parks, and other non-potable water users, as well as increased residential development. The existing recycled water system went into operation in 2002.

YVWD will be constructing a Regional Recycled Water Conveyance System to the YVWD's southernmost service area boundary. This extension would involve the construction of a 24" recycled water pipeline, approximately 18,500 linear feet (3.5 miles) through the City of Calimesa. The purpose of the pipeline is to provide recycled water service to customers within YVWD and provide surplus recycled water to neighboring water agencies such as the Beaumont Cherry Valley Water District and the City of Banning.

Table 12-23. DWR Table 6-2R. Wastewater Collected within Service Area in 2015

Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2015 (AF)	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
Yucaipa Valley Water District	Metered	4,480	Yucaipa Valley Water District	Wochholz Regional Water Recycling Facility	Yes	No

Table 12-24. DWR Table 6-3R. Wastewater Treatment and Discharge Within Service Area in 2015

☐ **No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.**

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Waste-water Discharge ID Number *(optional)*	Metho d of Dispos al	Does This Plant Treat Waste-water Generated Outside the Service Area?	Treatment Level	2015 volumes			
							Waste-water Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Wochholz Regional Water Recycling Facility	San Timoteo Creek	Upper tributary to the Santa Ana Watershed	CA 0105619	River or creek outfall	No	Advanced	4,057	2,844	1,213	0
				Other						
						Total	4,057	2,844	1,213	0
NOTES:										

12.6.5.3 Recycled Water Beneficial Uses

YVWD has already initiated a significant recycled water program within their service area for landscape irrigation. Future homes in the YVWD service area will be constructed with drinking water for interior use and recycled water for exterior use. These improvements will significantly reduce the GPCD for the community and provide the framework for a robust, sustainable and water conscientious community.

Table 12-25. DWR Table 6-4R. Current and Projected Recycled Water Direct Beneficial Uses within Service Area (AF)

Name of Agency Producing (Treating) the Recycled Water:			Yucaipa Valley Water District					
Name of Agency Operating the Recycled Water Distribution System:			Yucaipa Valley Water District					
Supplemental Water Added in 2015			665.05 Acre Feet					
Source of 2015 Supplemental Water			Untreated State Water Project, Filtered MF Backwash from the Yucaipa Valley Regional Water Filtration Facility.					
Beneficial Use Type	**General Description of 2015 Uses**	**Level of Treatment**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Landscape Irrigation	Various Users	Advanced Tertiary Treatment with Salinity Control (RO)	1,213	1,651	2,177	2,792	3,490	4,282
Groundwater Recharge	Wilson Creek Spreading Basin	Advanced Tertiary with Salinity Control (RO)	0	2,828	2,861	2,806	2,668	2,436

Table 12-26. DWR Table 6-5R. 2010 UWMP Recycled Water Use Projections Compared to 2015 Actual

☐	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.

Use Type		2010 Projection for 2015	2015 actual use
Agricultural irrigation		16	23
Golf course irrigation		179	457
Commercial use		58	298
Industrial use		99	50
Seawater intrusion barrier		0	0
Recreational impoundment		0	0
Wetlands or wildlife habitat		0	0
Groundwater recharge (IPR)		5,000	0
Surface water augmentation (IPR)		0	0
Direct potable reuse		0	0
Other	Hydrant Flushing	268	1,041
Total		5,620	1,869
NOTES:			

12.6.5.4 Actions to Encourage and Optimize Future Recycled Water Use

In August 2008, YVWD adopted a strategic plan for a sustainable future and enhance water management. One of the most significant elements of the strategic plan is the requirement for new homes to be constructed with dual-plumbed infrastructure. This requirement coupled with new landscape design requirements will significantly improve the beneficial use of water throughout the community.

Table 12-27. DWR Table 6-6R. Methods to Expand Future Recycled Water Use

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Dual-Plumbing of New Homes	YVWD Resolution requiring front yard and rear yard irrigation with recycled water adopted in 2008	Ongoing	2,000 AF

12.6.6 Desalinated Water Opportunities

The need for brackish groundwater desalting is somewhat limited in the Yucaipa Valley. While elevated salts are a concern in the groundwater basins, YVWD has already implemented programs to reduce the salinity in the Yucaipa Management Zone, Beaumont Management Zone and San Timoteo Management Zone pursuant to Basin Plan requirements adopted by the Santa Ana Regional Water Quality Control Board in 2004.

The development of (or financial participation in) a new seawater desalination project, while costly, is being investigated by other wholesale and retail water agencies in southern California. Because the Yucaipa Valley is an inland area, in order for desalination to work it would be necessary for agencies in the San Bernardino Valley to join with other water purveyors in the development of a coastal desalination facility and then receive water from the SWP supplies of other participants via an exchange. It is not cost-effective for the San Bernardino Valley to receive direct delivery of desalted ocean water.

Seawater desalination is an alternative that is technically viable. However, production and treatment costs have historically been several times higher than those of SWP costs and conventional treatment.

12.6.7 Exchanges or Transfers

YVWD is in the process of reviewing potential interties with the City of Redlands and the Beaumont Cherry Valley Water District to meet needs during periods of lowered groundwater levels. These connections would be short-term, as needed purchases and are not accounted for as additional water supply.

12.6.8 Future Water Projects

YVWD is currently enhancing its ability to utilize its existing water supply sources through several projects that are in various phases of implementation, from planning to preliminary design to construction. Specifically, YVWD is in the process of reviewing concept documents related to participation in the Bunker Hill Conjunctive Use Project. This program would provide a water banking opportunity in the adjacent Bunker Hill Groundwater Basin during wet periods for extraction when imported supplies from the State Water Project are limited.

Table 12-28. DWR Table 6-7R. Expected Future Water Supply Projects or Programs

Name of Future Projects or Programs	Joint Project with Other Agencies?	Other Agency Names	Description	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Agency
Bunker Hill Conjunctive Use Project	Yes	SBVMWD	Implementation of regionally shared groundwater wells and spreading basins.	2019	2020	8,000 AF

12.6.9 Summary of Existing and Planned Sources of Water

Table 12-29 summarizes the water resources used by YVWD in 2015, and the projected future supplies are summarized in Table 12-30. The estimated amount of imported water supply shown in Table 12-30 has been estimated by YVWD and provided to Valley District.

Table 12-29. DWR Table 6-8R. Water Supplies - Actual

Water Supply	Additional Detail on Water Supply	2015 Actual Volume (AF)	2015 Water Quality
Groundwater	Groundwater Supplies	4,904	Drinking Water
Surface Water	Oak Glen Surface Water Filtration Facility	233	Drinking Water
Purchased or Imported Water	Yucaipa Valley Regional Water Filtration Facility	4,587	Drinking Water
	Total	**9,724**	

The projected water supplies anticipate the purchase of additional water rights by the San Gorgonio Pass Water Agency and/or the approval of an allocation plan for an even distribution of imported water from that state water contractor. Without these actions taken by the regional water provider, YVWD is prepared to implement the necessary restrictions to reduce the demand in future years if needed.

Table 12-30. DWR Table 6-9R. Water Supplies – Projected (AF)

Water Supply	Additional Detail on Water Supply	Water Quality	2020	2025	2030	2035	2040
Groundwater	Groundwater Supplies	Drinking Water	9,000	9,000	9,000	9,000	9,000
Surface Water	Oak Glen Surface Water Filtration Facility	Drinking Water	500	500	500	500	500
Purchased or Imported Water	Yucaipa Valley Regional Water Filtration Facility	Drinking Water	14,900	15,875	16,500	17,700	16,390
Recycled Water	Wochholz Regional Water Recycling Facility	Advanced Tertiary	4,479	5,038	5,598	6,158	6,718
		Total	**28,879**	**30,413**	**31,598**	**33,358**	**32,608**

12.7 Water Supply Reliability Assessment

12.7.1 Imported Water

During times of State-wide drought conditions, the availability of SWP may be reduced. These conditions are normally known in advance, providing YVWD with the opportunity to plan for the reduced supply. During a drought period, it is a priority to make direct deliveries to the water treatment plants operated by Redlands, WVWD, and YVWD and to maintain lake levels at Big Bear Lake (Big Bear Lake water also feeds the water treatment plants of Redlands and YVWD).

In the case of a shortage, YVWD would utilize additional groundwater through groundwater well production from the Bunker Hill Conjunctive Use Project and groundwater stored in the Yucaipa Groundwater Basin. In multiple dry years, Valley District expects between 44,858 AF and 45,910 AF of water to be available, meaning Valley District could fulfill normal direct deliveries to water treatment plants in a multiple-dry year, including the YVWD treatment plant. Table 12-36 and Table 12-37 estimate how imported water supplies available to YVWD may be reduced during drought conditions.

12.7.2 Groundwater

YVWD groundwater wells have not been impacted by water quality issues. YVWD continues to monitor for any indication of groundwater contamination.

12.7.3 Reliability by Type of Year

Based on the studies and information listed above it is anticipated that groundwater pumping by YVWD will not be reduced or curtailed during a single-dry or multi-dry year.

12.7.4 Regional Supply Reliability

YVWD currently supplements its local supply with SWP deliveries from Valley District and in the past this SWP has made up a fair amount of YVWD's water supply.

12.8 Water Shortage Contingency Planning

Water supplies may be interrupted or reduced significantly in a number of ways, such as drought which limits supplies, an earthquake which damages delivery or storage facilities, or a regional power outage. YVWD has a Water Shortage Contingency Plan for regional water supply sources (imported water and groundwater).

While water supply disruptions can occur for a variety of reasons, a weather related water shortage, or drought, is one category of particular importance to the Yucaipa Valley Water District for reasons described below. Droughts are naturally occurring but unpredictable weather events of varying frequency, duration and severity. In the Yucaipa Valley, historical data indicates a high probability of short term and/or multi-year drought conditions.

12.8.1 Stages of Action

Section 4 if the YVWD Water Shortage Contingency Plan sets forth the four stage water shortage contingency plan for the conservation of water. This plan includes voluntary and mandatory conservation measures; key elements are included herein.

The Water Shortage Contingency Plan provides four stages of response based of increasing severity, as progressively more serious conditions warrant. This type of response would be appropriate to apply to a summer drought or other water service disruption. The four stages include a variety of communications, internal operations, and supply and demand management strategies as appropriate, and are characterized as follows:

12.8.1.1 Normal Conditions

Normal conditions shall be in effect when YVWD is able to meet all the water demands of its customers in the immediate future. During normal conditions all water users should continue to use water wisely, to prevent the waste or unreasonable use of water, and to reduce water consumption to that necessary for ordinary domestic and commercial purposes.

12.8.1.2 Advisory Stage - Threatened Water Supply Condition

In the event of a threatened water supply shortage which could affect YVWD's ability to provide water for ordinary domestic and commercial uses, the public is informed as early as meaningful data are available that a possible shortage may occur.

Objectives - To prepare the cities, school district, developers and water users for potential water shortage thereby allowing all parties adequate planning and coordination time.

To undertake supply management actions that forestalls or minimizes the need later for more stringent demand or supply management actions.

Triggers - As presented earlier, there are a variety of weather and other conditions that may cause concern about water availability and a potential water shortage. The most fundamental weather condition that would trigger an "Advisory" would be when the winter season rainfall total is significantly

less than the average annual rainfall of 18 inches per year for Yucaipa (as measured at the Mill Creek CDF Fire Station).

The Advisory would be withdrawn when projected water supplies such as State Water Project water and/or recycled water are in sufficient supply to provide normal water supply conditions to YVWD's customers.

Public Message - The potential exists for lower than normal supply; conditions may return to normal or, later on, we may need to reduce consumption. We'll keep you informed."

Advisory Stage Goal - Voluntary conservation measures resulting in a 5% - 10% reduction in water use, which can generally be achieved by reducing residential landscaping, and irrigation use.

Advisory Stage Action Plan:

- Brief elected officials
- District staff to issue a water conservation press release/newsletter during the summer months as a reminder to customers. See the sample press release as provided in Appendix C.
- District adds text to monthly billing to remind customers of water conservation practices. An example would be:
- "During the summer months, please remember not to water between the hours of 10:00am and 8:00 pm. Thank you for conserving".
- District staff to regulate construction meter activity. This may include restricting quantity of water used and the issuance of new construction meters.
- District staff to monitor and record potable water irrigation practices at golf courses, parks and schools to effectively regulate the use of limited potable supplies.
- District staff to encourage the use of recycled water as a means to remain drought tolerant and promote continuous water conservation measures.
- Weekly planning meetings to include updates on water supply issues and alternatives to prepare for the next stage of the implementation plan.
- Intensify ongoing media education effort about the water system, particularly relationship of weather patterns to supply and demand; provide up to date data and implications for water use, if known.

YVWD Internal Operations for Advisory Stage:

- Prepare to establish purveyor "hotline", a frequently updated recording providing latest information and supply and demand data.
- Consult with other major customer groups, e.g., parks departments, landscape industry, forming a committee if needed, to assist the shortage advisory group to define message and provide feedback on utility actions.
- Initiate status report to entities with special interests, e.g., large water users especially landscape and nursery industry, parks, major water using industries.

- Prepare public information materials explaining the Water Conservation Implementation Plan stages and range of actions; prepare "Questions and Answers" for all customer groups, including those who may be planning new landscaping projects.
- Intensify coordination with other regional water suppliers to learn what conditions they are projecting for their systems.
- Evaluate ability, resources, plans to move into Voluntary stage; as appropriate, begin preparatory measures.
- Intensify data collection actions (storage reservoirs, wells and power supply) and monitoring weather forecasts.
- Intensify YVWD's computer modeling runs of projected supply, storage and demand scenarios.
- Intensify supply side management techniques to optimize existing sources.
- Assess current water main flushing and reservoir cleaning activities to determine whether they should be accelerated to be completed prior to the peak season or reduced to conserve supply.
- Assess water quality in reservoirs and distribution system to target for correction areas that may be predicted to experience problems.
- Initiate planning and preparation for Voluntary Stage actions, including an assessment of potential staffing impacts, training needs, and communications strategies including use of web-based information.

12.8.1.3 Voluntary Stage – Non-Mandatory Conservation Measures

If supply conditions worsen, the plan moves to the Voluntary Stage, which relies on voluntary cooperation and support of customers to meet target consumption goals. During this stage, specific voluntary actions are suggested for both residential and commercial customers.

Objectives

- To maintain or reduce demand to meet target consumption levels by customer voluntary actions.
- To forestall or minimize need later for more stringent demand or supply management actions.
- To minimize the disruption to customers' lives and businesses while meeting target consumption goals.
- To maintain the highest water quality standards throughout the shortage.

Triggers

- The "Voluntary Stage" is implemented when one or both of the following factors applies:
    - Supply conditions identified in the Advisory Stage have not improved.

  - Demand levels indicate the need for a more systematic response to manage the situation

- Heavy groundwater pumping coupled with higher summer temperatures means that there might be an increased likelihood that water quality problems may become an issue. Consideration will be given to potential water quality issues in defining the supply and demand management strategies.

Voluntary Stage Goal - At this stage, the goal would be to achieve a 10% - 15% reduction in water use. Customers can generally achieve this goal through constant water conservation practices.

Voluntary Stage Action Plan - YVWD staff shall meet frequently to re-evaluate the situation based on current and projected supply conditions and the season, and determine the appropriate actions and strategies. The staff will determine target consumption goals to be achieved on a voluntary basis which may be revised as necessary. (See Appendix G). Based on the consumption goal, some or all of the following actions will be taken; those actions that are asterisked (*) will be considered initially for implementation if demand reductions more than 10 to 15 percent below normal are necessitated, or later if voluntary measures implemented fail to deliver targeted savings.

- Establish systematic communications with elected officials at the committee and Board level to communicate the nature and scope of voluntary measures and strategy
- District staff to evaluate whether targeted consumption levels and supply conditions warrant a rate surcharge to reinforce voluntary actions and/or to recover revenue losses*; the General Manager makes recommendation to Board members
- Prepare appropriate legislation regarding emergency surcharges, if required
- Consult with customer groups throughout the shortage to help develop public information messages and materials and to obtain feedback on utility actions
- Initiate major public information, media and advertising campaign:
  - In daily newspapers, publish and promote consumption graph that displays the goal and previous 24 hour consumption;
  - Promote consumption goals for typical households, and a percentage reduction goal for commercial customers (The plan, in Appendix G, contains a list of recommended actions for customers to take to reduce consumption)
  - Develop and implement a marketing plan, including paid advertising, to keep customers informed about supply and demand conditions; reinforces desired customer actions; recommends customer actions to reduce demand sufficiently; and, depending on conditions, reminds customers that if goals are not achieved, restrictions may be necessary
- Identify what potential next steps will be to reduce demand including timing, what type of restrictions and/or surcharges will be imposed.
- Establish routine timing for press releases (e.g., every Monday morning) that provide current status and outlook; present information in standardized format that becomes familiar to media and public.

- Include water quality information in public information so that if flushing is necessary, the public understands that it is essential for water quality maintenance.
- Publicize the water supply conditions web page, which is updated regularly. Ensure the information provided covers the needs of all key interests: the public, news media and purveyors.
- Meet with landscape industry representatives to inform them of current and projected conditions; develop partnership programs and informational materials on the shortage, consumption goals, etc. for distribution by industry and utilities.
- Establish and promote "hotlines" for customers to obtain additional conservation information.
- Contact largest customers to request percentage reduction. Contact City and other public agencies to inform them of conditions and request their cooperation.
- Prepare list of commercial car wash facilities that recycle water.
- Establish regular communication mechanism to keep Department employees, especially utility account representatives and water service consultants, up to date on goals, conditions, and actions.
- Print generic postcards to acknowledge receipt of customer correspondence regarding the shortage and to inform customer that specific response is being prepared.
- Initiate remaining planning and preparation for Mandatory Stage.

YVWD Internal Operations for Voluntary Stage

- Continue actions listed in the Advisory Stage.
- Eliminate all operating system water uses determined not to be essential to maintain water quality such as pipeline flushing, reservoir overflows; complete cleaning of any reservoirs known to be vulnerable to warm weather taste and odor concerns.
- Increase water quality monitoring actions.
- Implement staffing reassignments as needed, and plan staffing changes which may be needed for the Mandatory Stage, including staff to enforce mandatory restrictions.

Supply and Demand Management Actions

- Issue a request that non-recirculating fountains be turned off*
- Restrict construction meters to only essential purposes*
- Activate any existing interties to increase supply availability*
- Request that Fire Department limit training exercises that use water.
- Request that City agencies eliminate washing fleet vehicles unless recycling car washes are used.
- Request that hosing sidewalks, driveways, parking lots, etc. be limited to situations that require it for public health and safety.

- Have YVWD field personnel "tag" observed obvious water waste such as hoses without shutoff nozzles, gutter flooding, etc. with notice that informs customer about the supply conditions and need to conserve.
- Evaluate ability to accelerate or enhance or expand long term conservation programs; implement as appropriate.

12.8.1.4 Mandatory Stage – Water Shortage Emergency: Mandatory Conservation Measures

If the Voluntary Stage does not result in the reduction needed, the Mandatory Stage prohibits or limits certain actions. This stage would be accompanied by an enforcement plan, which could include fines for repeated violation.

Objectives

- To achieve targeted consumption reduction goals by restricting defined water uses.
- To ensure that adequate water supply will be available during the duration of the situation to protect public health and safety.
- To minimize the disruption to customers' lives and businesses while meeting target consumption goals.
- To maintain the highest water quality standards throughout the shortage.
- To promote equity amongst customers by establishing clear restrictions that affect all customers.

Triggers - The General Manager, with approval from the Board of Directors, would approve progression to this stage if goals established in the Advisory and Voluntary Stage have not been met, and additional action is needed. The specific restrictions imposed during the mandatory stage would be determined based on the season of the year, targeted demand levels, and other considerations previously mentioned. Variations of the specific restrictions may be applied based on water supply conditions. For example, lawn watering restrictions may simply consist of time of day restrictions; or, if conditions warrant, lawn watering could be restricted to certain times of day and allowed only once a week.

Public Message - "It is necessary to impose mandatory restrictions to reduce demand based on the current water shortage. We are continuing to rely on the support and cooperation of the public to comply with these restrictions but need the certainty and predictability of restricting certain water uses in order to ensure that throughout the duration of this shortage an adequate supply of water is maintained for public health and safety."

Mandatory Stage Goal - Mandatory conservation measures resulting in a 10% - 15% reduction in water use.

Mandatory Stage Action Plan

- YVWD staff will make recommendations regarding the nature, scope and timing of restrictions to the members of the Water Conservation Committee. YVWD staff will need to determine that the water supply and demand management strategies will not result in unacceptable water quality degradation.

- The General Manager recommends to the Board of Directors to implement the Mandatory Stage conservation measures and other appropriate actions.
- The Board adopts a resolution on mandatory restrictions and, if needed and not already in place, emergency surcharges.
- The public is informed about the nature and scope of the mandatory restrictions through a press conference, paid advertising and other means, including direct mail.
- The enforcement mechanisms, rate surcharges, target consumption goals, projections for how long restrictions will be in place and the reasons for imposing restrictions will also be identified, as will the possible consequences if goals are not met.
- Any exemptions from restrictions will be clearly identified.
- In communicating mandatory restrictions to the public, a clear distinction will be made between lawn/turf watering and watering gardens and ornamental plantings. The type and amount of watering allowed will be clearly defined.
- A "Customer Hotline" will be set up to report violations of restrictions.
- Customers who irrigate with private wells will be urged to install signs to let the public know that private well water is being used.
- Communication actions from the Advisory and Voluntary stages will be continued and enhanced.
- Plans will be made to move into the fourth stage - Emergency Curtailment - and to begin preparatory measures as appropriate

YVWD Internal Operation Plan for Mandatory Stage

- Continue appropriate actions from previous stages
- Finalize and implement procedures for exemptions from restrictions and/or emergency surcharges.
- Finalize and implement enforcement procedures for restrictions including highly visible "Water Watchers".
- Increase water quality monitoring actions at storage reservoirs.

Supply and Demand Management Actions

Overall supply conditions will be considered at regular meetings by District staff and the members of the water conservation committee in evaluating which restrictions to impose.

Watering Restrictions

The following are several possible approaches to watering restrictions. The nature of the restrictions used will depend on the situation, and may change as severity of the situation changes.

- Prohibit all watering during the day, for example between 6:00 a.m. and 9:00 p.m.

- Limit all watering to a specific number of days per week or per month. This choice will depend on target consumption goals, the time of year and the extent to which watering is occurring, and how much demands have already decreased.

Other Restrictions

- Prohibit use of any ornamental fountain using drinking water for operation or make-up.
- Prohibit car washing except at commercial car wash facilities that recycle water.
- Rescind water construction meter hydrant permits.
- Prohibit washing of sidewalks, streets, decks or driveways except as necessary for public health and safety.
- Limit pressure washing of buildings to situations that require it as part of scheduled building rehabilitation project (e.g., painting).
- Prohibit water waste including untended hoses without shut-off nozzles, obvious leaks and water running to waste such as gutter flooding and sprinklers/irrigation whose spray pattern unnecessarily and significantly hits paved areas

Exemptions from Water Use Restrictions

- Lawn Watering Ban Exemption - Newly installed lawns may be exempted from a ban if the procedures listed below are followed. Those wishing to use this exemption would need to contact YVWD office in advance of the exemption being granted, providing their name, address, phone number, size of lawn and type of watering system. This information would allow YVWD to quantify the amount of water used under this exemption and to spot check for compliance. The procedures relating to the exemption and the requirements of the exemption would be clearly outlined at the time of the ban. The following procedures are subject to change:
    - Each applicant would be mailed a packet stating the requirements.
    - Once the requirements are met, an authorization packet would be mailed to the customer including a sign to be posted indicating that YVWD's requirements are being complied with.
    - New lawns must be properly installed, meaning that two inches of organic soil amendment, such as composted yard waste or biosolids, is cultivated into the top six inches of existing soil, at a minimum.
    - New lawns must be watered according to guidelines to be provided in the packet mentioned above.
    - For purposes of this exemption, "new lawn" refers to a lawn newly installed during the current year only. Over seeded or otherwise renovated lawns would not be exempt.

- In the event that the shortage continues to worsen and the Emergency Curtailment Stage is invoked, this exemption would be revoked. It would also be revoked on a case-by-case basis if the rules stated above are not followed, or in the case of a water system emergency. Monitoring and enforcement are at the discretion of YVWD. The existence of an exemption to a watering ban would be announced early in the response process, for example when the Advisory Stage is invoked.

- Automatic Irrigation System Exemption - Users of automatic irrigation systems may be exempt from certain mandatory watering restrictions if proper procedures are followed - but not from a total watering ban. This approach allows an alternate path to achieving savings due to the precision with which such systems can be operated, but is not intended to be a loophole to avoid the need to curtail use. For example, if only 30 minutes of lawn watering is allowed per week, automatic irrigation systems which meet the criteria would be allowed to water based on a certain percentage of evapotranspiration (ET), such as 50%, instead of the time-limit based restriction. [Note: ET is a factor calculated according to climatic data, which is commonly used for lawn watering in commercial applications; ET data would be made available on YVWD's web page and in alternate formats.] In the event of a total watering ban, these users would also be prohibited from watering (unless other safety-based criteria are met, as stipulated in the Water Conservation Implementation Plan).
- The procedures to be met include:
    - The area must be audited by an Irrigation Auditor as certified by the Irrigation Association (list from the IA to be available on request).
    - Irrigation efficiency of the system must be at least 62.5%, as defined by the Irrigation Association (includes both system distribution uniformity and management practices).
    - A baseline irrigation schedule based on historical ET must be provided to the system's owner/operator.
    - The owner/operator must evaluate actual ET on at least a weekly basis and change the irrigation schedule if warranted by the ET index.
    - The owner/operator must contact the utility to provide the name of the auditor, date of inspection and the efficiency rating, as well as the name, address and phone number of the contact person for the site being watered, prior to using the exemption
    - Time of day restrictions, such as watering prohibited between 6:00 am and 8:00 pm, would have to be met.
    - The system must have a functioning rain-shutoff device.
    - Watering limitations stipulated by YVWD would need to be followed. The limitations would be stated as a percent of ET, so that, for example, users who meet the above requirements would be able to water based on 50% of ET (the specific percent amount would be decided upon at the time the restriction is announced, depending on the supply outlook). YVWD's website (www.yvwd.dst.ca.us/conserve.htm) would be regularly updated to provide the information needed for those watering according to this exemption; the information would be available through other means as well.
- Other Exemptions - For purposes of dust control, water may be applied to construction areas or other areas needing to comply with air quality requirements. If recycled water is available, consider requiring or promoting that it be used for dust control, if feasible.
- Ball fields and play fields may be watered at the minimum rate necessary for dust control and safety purposes.
- YVWD will exempt customers with special medical needs such as home dialysis from any emergency surcharge provided individual customers notify YVWD of such a need

Water Supply Actions

- If not already implemented, activate interties and any other alternative sources of supply.

12.8.1.5 Emergency Curtailment Stage – Water Shortage Emergency: Extreme Conservation Measures

This addresses the most severe need for demand reduction and could include a combination of mandatory measures and rate surcharges. This could be used as the last stage of a progressive situation, such as a drought of increasing severity, or to address an immediate crisis, such as a facility failure.

At this stage, YVWD recognizes that a critical water situation exists. Without additional significant curtailment actions, a shortage of water for public health and safety will be imminent. No prior emergency in YVWD's history fits this description.

This stage is characterized by two basic approaches. First, increasingly stringent water use restrictions are established and enforced. Secondly, significant rate surcharges are used to encourage customer compliance. While a rate surcharge may be implemented in either the Voluntary or Mandatory stages, a surcharge is a key component to the success of this stage and previous surcharge may be increased if appropriate.

Emergency Curtailment Action Plan

- Continue all previous, applicable actions.
- Define the problem to the public as an emergency and institute formal procedures to declare an emergency.
- Inform customers of the rate surcharge and how it will affect them. Provide information on an appeal process.
- Coordinate with police and fire departments requesting their assistance in enforcing prohibition of water waste.
- Inform customers that taste and odor water quality problems may occur with system-wide reduced water consumption.
- Inform customers about possible pressure reductions and problems this may entail.
- Define and communicate exemptions for medical facilities and other public health situations.

YVWD Internal Operations for Emergency Curtailment Stage

- Continue and enhance "Water Watcher" patrols.
- Continue actions listed in prior stages.
- Curtail fire flow and pipeline testing unless it can be shown to be essential to protect the immediate public health and safety.
- Further enhance water quality monitoring actions

Supply and Demand Management Actions

Rate surcharges would be implemented to encourage customer compliance with the restrictions, as follows:

- Commercial Customers - Commercial, multifamily and industrial users would be asked to reduce water use by a set percentage of their consumption during the same period in the previous year. Emergency rate surcharges would be established to provide an additional incentive to reduce water use. It is YVWD's intention to establish a multi-tiered structure. This "variable block approach" would allow for different surcharge rates based on the individual customer's consumption during the same period in the previous year. For example, if YVWD were to target desired reduction of 85% from the previous year's consumption in that period, any consumption between 0 and 85% would be billed at one rate and any consumption over 85% would be billed at another, much higher rate. In this way, the targeted reduction amount and resulting surcharges would be customized around each customer's water use patterns, while still resulting in a steep surcharge for consumption in excess of the target amount for each block.
- A billing system modification would be needed to allow YVWD to accomplish this. If this has not been done by the time it may be needed, a simple across-the-board rate surcharge would be applied.
- Residential Customers - A multi-tiered, increasingly steep rate structure would be implemented for residential customers (includes single-family dwellings and duplexes). While there are differences in household size, there is more similarity in residential domestic water use than there is in commercial water use.
    - All lawn and turf irrigation would be prohibited
    - Make recycled water available for street cleaning, construction projects, landscape irrigation, dust control, etc.
    - Require that all fire fighting agencies discontinue the use of water in training exercises until emergency is over.
    - Rescind all construction meter or fire hydrant permits.

Short-Term Emergency Curtailment Plan

Although many of the demand reduction measures employed would be similar to those used during a progressive, weather-related shortage, short-term emergencies are unique because of a lack of preparation time and the urgency of immediate, large-scale demand reductions. Each emergency scenario is different, but most of them require major curtailment actions by customers. Also, unlike a drought, some emergencies would be localized, requiring demand reduction for only a limited geographic area.

Strategies for dealing with emergencies have been developed based on lessons learned from previous water utility events, other utility experiences, and a sorting of measures based on specific criteria.

Throughout water shortage events, consistent conservation messages and information on appropriate demand reduction measures should be delivered to water users through the media and by direct contact. Although exact demand reduction goals may not always be met by water users, the water demands during short-term emergencies must be curtailed enough to be beneficial and avoid more serious water shortages.

There are several criteria by which to decide which demand management measures are appropriate to initially reduce demand during an emergency:

- Timing can the measure(s) or action(s) deliver the necessary savings in the necessary timeframe, i.e., are immediate savings needed or can the system support a gradual reduction in demand;

- Magnitude of savings will the measure produce enough savings to make a meaningful difference i.e., reduce demand to the level the impaired water system can handle;
- Does the action make any impact at the time of year that the emergency occurs, i.e., banning lawn watering will have little impact in the winter months;
- How severe are the cost implications of the measure to the customer, including local business and industry.

The following table provides a summary of the Water Shortage Contingency Plan supply conditions.

Table 12-31. DWR Table 8-1R. Stages of WSCP

Stage	Percent Supply Reduction	Water Supply Condition
1	5-10	Normal Conditions
2	10-15	Up to 15% Voluntary Reduction
3	10-15	Up to 15% Mandatory Reduction
4	15+	Greater than 15% Emergency Reduction

12.8.2 Prohibitions on End Uses

The water use prohibitions for each stage are shown in Table 12-32.

Table 12-32. DWR Table 8-2R. Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3	CII - Restaurants may only serve water upon request	Restaurants are not to provide drinking water to patrons except by request.	Possibly
3	CII – Lodging establishment must offer opt out of linen service	Hotels and motels must offer their guests the option to not have their linens and towels laundered daily, and must prominently display this option in each room.	Possibly
3	Landscape - Limit landscape irrigation to specific days	Upon notice and public hearing, YVWD may determine that the irrigation of exterior vegetation shall be conducted only during specified hours and/or days, and may impose other restrictions on the use of water for such irrigation. The irrigation of exterior vegetation at other than these times shall be considered to be a waste of water.	Possibly
3	Landscape - Limit landscape irrigation to specific times	Exterior landscape plans for all new commercial and industrial development shall provide for timed irrigation and shall consider the use of drought resistance varieties of flora. Such plans shall be presented to and approved by YVWD prior to issuance of a water service letter.	Possibly

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3	Landscape - Limit landscape irrigation to specific times	Public and private parks, golf courses, swimming pools and school grounds which use water provided by the District shall use water for irrigation and pool filling between the hours of 8:00 p.m. and 6:00 a.m.	Possibly
3	Landscape - Other landscape restriction or prohibition	Persons receiving water from YVWD who are engaged in commercial agricultural practices, whether for the purpose of crop production or growing of ornamental plants shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. Upon the request of the General Manager, these persons may be required to prepare a plan describing their irrigation practices and equipment, including but not limited to, an estimate of the efficiency of the use of water on their properties.	Possibly
3	Landscape - Restrict or prohibit runoff from landscape irrigation	No water provided by the District shall be used for the purposes of wash-down of impervious areas, without specific written authorization of the General Manager. Any water used on premises that is allowed to escape the premises and run off into gutters or storm drains shall be considered a waste of water.	Possibly
3	Other - Prohibit use of potable water for washing hard surfaces	No water provided by YVWD shall be used for the purposes of wash-down of impervious areas, without specific written authorization of the General Manager. Any water used on premises that is allowed to escape the premises and run off into gutters or storm drains shall be considered a waste of water.	Possibly
3	Landscape – Other landscape restriction or prohibition	Medians and bordering parkways located within the right-of-way are prohibited from using potable water to irrigate turf or other high water use plant material as identified by the Water Use Classifications of Landscaping Species (WUCOLS) Guide. Bordering parkways are considered the strips of non-functional ornamental turf adjacent to the street. The continued irrigation and preservation of trees is encouraged.	Possibly
3	Other - Require automatic shut of hoses	The washing of cars, trucks or other vehicles is not permitted, except with a hose equipped with an automatic shut-off device, or a commercial facility so designated on YVWD's billing records.	Possibly
3	Pools and Spas - Require covers for pools and spas	All residential, public and recreational swimming pools, of all size, shall use evaporation resistant covers and shall re-circulate water. Any swimming pool which does not have a cover installed during periods of non-use shall be considered a waste of water.	Possibly
3	Other water feature or swimming pool restriction	Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.	Possibly

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3	CII – Other CII restriction or prohibition	Persons receiving water from the District who are engaged in commercial agricultural practices, whether for the purpose of crop production or growing of ornamental plants shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. Upon the request of the General Manager, these persons may be required to prepare a plan describing their irrigation practices and equipment, including but not limited to, an estimate of the efficiency of the use of water on their properties. Commercial and industrial facilities shall, upon request of the General Manager, provide the District with a plan to conserve water at their facilities. The District will provide these facilities with information regarding the average monthly water use by the facility for the last two-year period, or the State of California approved conservation base year. The facility will be expected to provide the District with a plan to conserve or reduce the amount of water used by that percentage deemed by the Board of Directors to be necessary under the circumstances. After review and approval by the General Manager, the water conservation plan shall be considered subject to inspection and enforcement by the District.	Possibly
3	Landscape - Other landscape restriction or prohibition	Commercial nurseries shall discontinue all watering and irrigation. Watering of livestock is permitted as necessary.	Possibly
3	Landscape - Prohibit all landscape irrigation	Watering of parks, school grounds, golf courses, lawns, and landscape irrigation is prohibited.	Possibly
3	Other - Prohibit use of potable water for construction and dust control	No new construction meter permits shall be issued by YVWD. All existing construction meters shall be removed and/or locked.	Possibly
3	Other - Prohibit use of potable water for washing hard surfaces	Washing down of driveways, parking lots or other impervious surfaces is prohibited.	Possibly
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Washing of vehicles, except when done by commercial car wash establishments using only recycled or reclaimed water is prohibited.	Possibly
3	Water Features - Restrict water use for decorative water features, such as fountains	Filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes are prohibited.	Possibly
3	Landscape – Other landscape restriction or prohibition	Commercial nurseries shall discontinue all watering and irrigation. Watering of livestock is permitted as necessary.	Possibly

12.8.3 Penalties, Charges, Other Enforcement of Prohibitions

In the implementation of the water shortage contingency plan, the California Water Code Section 31029 makes any violation of the YVWD's Water Shortage Contingency Plan a criminal misdemeanor and upon conviction thereof, the violator will be subject to punishment by fine, imprisonment, or both as may be allowed by law. In addition to criminal penalties, violators of the mandatory provisions of the ordinance will be subject to civil action initiated by YVWD.

No single strategy can be created which will meet the needs of the District for all emergency scenarios. The criteria established for the Water Shortage Contingency Plan provides the full latitude for the Board of Directors to implementation penalties, charges and other enforcement prohibitions based on the specific situation.

Emergencies initially require quick and immediate response. Once an assessment is made as to how long it will take to restore the system, the immediate response strategy may change if it appears that the repair process will be lengthy. The strategy for most emergencies can be narrowed to measures having the most immediate impact on water supply and consumption. All needed and available back up supplies would be activated during an emergency, including the use of interties and standby water production wells.

12.8.4 Consumption Reduction Methods

YVWD offers various rebates to encourage conservation. The reduction goal is to balance supply and demand.

Table 12-33. DWR Table 8-3R. Stages of WSCP - Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
Ongoing	Expand Public Information Campaign	YVWD will continue to provide information about the use of recycled water as an alternative to drinking water sources, if applicable. Additional water conservation measures will be provided that are designed to reduce consumption by various customer classes.
Advisory	Other	District staff to regulate construction meter activity. This may include restricting quantity of water used and the issuance of new construction meters.
Advisory	Other	District staff to monitor and record potable water irrigation practices at golf courses, parks and schools to effectively regulate the use of limited potable supplies.
Voluntary	Other	Contact largest customers to request percentage reduction. Contact City and other public agencies to inform them of conditions and request their cooperation.
Voluntary	Other	District staff to evaluate whether targeted consumption levels and supply conditions warrant a rate surcharge to reinforce voluntary actions and/or to recover revenue losses

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
Voluntary	Reduce system water loss	Eliminate all operating system water uses determined not to be essential to maintain water quality such as pipeline flushing, reservoir overflows; complete cleaning of any reservoirs known to be vulnerable to warm weather taste and odor concerns.
Emergency	Implement or Modify Drought Rate Structure or Surcharge	Inform customers of the rate surcharge and how it will affect them. Provide information on an appeal process.

12.8.5 Determining Water Shortage Reductions

Under normal conditions, YVWD prepares monthly production reports which are reviewed and compared to production reports and pumping statistics from prior months and the same period of the prior year. The data gathered summarized in these production reports are automatically generated on a daily basis to assist with the determination of water shortage reductions.

12.8.6 Revenue and Expenditure Impacts

It is difficult to precisely gauge the revenue and expenditure impacts of water shortages. The drought contingency plan provides for both prohibitions, water use allotments, and penalty pricing for exceeding allotments, the ultimate revenue impacts will be based upon a mix of responses to these requirements. Additionally, weather can be a factor as well. Customers may find it more difficult to meet allocations during hot weather where a desire to maintain landscaping uses at a higher level exists, and therefore more customers may find themselves paying penalty rates.

For planning purposes, it is assumed that District conservation goals are met at each stage and that revenue losses are proportional to the commodity rate revenue not received, exclusive of penalty rates, plus revenue losses due to particular prohibitions. It is also assumed that additional District expenses for implementing the plan would be offset by excess use penalties.

Based upon YVWD's current fiscal situation, impacts during Stages I and II could be absorbed by District reserves without requiring a rate increase, provided the shortage condition did not persist for more than two years. Impacts beyond two years would need to be reassessed.

Stages III and beyond could require reductions in the pay-as-you-go portion of YVWD's Capital Improvement Program. Additionally, deferring non-critical maintenance items and filling some personnel vacancies would be considered. Should revenue loss impacts begin to affect essential District operations, a temporary emergency surcharge on the base water rate could be imposed to fund District operations.

YVWD makes contributions to a rate stabilization fund contribution in accordance with a District Designated Fund Policy. Funds discussed in the policy include the Rate Stabilization Fund and the Capital Replacement Fund.

In the event of a water shortage, a two-point program will be utilized to meet the fiscal shortfall of reduced water revenues:

1. Reduce operation and maintenance expenses
2. Defer selected capital improvement projects until water shortage situation improves.
3. Rate Stabilization Funds, once accumulated, will serve as a third means of meeting fiscal shortfalls.

12.8.7 Resolution or Ordinance

The latest version of the YVWD Water Shortage Contingency Plan was adopted on June 15, 2011. With the recent emergency water conservation regulations adopted by the State Water Resources Control Board, the YVWD has been reviewing the Water Shortage Contingency Plan for proposed changes. Based on the final review, the YVWD will be presenting an updated document for the Board of Directors to review and evaluate to prepare for future shortages.

12.8.8 Catastrophic Supply Interruption

YVWD has identified system vulnerabilities due to fire, earthquake, and power outages. YVWD has developed an Emergency Response Plan. YVWD has in place back-up power supplies at critical locations within the distribution system. Due to South Coast Air Quality Management Board rules and economic restraints, a back-up power supply source at every plant within YVWD's system is not feasible. YVWD maintains portable pumps that can be used to transfer water internally, but cannot be used for production.

Currently, YVWD's water storage capacity would provide a potable supply for customers' non-irrigation uses (assumes implementation of Water Shortage Contingency Plan) for an estimated two to three days. As described above, YVWD participates in multiple mutual aid agreements and has agreements in place for the provision of water supply and/or manpower. In the event of a natural or man-made disaster that could affect the YVWD's ability to provide a potable water supply for up to thirty days, the following measures will be implemented as required:

1. The Boil Water notification program will be activated. The notice will be provided to local radio stations and newspapers. YVWD will contact the media and City and County agencies. Customers will be notified of supplemental sources of water for cooking and drinking (e.g. swimming pools, water heaters, and bottled water).
2. YVWD is a participant in Emergency Response Network of the Inland Empire (ERNIE), a water/wastewater mutual aid network within San Bernardino and Riverside counties. During a Catastrophic Supply Interruption, the Mutual Aid Agreement with ERNIE will be implemented. The General Manager will contact general managers from surrounding agencies to obtain assistance in providing manpower for repairs and/or a supplemental supply of water.
3. A public information program will be initiated. The General Manager will appear on local television and provide daily reports to the local newspaper and radio stations. Members of the Board of Directors will speak to local service clubs and chambers of commerce.

12.8.9 Minimum Supply Next Three Years

The UWMP Act requires a retailer to quantify the minimum water supply available during the next three-year period, assuming 2016 to 2018 repeat the driest three-year historic sequence for each water

supply source. YVWD has adequate supplies available to meet projected demands should a multiple-dry year period occur during the next three years.

Table 12-34. DWR Table 8-4R. Minimum Supply Next Three Years (AF)

Available Water Supply	2016	2017	2018
Available Water Supply	14,500	14,500	14,500

12.9 Supply and Demand Assessment

The Normal/Average year is a year in the historical sequence that most closely represents median runoff levels and patterns. This section summarizes YVWD's water supplies available to meet demands over the planning period during an average/normal year and compares them to demands for the same period.

Table 12-35. DWR Table 7-2R. Normal Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	28,879	30,413	31,598	33,358	32,608
Demand Totals	12,891	13,751	14,730	15,815	17,007
Difference	*15,988*	*16,662*	*16,868*	*17,543*	*15,601*

The single-dry year is generally the lowest annual runoff for a water source in the record. The single-dry year may differ for various sources. This section summarizes YVWD's water supplies available to meet demands over the planning period during a single-dry year and compares them to demands for the same period.

Table 12-36. DWR Table 7-3R. Single Dry Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	22,379	23,913	25,098	26,858	26,108
Demand Totals	11,992	12,825	13,775	14,829	15,991
Difference	*10,387*	*11,088*	*11,323*	*12,029*	*10,117*

The multiple-dry year is generally the lowest annual runoff for a three year or more consecutive period. The multiple-dry year period may differ for various sources. This section summarizes YVWD's water supplies available to meet demands over the planning period during a multiple-dry year period and compares them to demands for the same time frame.

Table 12-37. DWR Table 7-4R. Multiple Dry Years Supply and Demand Comparison (AF)

Year	Totals	2020	2025	2030	2035	2040
First Year	Supply Totals	24,617	26,304	27,608	29,544	28,719
	Demand Totals	12,441	13,288	14,252	15,322	16,500
	Difference	*12,176*	*13,016*	*13,356*	*14,222*	*12,219*
Second Year	Supply Totals	24,617	26,304	27,608	29,544	28,719
	Demand Totals	12,441	13,288	14,252	15,322	16,500
	Difference	*12,176*	*13,016*	*13,356*	*14,222*	*12,219*
Third Year	Supply Totals	24,617	26,304	27,608	29,544	28,719
	Demand Totals	12,441	13,288	14,252	15,322	16,500
	Difference	*12,176*	*13,016*	*13,356*	*14,222*	*12,219*

Table 12-38. DWR Table 10-1R. Notification to Cities and Counties

City Name	60 Day Notice	Notice of Public Hearing
Banning	☑	☑
Beaumont	☑	☑
Calimesa	☑	☑
Highland	☑	☑
Redlands	☑	☑
Riverside	☑	☑
San Bernardino	☑	☑
Yucaipa	☑	☑
County Name	**60 Day Notice**	**Notice of Public Hearing**
Riverside County	☑	☑
San Bernardino County	☑	☑

13 City of Colton

13.1 System Description

The City of Colton Water Department is the municipally-owned utility that provides potable and non-potable water at retail to customers primarily within the City of Colton. Colton's existing potable water system facilities consist of 15 wells, 5 main booster pumping plants, 9 water storage reservoirs, 2 pressure reducing facilities, and over 120 miles of water transmission and distribution pipelines.

13.1.1 General Description

Colton Water Department provides water service for domestic consumption, fire protection, and irrigation customers within its service area. Colton, which was incorporated in 1887, is approximately 50 miles east of Los Angeles, bounded by the City of San Bernardino on the north and northeast, the City of Grand Terrace and unincorporated areas of Riverside County on the south, the City of Loma Linda on the east, and the City of Rialto on the west. Colton categorizes customers as residential, commercial, municipal, and "other" uses. For 2015, 57 percent of water deliveries were for residential use and 41 percent for commercial use, with the remainder being split between municipal and other uses.

13.1.2 Service Area Boundary Map

Colton's service area covers approximately 90 percent of the City of Colton. It includes 14 square miles in the City of Colton and approximately 0.8 square mile of unincorporated area in San Bernardino County. Colton's service area is within the boundaries of Valley District (Figure 13-1).

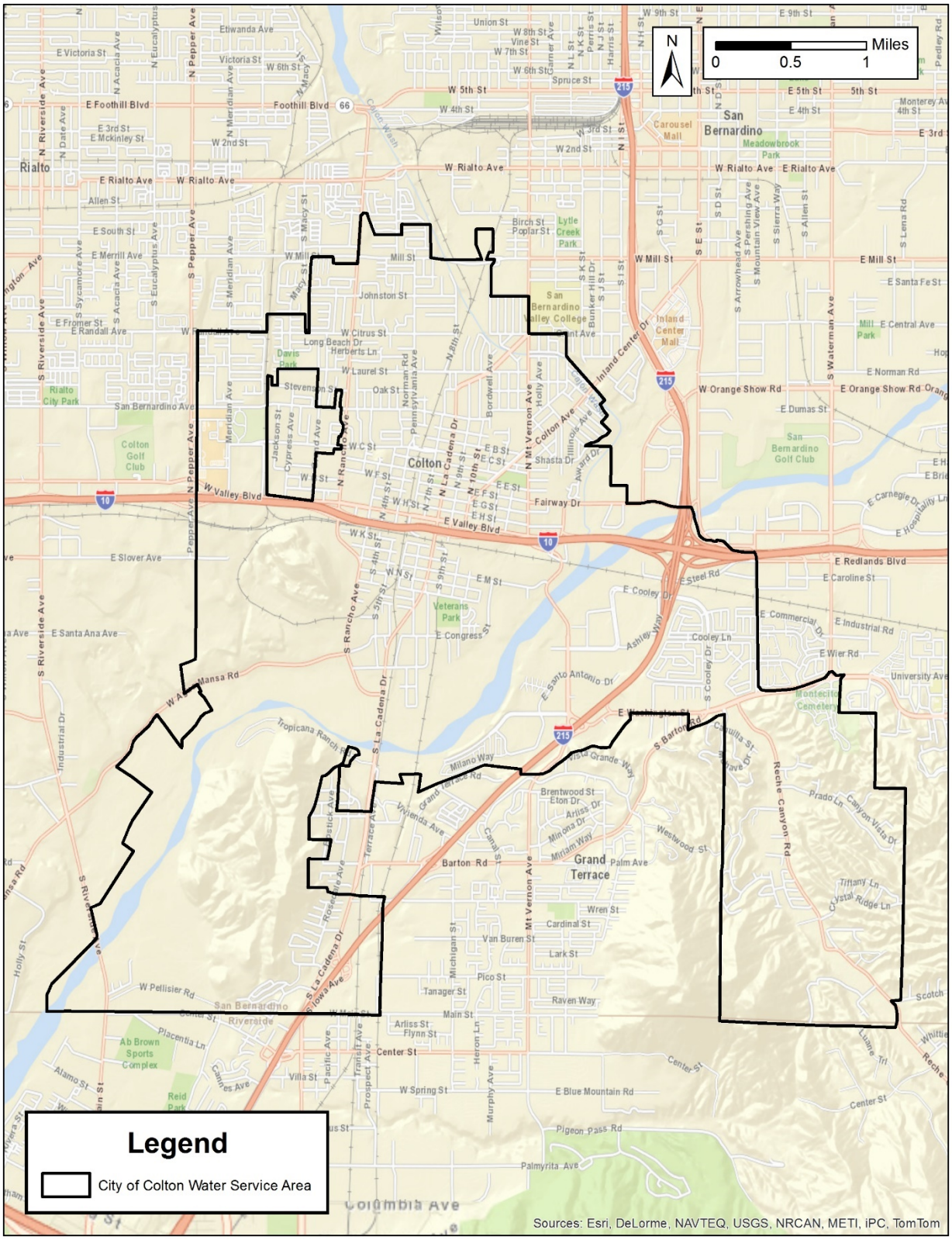


Figure 13-1. City of Colton Service Area

13.1.3 Service Area Climate

Colton's service area is located within the South Coast Air Basin. The basin is a 6,600 square mile area bounded by the Pacific Ocean to the west, and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties.

Average temperature, precipitation, and evapotranspiration by month are shown in Table 13-1. Evapotranspiration (ET) is the loss water to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indicator of how much water crops, lawn, garden, and trees need for healthy growth and productivity. ET from a standardized grass surface is commonly denoted as ETo. These data are based on 30 years of record (1986-2015) at Station 044 (University of California Riverside) within the California Irrigation Management Information System (CIMIS).

Table 13-1. Historical Climate Data

Month	Average Temperature (°F)	Average Precipitation (in.)	Average Standard ETo (in.)
January	52.4	3.22	2.53
February	54.6	3.25	2.87
March	56.7	2.86	4.30
April	60.9	1.29	5.38
May	65.6	0.47	5.82
June	71.3	0.09	6.76
July	77.7	0.04	7.38
August	77.7	0.15	7.09
September	73.9	0.33	5.51
October	66.5	0.71	3.97
November	58.6	1.32	2.89
December	53.3	2.38	2.38
Total P / Total ETo		16.1	56.9
Notes: Precipitation and temperature for NOAA weather station 0407723 in San Bernardino; data from 1893 through 2004; http://wrcc.dri.edu; ETo data for CIMIS weather station 44 at University of California, Riverside; http://wwwcimis.water.ca.gov/			

13.1.4 Service Area Population and Demographics

For the 2015 UWMP cycle, the California Department of Water Resources (DWR) has developed a GIS-based tool to estimate the population within a water agency's service area using census data. This tool was used to intersect Colton's water service area with compiled census data to estimate historic populations for Colton's water service area. The tool provided service area populations for 1990, 2000, and 2010 using census data. The tool also used the number of residential connections in 2010 and 2015 to estimate a 2015 service area population of 45,496.

The Southern California Association of Governments (SCAG) has developed a forecast called the 2012 Adopted Growth Forecast. As part of the 2012 Adopted Growth Forecast, SCAG has estimated the population in 2020 and 2035 inside each of approximately 4,000 traffic analysis zones (TAZ) that cover southern California. GIS software was used to intersect Colton's service area with the SCAG projections

to arrive at population estimates for 2008, 2020, and 2035. Colton used these values to calculate a compound annual growth rate of 1.3% for the period from 2015 to 2020, and a compound annual growth rate of 1.2% beyond 2020. These growth rates were used to develop population estimates through 2040, shown in Table 13-2.

Colton has evaluated known potential developments. It is assumed all water demand from these known developments will be realized by year 2020. These new developments include:

- The proposed Iron Horse Tract Homes at Reche Canyon Area. This development is proposed to include construction of 186 new homes.
- Construction of 73 homes in the Rosedale tract located in South Colton.
- Construction of 37 homes in the Crystal Ridge tract located on Reche Canyon Road.

Table 13-2. DWR Table 3-1R. Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040
Population Served	45,496	48,429	51,440	54,638	58,035	61,643

13.2 System Water Use

Colton's water supply is comprised entirely of groundwater extracted from the San Bernardino Basin Area (Bunker Hill Basin portion), the Rialto-Colton Basin, and the Riverside Basin (Riverside North Basin portion). Colton does not currently import water in order to meet the demands of its service area.

Colton does not currently utilize recycled water and does not project recycled water use in the future.

13.2.1 Water Uses by Sector

Colton categorizes customers as residential, commercial, municipal and “other” uses. Water deliveries for each customer class are summarized in Table 13-3. On average, 56 percent of water deliveries are for residential use and 37 percent are for commercial use, while the remaining seven percent is attributed to municipal water use. Landscape water use has not been separately tracked since 2005.

Table 13-3. DWR Table 4-1R. Demands for Raw and Potable Water – Actual (AF)

Use Type	Level of Treatment When Delivered	2011	2012	2013	2014	2015
Residential	Drinking Water	5,295	5,676	5,495	5,274	4,603
Commercial	Drinking Water	3,606	3,565	3,494	3,538	3,304
Municipal	Drinking Water	396	480	461	599	6
Construction	Drinking Water	12	24	178	69	41
Fireline	Drinking Water	44	26	27	37	30
Nonrevenue	Drinking Water	616	362	758	444	924
Sales to City of Rialto	Drinking Water	0	618	0	0	0
Sales to County of San Bernardino	Drinking Water	0	0	0	200	100
	Total	9,969	10,751	10,413	10,161	9,008

Projected water use was estimated using the percentage change between the calculated GPCD for 2015 and target GPCD for 2020. The percentage change and population growth rates were applied to Colton’s

2015 water demands to derive estimated future water demands for 2020 through 2040 shown in Table 13-4. Colton does not anticipate any routine or single large water sales to other agencies in the future. Colton does not anticipate future water use related to saline barriers, groundwater recharge operations, or recycled water. For the purpose of projections, nonrevenue water is assumed to be 11 percent; this is conservative for planning purposes. Colton will continue efforts to decrease water loss and thereby reduce gallons per capita per day of water use.

Table 13-4. DWR Table 4-2R. Demands for Raw and Potable Water – Projected (AF)

Use Type	Level of Treatment	2020	2025	2030	2035	2040
Residential	Drinking Water	5,327	5,658	6,009	6,383	6,780
Commercial	Drinking Water	3,823	4,061	4,314	4,582	4,867
Municipal	Drinking Water	7	7	8	8	9
Construction	Drinking Water	47	50	54	57	60
Fireline	Drinking Water	35	37	39	42	44
Nonrevenue	Drinking Water	1,036	1,120	1,187	1,258	1,334
Future Development; Rosedale Tract	Drinking Water	45	91	91	91	91
Future Development; Iron Horst Tract	Drinking Water	115	231	231	231	231
Future Development; Crystal Ridge Tract	Drinking Water	23	46	46	46	46
	Total	10,458	11,301	11,978	12,698	13,462

Table 13-5. DWR Table 4-3R. Total Water Demands (AF)

Demand	2015	2020	2025	2030	2035	2040
Potable and Raw Water	9,008	10,458	11,301	11,978	12,698	13,462
Recycled Water Demand	0	0	0	0	0	0
Total Water Demand	9,008	10,458	11,301	11,978	12,698	13,462

13.2.2 Distribution System Water Losses

For the purpose of projections, nonrevenue water is assumed to be 11 percent of water sales. Colton will continue efforts to decrease water loss and thereby reduce gallons per capita per day of water use.

Colton prepared an AWWA water audit using the methodology specified in the DWR Guidebook. The results are summarized in Table 13-6.

Table 13-6. DWR Table 4-4R. Water Loss Summary Most Recent 12 Month Period Available

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss (AF)
01/2015	924

13.2.3 Estimating Future Water Savings

Colton is committed to long-range planning to provide a reliable, cost-effective water supply to its customers. Colton actively monitors water consumption in its service area, in part to prepare required monthly reports for the State Water Resources Control Board.

For this report, Colton has projected that future demands will increase at a percentage growth rate that incorporates two factors: the percentage growth in service area population, and potential changes in the per-capita consumption. This approach provides estimates for future system-wide demand that can be used for long-range planning.

In the 2015 UWMP, water suppliers have the option of preparing more detailed demand forecasts by estimating demand factors based on land use categories. For example, Colton could identify typical water use per single family customer and per commercial account. These customer classes can be further sub-divided by lot size, neighborhood, or other variables. The intent is to quantify the estimated water use per customer in different customer classes, and then to forecast how future changes will impact water use within each customer class.

For this document, Colton has elected not to develop land use-based demand factors and apply future savings from codes and standards. Recent drought regulations have induced significant changes in water consumption patterns, and there is considerable uncertainty as to how demands will change in the future if the drought subsides. Given this uncertainty, Colton elected not to quantify passive savings for this UWMP.

13.2.4 Water Use for Lower Income Households

Senate Bill 1087 requires water use projections in an UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier. The Colton Water Department serves two jurisdictions: Colton and certain unincorporated areas in the County of San Bernardino. Based on data in the housing element, it is estimated that about 51 percent of all Colton households qualify as low income. Water usage by low income customers has been included in future demand projections.

Table 13-7. Estimated Demands for Lower-Income Households (AF)

Demand	2015	2020	2025	2030	2035	2040
Residential	2,355	2,725	2,895	3,075	3,266	3,469
Total	2,355	2,725	2,895	3,075	3,266	3,469

13.3 SB X7-7 Baselines and Targets

An urban retail water supplier must set a 2020 water use target (herein called the Compliance Water Use Target) and a 2015 interim target (herein called the Interim Water Use Target). Colton is using method one to calculate the Compliance and Interim Water Use Targets as set forth by Water Code section 10608.20(b). The method one calculation is done by taking eighty percent of the urban water supplier's baseline GPCD.

Finally, the selected Compliance Water Use Target must be compared against what DWR calls the "Maximum Allowable GPCD". The Maximum Allowable GPCD is based on 95 percent of a 5-year average base gross water use from 2003 to 2010. The Maximum Allowable GPCD is used to determine whether a supplier's 2015 and 2020 per capita water use targets meet the minimum water use reduction of the SBX7-7 legislation. Specifically, if an agency's Compliance Water Use Target is higher than the Maximum Allowable GPCD, the agency must instead use the Maximum Allowable GPCD as their target.

13.3.1 Updating Calculations from 2010 UWMP

For the 2015 UWMP cycle, DWR has made a GIS-based population tool available to calculate service area population using Census Bureau data. Colton has used this tool to re-calculate its service area population, baseline per-capita use, and compliance targets.

13.3.2 Baseline Periods

Years 1999 to 2008 have been selected for calculation of the 10-year base period, while years 2003 to 2007 have been selected for calculation of the 5-year base period. The 10-year average Base Daily Per Capita Water Use for Colton is 256 GPCD; the 5-year is 256 GPCD.

13.3.3 Service Area Population

Colton's service area population was calculated using the DWR population estimation tool. The GIS-based tool was used to intersect Colton's service area with Census Bureau data to calculate a service area population for 1990, 2000, and 2010. Populations for intermediate years were calculated by straight-line interpolation between census years.

13.3.4 Gross Water Use

The calculation of gross water use begins with the total amount of water that was put into the potable water distribution system by Colton. Water that was exported to another agency was then subtracted, to leave the amount used by Colton retail customers.

Water delivered to agricultural customers was included in the urban water demand because those customers, although designated as agricultural customers, receive water from Colton's potable system and use that water to meet both potable and irrigation demands.

For the period of 1999 to 2008, gross water use in the Colton service area fluctuated between 10,957 and 13,205 acre-feet per year.

13.3.5 Baseline Daily per Capita Water Use

For the period from 1999 through 2008, the average base daily per capita water use is 256 GPCD.

13.3.6 2015 and 2020 Targets

In addition to calculating base gross water use, SBX7-7 requires the retail water supplier to identify its demand reduction targets. The methodologies for calculating demand reduction targets were described above. Colton is choosing to meet SBX7-7 targets as an individual agency rather than as part of a regional alliance. Colton has selected Method 1 to calculate its 2020 Compliance Water Use Target and Interim Water Use Target. The resulting Compliance Water Use Target is 205 GPCD and the Interim Water Use Target is 230 GPCD. Based on 95 percent of the 5-year baseline, the Maximum Allowable GPCD is 243. The Compliance Water Use Target, under Method 1 (205 GPCD) is less than the Maximum Allowable GPCD, so no adjustments to the Compliance Water Use Target are necessary.

Table 13-8. DWR Table 5-1R. Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline GPCD	2015 Interim Target	Confirmed 2020 Target
10-year	1999	2008	256	230	205
5-year	2003	2007	256		

13.3.7 2015 Compliance Daily per Capita Water Use

The City of Colton's GPCD decreased to 175 for 2015. The 2015 interim target GPCD is 230. The City meets its requirement and is on-track to meet the 2020 target GPCD of 205 GPCD.

Table 13-9. DWR Table 5-2R. 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Extra-ordinary Events	Economic Adjust-ment	Weather Normalization	Total Adjustments	Adjusted 2015 GPCD	2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015?
175	230	0	0	0	0	175	175	YES

13.4 Demand Management Measures

The reporting format for Demand Management Measures (DMMs) in the 2015 UWMP is different than the 2010 UWMP. This discussion has been arranged into the seven sections recommended by DWR in the 2015 UWMP Guidebook.

13.4.1 Water waste prevention ordinances

Colton supports measures prohibiting gutter flooding, single-pass cooling systems in new connections, non-recirculating systems in all new conveyor car wash and commercial laundry systems, and non-recycling decorative water fountains. As part of their 2010 UWMP, Colton prepared a draft no-waste ordinance, An Ordinance of the City Council of the City of Colton Prohibiting the Wasteful Use of Water and Setting Forth Regulations and Restrictions on Water Use.

Colton has full authority to adopt and enforce ordinances through their municipal codes. The no-waste ordinance was adopted in September of 2014, and updated in June of 2015 (both attached in Appendix G). Colton will enforce the no-waste ordinance, including responding to reported or observed violations and educating and assisting the user in corrective action.

13.4.2 Metering

All of Colton’s customers (residential and commercial) are metered, as are all new connections. All customers are billed with commodity rates. Colton has a meter maintenance and replacement plan where meters are replaced either when they fail or every 10 years.

13.4.3 Conservation pricing

Colton bills all domestic water accounts volumetrically, per 100 cubic feet of use, plus a monthly service based on meter size. Based on the ratio of volumetric to total charges over the past five years.

13.4.4 Public education and outreach

The public information program encourages Colton's customers to conserve water and provides a means by which customers can measure the effectiveness of water conservation efforts.
Specific program components include:

- Informational pamphlets on landscaping using water efficient methods for distribution with utility bills;
- Current water bills show the current months versus the past few months. The City of Colton is looking to change this to show the same month in the last several years;
- Distribution of pamphlets which include specific conservation practices; facts concerning state, local, residential, and individual water consumption statistics; and waste statistics;
- Colton is working to get a web based water conservation tool in place that shows usage comparisons, and provide monthly reports; and
- Providing water conservation information on public access television (Channel 3) and postings on social media (Facebook).
- The City is working to coordinate school visits where possible and will visit should a school/teacher reach out.

13.4.5 Programs to assess and manage distribution system real loss

Colton plans to implement the standard water audit approach per Manual 36. The AWWA water audit methodology will be performed annually and losses carefully monitored. To date, Colton has been conducting system water audits, leak detection and repair as necessary in order to maintain its distribution system. Meters that are 2 inches or less are repaired or replaced as-needed, if found to be operating incorrectly. Defective meters are usually found by the meter reader or by the customer service department, which reviews consumption histories. Colton maintains a complete record and map of distribution system leaks and repairs. Analysis of this record allows pipelines and other facilities to be scheduled for replacement as part of Colton's capital improvement program. Most of the older, steel water mains throughout Colton have been replaced, greatly reducing the incidence of leaks within the distribution system. Maintenance crews are on call at all times to respond to water leaks, pipeline ruptures, and damaged facilities as needed. Continued implementation of water loss control practices and procedures is not anticipated to have an effect on Colton’s ability to further reduce demand.

Colton is looking into developing a program to perform water audits in conjunction with electrical audits.

13.4.6 Water conservation program coordination and staffing support

In 2013 a Water Conservation Specialist was hired and in 2015 they were promoted to Senior Water Conservation Specialist. Currently, the Senior position is filled, and the Water Conservation Specialist position is to be filled in 2016.

13.4.7 Other demand management measures

All building codes are up to date and the City of Colton offers rebates for: high efficiency toilets, dishwashers, washing machines, shower heads, sprinkler heads, weather based irrigation timers, drought tolerant plants, drip irrigation systems, and mulch. We also offer a turf removal incentive. The rebate amounts are considered on a case by case basis. This means that, for example, if a customer

applies for a rebate for 30 toilets, we would assess our budget to see if we can provide them a $100 rebate for all 30 toilets. The same “formula” would apply for all rebates except the outdoor. CII can apply for up to $5000 for turf, and up to $2500 for drought tolerant plants, drip, and mulch combined.

Colton is in the planning phase for direct install program of efficient fixtures for multi-family properties. As well as a program where a contractor will remove grass lawns or landscapes and plant drought tolerant landscaping for residential properties.

13.4.8 Planned Implementation to Achieve Water Use Targets

Colton's current per-capita consumption is less than its 2020 compliance target. Colton expects to continue to implement its current conservation programs to encourage conservation and maintain per-capita consumption below the compliance target.

13.5 System Supplies

Colton's water supply is comprised entirely of groundwater extracted from the San Bernardino Basin Area (Bunker Hill Basin portion), the Rialto-Colton Basin, and the Riverside Basin (Riverside North Basin portion). Colton does not currently import water in order to meet the demands of its service area.

13.5.1 Purchased or Imported Water

Colton does not currently import water. For the period of this Plan, groundwater pumped by Colton is expected to meet all water supply needs.

13.5.2 Groundwater

Colton extracts groundwater from three adjudicated basins: the SBBA, Rialto-Colton, and Riverside North Basin Areas. Colton currently utilizes ten SBBA wells, four Rialto-Colton Basin wells, and one Riverside North Basin Well. The SBBA wells contribute, on average over the past five years, 58 percent of the total groundwater pumped annually while the Rialto-Colton Basin Wells contributes 27 percent and Riverside North contributes 15 percent.

13.5.3 Historical Groundwater Pumping

Colton's historical production for the past five years is shown in Table 13-10.

Table 13-10. DWR Table 6-1R. Groundwater Volume Pumped (AF)

Groundwater Type	Location or Basin Name	Water Quality	2011	2012	2013	2014	2015
Alluvial Basin	Bunker Hill	Drinking Water	4,784	6,222	5,170	7,455	6,570
Alluvial Basin	Rialto-Colton	Drinking Water	3,365	2,857	3,093	1,607	1,369
Alluvial Basin	Riverside North	Drinking Water	1,821	1,672	2,151	1,099	1,070
	Total		9,969	10,751	10,413	10,161	9,008

13.5.4 Surface Water

Colton currently has no plans for future use of surface water supplies.

13.5.5 Stormwater

The IRWMP included an assessment of stormwater capture opportunities. The findings of this analysis translated in the definition of a number of potential water supply projects, which were further developed and described in the IRWMP, as discussed in Section 2.6.

13.5.6 Wastewater and Recycled Water

The City of Colton owns, operates and maintains a wastewater collection, pumping and treatment system. The wastewater treatment plant also serves the City of Grand Terrace and unincorporated San Bernardino County areas. The plant utilizes a conventional and extended aeration secondary treatment process to product treated effluent in compliance with Regional Water Quality Control Board regulations. In addition, a regional tertiary treatment plant serving both the Cities of Colton and San Bernardino treats the effluent from our wastewater treatment plant and returns the water to the Santa Ana River.

13.5.6.1 Recycled Water Coordination

Colton provides wastewater collection and treatment services to customers within its service Area. Colton owns, operates, and maintains a wastewater collection, pumping, and treatment system. Colton's WWTP also serves the City of Grand Terrace and some nearby unincorporated County areas. Colton jointly owns, with SBMWD, the RIX facility. The RIX facility further treats discharge from Colton's WWTP and from the San Bernardino Water Reclamation Plant.

13.5.6.2 Wastewater Collection, Treatment, and Disposal

Colton currently collects and treats approximately 7 MGD of wastewater from its service area, as well from City of Grand Terrace and some unincorporated County areas. Wastewater conveyed to Colton's WWTP undergoes conventional and extended aeration secondary treatment processes to produce secondary treated effluent in compliance with Regional Water Quality Control Board (Santa Ana River Basin Region) regulations. Treated effluent from Colton's wastewater treatment plant is conveyed to the RIX facility. The RIX facility treats a combined secondary-treated effluent stream of approximately 33 MGD from Colton's WWTP and the San Bernardino Water Reclamation Plant to tertiary standards in accordance with the standards set forth in Title 22, Division 4 of the California Code of Regulations (hereinafter, Title 22). The RIX facility utilizes natural biofiltration through the use of percolation basins, followed by an ultraviolet disinfection system. The RIX-treated wastewater consistently meets or exceeds required discharge standards and is often superior in quality to effluent produced by conventional tertiary treatment facilities (see Table 13-11). All of the RIX-treated water is discharged to the Santa Ana River.

Table 13-11. DWR Table 6-2R. Wastewater Collected within Service Area in 2015

Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2015 (AF)	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
City of Colton	Metered	4,593	City of Colton	Colton Water Reclamation Facility	Yes	No
	Total Wastewater Collected from Service Area in 2015	4,593				

Table 13-12. DWR Table 6-3R. Wastewater Treatment and Discharge within Service Area in 2015

Waste-water Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Waste-water Discharge ID Number	Method of Disposal	Does this Plant Treat Waste-water Generated Outside the Service Area?	Treat-ment Level	Waste-water Treated Volume 2015 (AF)	Discharged Treated Waste-water Volume 2015 (AF)	Recycled Within Service Area Volume 2015
Colton Water Reclamation Facility	Rapid Infiltration / Extraction (RIX) Plant	to RIX for additional treatment		Other	Yes	Secondary, Disinfected - 2.2	5,713	5,713	0
Rapid Infiltration/ Extraction (RIX) Plant		Santa Ana River		River or creek	Yes	Tertiary	34,000	34,000	0
						Total	39,713	39,713	0

13.5.6.3 Actions to Encourage and Optimize Future Recycled Water Use

Recycled water facilities are not currently available in Colton's service area. No recycled water is currently used in the Colton service area. Construction of such facilities is cost prohibitive at this time and no recycled water use is anticipated during the period covered by this Plan.

Despite the fact that developing recycled water facilities in the Colton service area is cost prohibitive at the current time, Colton does recognize the potential value of recycled water. Should recycled water become available in Colton, potential users would include landscape irrigation at schools, cemeteries, parks, and roadway medians as well as industrial process water. However, because Colton does not specifically track these uses, potential recycled water demand cannot be quantified.

13.5.7 Desalinated Water Opportunities

The need for brackish groundwater desalting is somewhat limited in the San Bernardino Valley. While elevated salts are a concern in the groundwater basins of the Western Judgment (SBBA, Rialto-Colton, Riverside), average TDS levels in all of these basins are currently below 500 mg/L (DWR 2003). However, elevated salts are an issue for retailers that overlie the San Timoteo Groundwater Basin and agencies in this basin are considering implementing desalter operations. The area is fortunate to have a brine line which can transport non-reclaimable waste, by gravity, from the City of San Bernardino Wastewater Treatment Plant to the Orange County Sanitation District's treatment plant.

The development of (or financial participation in) a new seawater desalination project, while costly, is being investigated by other wholesale and retail water agencies in southern California. Because the San Bernardino Valley is an inland area, in order for desalination to work it would be necessary for agencies in the San Bernardino Valley to join with other water purveyors in the development of a coastal desalination facility and then receive water from the SWP supplies of other participants via an exchange. It is not cost-effective for the San Bernardino Valley to receive direct delivery of desalted ocean water.

Seawater desalination is an alternative that is technically viable. However, production and treatment costs have historically been several times higher than those of SWP costs and conventional treatment.

13.5.8 Exchanges or Transfers

Colton does not anticipate regular or long-term transfers or exchanges, during the period covered by this Plan. Rather any transfer or exchanges would be as-needed related to an emergency. Colton has two emergency water system connections with the City of San Bernardino (1,000 GPM and 800 GPM); one with the City of Riverside (800 GPM); two with Riverside Highland Water Company (1,000 GPM and 800 GPM), and one with WVWD (1,500 GPM).

13.5.9 Future Water Projects

The city recently completed a Water Master Plan to identify necessary upgrades to its water distribution system. These projects are intended to increase the reliability of the City's system; they are not intended to create new sources of supply.

13.5.10 Summary of Existing and Planned Sources of Water

The only future water supply projects anticipated at this time are the construction and completion of Wells 30 and 31 in the Riverside North Basin.

In the unplanned and unexpected event existing groundwater resources prove to be inadequate to meet service area demands in the future, Colton will further evaluate potential alternative sources of supply, such as imported water, water transfers/exchanges, and recycled water.

Table 13-13. DWR Table 6-8R. Water Supplies – Actual

Water Supply	Additional Detail on Water Supply	2015 Actual Volume (AF)	2015 Water Quality
Groundwater	Bunker Hill	6,570	Drinking Water
Groundwater	Rialto-Colton	1,369	Drinking Water
Groundwater	Riverside North	1,070	Drinking Water
	Total	9,008	

Table 13-14. DWR Table 6-9R. Water Supplies – Projected (AF)

Water Supply	Additional Detail on Water Supply	Water Quality	2020	2025	2030	2035	2040
Groundwater	Bunker Hill	Drinking Water	6,783	6,994	7,408	7,991	7,991
Groundwater	Rialto-Colton	Drinking Water	4,375	4,511	4,778	5,154	5,154
Groundwater	Riverside North	Drinking Water	1,450	1,495	1,584	1,708	1,708
	Total		12,608	13,000	13,770	14,853	14,853

13.6 Water Supply Reliability Assessment

This chapter includes an assessment of how reliable Colton's water supplies might be during a dry period. This discussion focuses on the long-term (one to many years) reliability in response to below-normal precipitation. Colton maintains a number of interconnections with neighboring agencies that could be used to provide supplemental water during a short-term reduction in supply.

13.6.1 Constraints on Water Sources

Perchlorate was first detected in Colton's water supply wells in the Rialto-Colton Basin (RCB) in 1997. Colton evaluated best available treatment technologies for perchlorate, and two ion exchange treatment systems were installed in 2003 to treat water from three wells (Colton -15, - 17 and -24). These systems are still in use.

Ongoing investigations by Colton and others in 2009 and 2010 have shown that the perchlorate plume persists. Until basin-wide efforts are implemented by the responsible parties to remediate the perchlorate, Colton will continue to use wellhead treatment systems. Based on current conditions, water quality is not expected to affect Colton's supply reliability. However, water quality issues are constantly evolving. Colton will take action to protect and treat supplies when needed, though water quality treatment is known to have significant costs.

13.6.2 Reliability by Type of Year

In general, groundwater is less vulnerable to seasonal and climatic changes than surface water (i.e. local and imported) supplies. The 2015 Western-San Bernardino Watermaster, independently reviewed groundwater conditions in 2015 to assess the change in groundwater levels. Historically, the Watermaster permitted additional extraction beyond the specified water rights from the Bunker Hill Basin to decrease higher than optimal groundwater levels in the basin.

DWR defines a multiple-dry year period as "three or more consecutive years with the lowest average annual runoff." Currently and in the future Colton obtains its water supply from groundwater sources.

Available groundwater supply is not expected to change, as discussed in Chapter 2 and shown in Table 13-15.

Table 13-15. Available Supply During Single and Multiple Dry Years

Year Type	Base Year	Volume Available	% of Average Supply
Average Year	2015	12,608	100
Single-Dry Year		12,608	100
Multiple Dry Year One		12,608	100
Multiple Dry Year Two		12,608	100
Multiple Dry Year Three		12,608	100

13.6.3 Regional Supply Reliability

Colton is committed to minimizing the need to import water from other regions. Colton participates in regional supply planning projects to optimize and enhance the use of local groundwater resources. Colton operates a number of conservation programs to implement various Demand Management Measures.

13.7 Water Shortage Contingency Planning

Water supplies may be interrupted or reduced significantly in a number of ways, such as drought which limits supplies, an earthquake which damages delivery or storage facilities, or a regional power outage. Earlier sections of this UWMP describe water shortage contingency planning for regional water supply sources (imported water, groundwater). This section focuses on water shortage contingency planning for City of Colton.

13.7.1 Stages of Action

13.7.1.1 Stage I: Normal Conditions

Water Conservation Stage I applies during periods when the City is able to meet all of the water demands of its customers. Water Conservation Stage I is in effect at all times unless the City Council otherwise declares that another water conservation stage is in effect pursuant to this chapter.

13.7.1.2 Stage II: Water Alert

Stage II applies during periods when the City will not be able to meet all of the water demands of its customers.

13.7.1.3 Stage III: Water Warning

Stage III applies during periods when the City will not be able to meet all of the water demands of its customers.

13.7.1.4 Stage IV: Water Emergency

Stage IV shall apply when the ordinary demands and requirements of City water customers cannot be satisfied without depleting the City water supply to the extent that there would be insufficient water for human consumption, sanitation and fire protection. A water shortage emergency includes both an immediate emergency, in which the City is unable to meet current water needs of persons within the City, as well as a threatened water shortage, in which the City determines that its supply cannot meet an

increased future demand. The use of water shall be limited to essential household, commercial, manufacturing, or processing uses only, except where other uses may be allowed pursuant to a permit issued by the Department. Other restrictions may be necessary during a declared Water Shortage Emergency, to safeguard the adequacy of the water supply for domestic, sanitation, fire protection, and environmental requirements.

The stages are shown in Table 13-16.

Table 13-16. DWR Table 8-1R. Stages of WSCP

Stage	Percent Supply Reduction	Water Supply Condition
1	0	Normal Condition
2	15	Water Alert
3	25	Water Warning
4	50	Water Emergency

13.7.2 Prohibitions on End Uses

The water use prohibitions for each stage are shown in Table 13-17.

Table 13-17. DWR Table 8-2R. Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	CII - Restaurants may only serve water upon request	All restaurants are requested not to serve water to their customers unless specifically requested by the customer.	No
1	Landscape - Limit landscape irrigation to specific times	Use of potable water for irrigating or watering turf, gardens, landscaped areas, trees, shrubs, or other plants utilizing individual sprinkler systems should only be done between the hours of 6:00 p.m. and 10:00 a.m. (agricultural accounts are excluded from the time of irrigation restrictions). Drip irrigation and hand watering with a handheld hose or faucet filled bucket are exempt from this recommendation.	No
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Sprinklers and irrigation systems should be adjusted to avoid overspray, runoff in excess of five (5) minutes, or other waste.	No
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Permitting potable water to escape from leaks within the customer's plumbing system. All water leaks from a customer's plumbing system shall be repaired in a timely manner.	Yes
1	Other - Prohibit use of potable water for washing hard surfaces	Use of potable water to clean sidewalks, walkways, driveways, parking areas, patios, porches, verandas, tennis courts, or other paved, concrete, or other hard surface areas, except where necessary for the benefit of public health or safety.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Other - Require automatic shut of hoses	Washing of automobiles, boats, trailers, aircraft, or other vehicles by hose without a shutoff nozzle and bucket, except to wash such vehicles at commercial or fleet vehicle washing facilities. Provided, however, such washings are exempt from these regulations when health, safety, and welfare of the public is contingent upon frequent vehicle cleaning, such as garbage trucks and vehicles used to transport food or perishables.	Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	Use of potable water to clean, fill, or maintain decorative fountains, lakes, or ponds, unless such water is recycled.	Yes
2	CII - Other CII restriction or prohibition	The use of potable water for compaction, dust control, and other types of construction shall be allowed only pursuant to a permit issued by the Department. Use of potable water for such purposes shall be limited to the conditions of the permit or may be prohibited as determined by the Director or his designee.	Yes
2	CII - Restaurants may only serve water upon request	No restaurant, hotel, café, cafeteria or other public place where food is sold, served, or offered for sale, shall serve drinking water to any customer unless expressly requested.	Yes
2	Landscape - Limit landscape irrigation to specific times	Golf course customers and commercial nursery customers shall curtail all non-essential water use and shall irrigate or water turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants only between the hours of 10:00 p.m. and 6:00 a.m., where possible. These customers shall reduce their potable water consumption by 15% of their prior year's consumption for the comparable billing period.	Yes
2	Landscape - Limit landscape irrigation to specific times	The use of potable water for irrigating or watering turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants utilizing individual sprinkler systems shall only be permitted between the hours of 6:00 p.m. and 8:00 a.m. Agricultural accounts are excluded from the time of irrigation restrictions. Drip irrigation and hand watering with a handheld hose with a positive shutoff nozzle or faucet filled bucket are exempt from these restrictions.	Yes
2	Landscape - Limit landscape irrigation to specific times	Outdoor irrigation and watering of turf, gardens, landscaped areas, trees, shrubs, or other plants utilizing individual sprinkler systems in parks, schools, publicly-owned property, and the public rights-of-way shall be permitted only between the hours of 10:00 p.m. and 6:00 a.m. These customers shall reduce their potable water consumption by 15% of their prior year's consumption for the comparable billing period.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	Other	The use of potable water for compaction, dust control, and other types of construction shall be allowed only pursuant to a permit issued by the Department. Use of potable water for such purposes shall be limited to the conditions of the permit or may be prohibited as determined by the Director or his designee.	Yes
2	Other - Require automatic shut of hoses	Washing of automobiles, boats, trailers, aircraft, and other types of mobile equipment shall be prohibited unless done with a hand-held bucket or hand-held hose equipped with a positive shutoff nozzle for quick rinses. This section does not apply to the washing of the above-listed vehicles or mobile equipment when conducted at a commercial car wash utilizing a recycling system. Provided, however, such washings are exempt from these regulations when the health, safety, and welfare of the public is contingent upon frequent vehicle cleaning, such as garbage trucks and vehicles used to transport food or perishables.	Yes
3	CII - Other CII restriction or prohibition	Water used for compaction, dust control, and other types of construction shall only be authorized by a permit issued by the Department and shall be limited to the conditions of the permit or may be prohibited as determined by the Director or his designee.	Yes
3	Landscape - Limit landscape irrigation to specific days	Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants by all golf course customers shall be permitted only on odd numbered days, between the hours of 11:00 p.m. and 6:00 a.m., unless the applicable irrigation system is equipped with an electronic moisture sensor control system and/or drip irrigation system. Golf course customers shall reduce their potable water consumption by 25% of their prior year's comparable billing period.	Yes
3	Landscape - Limit landscape irrigation to specific days	Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants by commercial nursery customers shall be permitted only on even numbered days between the hours of 11:00 p.m. and 6:00 a.m., and only with a hand-held hose equipped with a positive shutoff nozzle or with drip irrigation. Commercial nursery customers shall reduce their potable water consumption by 25% of the customer's prior year's consumption for the comparable billing period.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3	Landscape - Limit landscape irrigation to specific days	Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants at all publicly-owned property shall be permitted only on even numbered days, between the hours of 11:00 p.m. and 6:00 a.m., unless the applicable irrigation system is equipped with an electronic moisture sensor control system and/or drip irrigation system. Water consumption at all publicly-owned property shall be reduced by 25% of the customer's prior year's comparable billing period unless they are using reclaimed water.	Yes
3	Landscape - Limit landscape irrigation to specific days	Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants at schools shall be permitted only on odd numbered days, between the hours of 11:00 p.m. and 6:00 a.m., unless the applicable irrigation system is equipped with an electronic moisture sensor control system and/or drip irrigation system. Water consumption at all school property shall be reduced by 25% of the customer's prior year's comparable billing period.	Yes
3	Landscape - Limit landscape irrigation to specific days	Customers with addresses ending in an even number shall be permitted to irrigate or water on even numbered days only and customers with addresses ending in an odd number shall water on odd numbered days only. Such restrictions shall not apply to any customer whose property is equipped with an electronic moisture sensor control system and/or drip irrigation system. All watering shall be permitted only between the hours of 8:00 p.m. and 6:00 a.m.	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Washing of automobiles, boats, trailers, aircraft, and other types of mobile equipment is prohibited. Washing of the above-listed vehicles or mobile equipment shall only be allowed at a commercial car wash utilizing recycling systems. Provided, however, such washings are exempt from these regulations when health, safety, and welfare of the public is contingent upon frequent vehicle cleaning, such as garbage trucks and vehicles used to transport food or perishables.	Yes
3	Other water feature or swimming pool restriction	Swimming pools, ornamental pools, fountain and artificial lakes shall not be filled or refilled after being drained.	Yes
4	CII - Other CII restriction or prohibition	The issuance of new water service connections and meters shall be prohibited.	Yes
4	CII - Other CII restriction or prohibition	No potable water shall be used for construction purposes. All construction meters shall be locked off or removed.	Yes
4	Landscape - Limit landscape irrigation to specific days	Commercial nursery customers shall water only on designated irrigation days (based on property address number) between the hours of 11:00 p.m. and 6:00 a.m. and only with a hand-held hose equipped with a positive shutoff nozzle or with a drip irrigation system.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
4	Landscape - Prohibit certain types of landscape irrigation	Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants shall be prohibited for all other customers.	Yes
4	Other	Washing of vehicles or mobile equipment used for purposes such as garbage collection or transporting foods shall only be allowed when health, safety, and welfare of the public is contingent upon frequent vehicle cleaning, and shall be authorized only pursuant to a permit issued by the Department.	Yes
4	Other water feature or swimming pool restriction	The filling, refilling, or adding of water to uncovered swimming or wading pools and spas shall be prohibited at all times.	Yes
4	Water Features - Restrict water use for decorative water features, such as fountains	The operation of any ornamental fountain or similar structure shall be prohibited.	Yes

13.7.3 Penalties, Charges, Other Enforcement of Prohibitions

Violations – In addition to the remedy of criminal prosecution available to the City as described in Subsection 13.28.100, a violation of any water use restrictions of this chapter 13.28 currently in effect may result in the imposition of fines, water use restrictions, and/or termination of water service as set forth below:

1. First Violation – Notice of Non-compliance. A written warning, accompanied by a copy of this Ordinance, will be delivered by U.S. Mail and/or hung on customer's door. Any such notice of violation shall specify a reasonable period to achieve compliance, and shall be directed to the customer of record for the premises where the noncompliance was observed.

2. Second Violation – Warning. A written warning and notice of the future imposition of a fine to be collected on the customer's utility bill will be issued. Any such notice of violation shall require compliance within in three calendar days, and shall be directed to the customer of record for the premises where the noncompliance was observed. Delivery will be made by Certified U.S. Mail and/or by personal delivery with a declaration of delivery returned to the City Manager.

3. Third Violation (within one year). A citation will be issued and a fine of $100.00 will be imposed and collected on the customer's next regular utility bill.

4. Fourth Violation (within one year of the first violation). A citation will be issued, a fine of $200.00 will be imposed and collected on the customer's next regular utility bill, and a flow restricting device will be installed on the meter serving the customer's property for a minimum of ninety-six (96) hours. The restricted flow shall meet minimum County Health Department standards, if any have been established. If the ninety-six-hour period ends on a weekend or holiday, full service will be restored during the next business day.

5. Fifth Violation (within one year of the first violation). A citation will be issued, a fine of $500.00 will be imposed, and service will be terminated for such period as the City Manager determines to be appropriate under the circumstances. Prior to termination of service, the customer may submit an appeal pursuant to the procedures set forth in Section 13.28.120. Written notice of a hearing to consider any appeal shall be mailed to the customer at least ten calendar days before the hearing.

6. Any person subject to a fine pursuant to this Section 13.28.100 may file an appeal pursuant to Section 13.28.120.

13.7.4 Consumption Reduction Methods

Colton offers various rebates to encourage conservation (i.e. ultra-low flush toilet replacements, high efficiency washing machines, etc.). Colton has a water rate structure that promotes water efficiency. The reduction goal is to balance supply and demand.

Table 13-18. DWR Table 8-3R. Stages of WSCP - Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
3	Decrease Line Flushing	Prohibited use of potable water for sewer system maintenance or fire protection training without prior approval by the General Manager
1	Expand Public Information Campaign	

13.7.5 Determining Water Shortage Reductions

Under normal water supply conditions, production figures are recorded daily in Colton's computerized database. Total production and consumption by all categories of customers are reported monthly to City Water and Wastewater Department staff. During a Stage 1 or 2 water shortage, daily production figures will be reported to the Water and Wastewater Operations Manager, who will compare the weekly production to the target weekly production to verify that the reduction goal is being met. Weekly reports will be forwarded to the Director of Water and Wastewater. Monthly reports will be provided to the City Council, the Director of Water and Wastewater, and the Customer Accounts Department. The Customer Accounts Department will serve as the City's Water Shortage Response Team. If reduction goals are not met, the Water Shortage Response Team will examine individual customer usages and identify corrective actions to be taken. During a Stage 3 or 4 water shortage, the same procedures will apply, with the addition of a daily production report to the Director of Water and Wastewater. During a disaster shortage, production figures will be reported on an hourly basis to the Water and Wastewater Operations Manager, and daily to the Director of Water and Wastewater, the Water Shortage Response Team, and the City Council.

13.7.6 Revenue and Expenditure Impacts

Surplus revenues are placed in Colton's reserve, which is used to fund emergency repairs and capital improvements for the water system. The financial reserve is adequate to address the costs of multiple plant repairs. The City projects that water shortages will have a minimal impact on water sales, and it is

adequately funded to respond to emergencies. During a shortage, Colton anticipates increased staff costs, increased operation and maintenance costs, decreased water sales revenue, all of which will impact the reserve fund. Use of the existing reserve fund is the primary means to deal with revenue impacts due to shortage, but Colton will seek a rate adjustment in an extended shortage. If shortage is due to a natural disaster, Colton will seek funding assistance from the Federal Emergency Management Agency.

13.7.7 Resolution or Ordinance

Ordinances of the City Council of the City of Colton Prohibiting the Wasteful Use of Water and Setting Forth Regulations and Restrictions on Water Use are included in the City of Colton's most recent Water Conservation Rules and Regulations Ordinance Number 08-15, attached as Appendix G. Said ordinances include prohibitions on various wasteful water uses such as lawn watering during mid-day hours, washing sidewalks and driveways with potable water, and allowing plumbing leaks to go uncorrected more than 24 hours after customer notification.

13.7.8 Catastrophic Supply Interruption

In the event of a water shortage emergency resulting from equipment failure, power outage, or other catastrophe, Colton is prepared to purchase emergency water supplies from nearby agencies while repairs or other remedial actions are underway. Colton may also implement its four-stage plan for conservation, as described above, with either voluntary or mandatory reductions depending on the severity of the shortage. For severe disasters (Stage 4), mandatory water use reductions are specified.

13.7.9 Minimum Supply Next Three Years

The UWMP Act requires a retailer to quantify the minimum water supply available during the years 2016 to 2018, assuming years 2016 to 2018 repeat the driest three-year historic sequence for each water supply source. As shown in Table 13-19, total supplies, given a repeat of historically low conditions on all water supplies, would be approximately 12,608 AFY. Colton has adequate supplies available to meet projected demands should a multiple-dry year period occur during the next three years.

Table 13-19. DWR Table 8-4R. Minimum Supply Next Three Years (AF)

Available Water Supply	2016	2017	2018
Available Water Supply	12,608	12,608	12,608

13.8 Supply and Demand Assessment

Projected water use was estimated based on population growth rates derived for each jurisdiction served by Colton. The growth rates were applied to 2015 water demands to derive estimated future water demands shown in Table 8-24. Colton assumes no change in supply and a 10 percent increase in demands for Single and Multi-Dry year periods, shown in Table 13-21 and Table 13-22.

Table 13-20. DWR Table 7-2R. Normal Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	12,608	13,000	13,770	14,853	14,853
Demand Totals	10,458	11,301	11,978	12,698	13,462
Difference	2,150	1,699	1,792	2,155	1,391

Table 13-21. DWR Table 7-3R. Single Dry Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	12,608	13,000	13,770	14,853	14,853
Demand Totals	11,504	12,431	13,176	13,968	14,808
Difference	1,104	569	594	885	45

Table 13-22. DWR Table 7-4R. Multiple Dry Years Supply and Demand Comparison (AF)

Year	Totals	2020	2025	2030	2035	2040
First Year	Supply Totals	12,608	13,000	13,770	14,853	14,853
	Demand Totals	11,504	12,431	13,176	13,968	14,808
	Difference	1,104	569	594	885	45
Second Year	Supply Totals	12,608	13,000	13,770	14,853	14,853
	Demand Totals	11,504	12,431	13,176	13,968	14,808
	Difference	1,104	569	594	885	45
Third Year	Supply Totals	12,608	13,000	13,770	14,853	14,853
	Demand Totals	11,504	12,431	13,176	13,968	14,808
	Difference	1,104	569	594	885	45

14 City of Rialto

14.1 System Description

Three different entities provide water service to different portions of the City of Rialto: the City itself (through its water system operator {Veolia, through Rialto Water Services}), the West Valley Water District (WVWD), and the Fontana Union Water Company (FUWC). Each agency has its own water supply and resources, and must meet its demands through those resources. The City of Rialto municipal water system provides potable, non-potable, and recycled water at retail to customers primarily within the City of Rialto and serves approximately one-half of the population of the City, or approximately 54,000 customers as of December, 2015. The service area is essentially the incorporated area of the City of Rialto located between Interstate 10 and State Route 210.

The City's water supply sources consist of water from canyon surface flows on the east side of the San Gabriel Mountains, including the North Fork Lytle Creek, Middle Fork Lytle Creek and South Fork Lytle Creek which is treated at the Oliver P. Roemer Water Filtration Plant. The City also receives water through the Baseline Feeder from SBVMWD and from fourteen wells in the five ground water basins. All five of the ground water basins have been adjudicated and are managed. Relevant portions of these adjudications and judgments are provided in Appendix H, I, J, and K. In addition, recycled water is available from the City's Wastewater Treatment Plant.

The City of Rialto sits at the base of the San Bernardino Mountains in the interior valley known as the San Bernardino Valley and within the Santa Ana River Basin Watershed. The topography ranges from 1120 feet to a high of 1520 feet above sea level. The City's service area encompasses approximately 89 square miles within the central area of the City and provides service to approximately 54,453 customers as of December, 2015. Land use within the service area is principally composed of single and multi-family residences, a centralized business and commercial district, and some institutional and industrial areas.

The City distributes its water to its 11,956 service connections through a 162-mile network of distribution mains with pipelines sizes ranging from 2 to 48 inches. The water system consists of three pressure zones and three subzones that provide sufficient water pressure to customers. The water service area is shown in Figure 14-1.

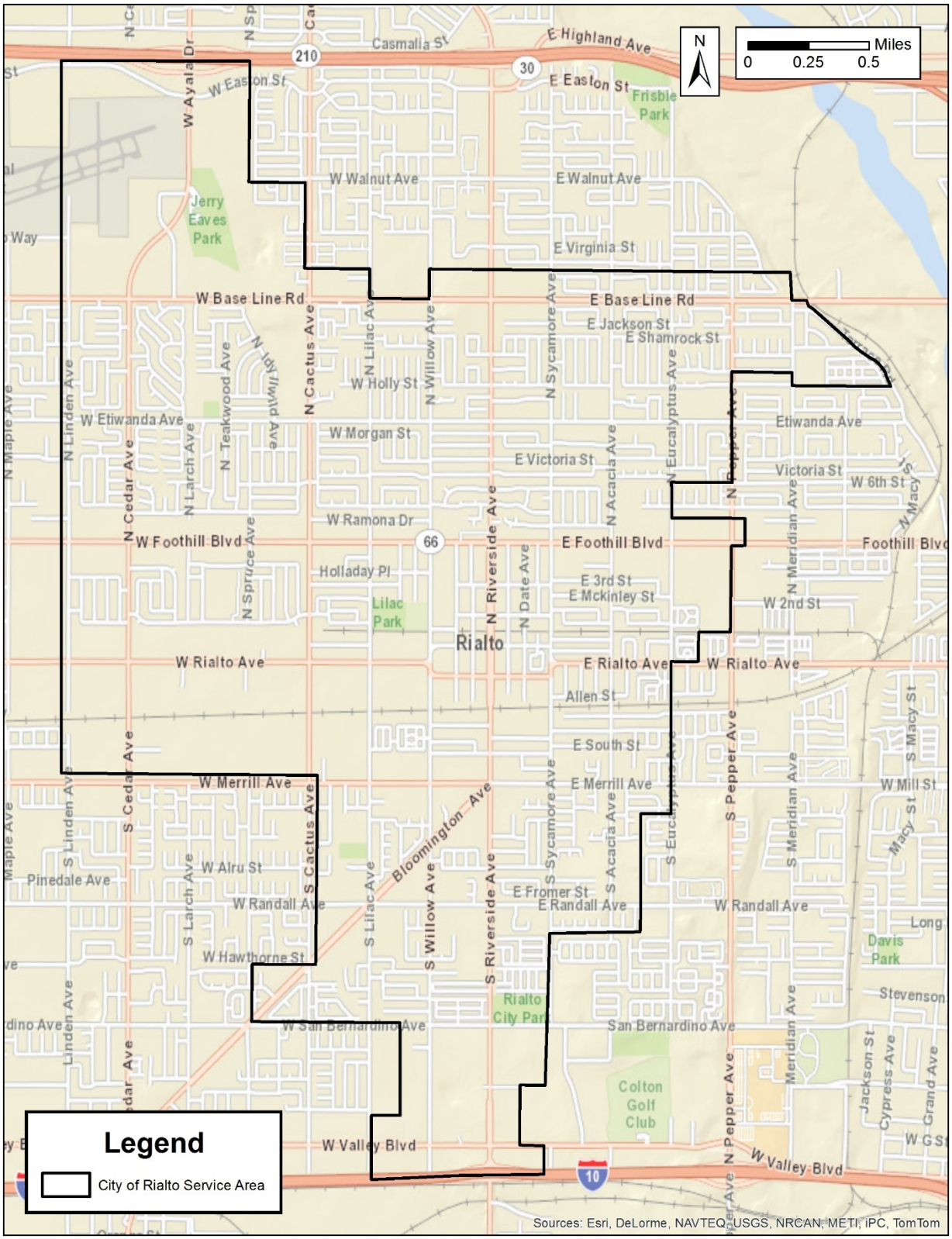


Figure 14-1. City of Rialto Service Area

14.1.1 Service Area Population and Demographics

For the 2015 UWMP cycle, the California Department of Water Resources (DWR) developed a GIS-based tool to estimate the population within a water agency's service area using census data. This tool was used to intersect Rialto's water service area with compiled census data to estimate historic populations for Rialto's water service area. The tool provided service area populations for 1990, 2000, and 2010 using census data. The tool also used the number of residential connections in 2010 and 2015 to estimate a 2015 service area population of 54,453.

For future populations, the Southern California Association of Governments (SCAG) has developed a forecast called the 2012 Adopted Growth Forecast. As part of the 2012 Adopted Growth Forecast, SCAG has estimated the population in 2020 and in 2035 inside each of approximately 4,000 traffic analysis zones (TAZ) that cover southern California. GIS software was used to intersect Rialto's service area with the SCAG projections to calculate an estimated annual growth rate of approximately 0.9 percent through 2020 and approximately 1.2 percent after 2020. These growth rates were applied to estimate population for years beyond 2015.

Table 14-1. DWR Table 3-1R. Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040
Population Served	54,453	56,988	60,401	64,018	67,852	71,916

14.1.2 Service Area Climate

Rialto's climate typically exhibits hot, dry summers and mild, wet winters. Climate change has the potential to impact water supplies and demands for Rialto. Water demands could increase if summer temperatures rise, or if there are more days with high temperatures. Most rainfall occurs during the months of November through April. The hottest and driest period of the year is from June through September. It is not unusual during the summer months to have several consecutive days that the daily temperature exceeds 100 degrees Fahrenheit.

Rialto participates in regional planning efforts that considered potential impacts of climate change. The 2015 Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP) included a discussion of climate change and its potential impacts on water demand. The IRWMP included a Climate Change Vulnerability Assessment. The Checklist is included in Appendix F of this document. Some areas identified in the vulnerability assessment include wildfires and potential erosion impacts on water quality, as well as floods and potential impact on water facilities.

Average temperature, precipitation, and evapotranspiration by month are shown in Table 14-2. Evapotranspiration (ET) is the water lost to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indicator of how much water crops, lawn, garden, and trees need for healthy growth and productivity. ET from a standardized grass surface is commonly denoted as ETo.

Table 14-2. Historical Climate Data

Month	Average Temperature (°F)[1]	Average Precipitation (in.)[1]	Average Standard ETo (in.)[2]
January	52.4	3.22	2.53
February	54.6	3.25	2.87
March	56.7	2.86	4.30
April	60.9	1.29	5.38
May	65.6	0.47	5.82
June	71.3	0.09	6.76
July	77.7	0.04	7.38
August	77.7	0.15	7.09
September	73.9	0.33	5.51
October	66.5	0.71	3.97
November	58.6	1.32	2.89
December	53.3	2.38	2.38
Total P / Avg. ETo		16.1	56.9

Notes:
[1]NOAA weather station 0407723 in San Bernardino; data from 1893 through 2004; http://wrcc.dri.edu
[2]ETo data for CIMIS weather station 44 at University of California, Riverside; http://wwwcimis.water.ca.gov/

14.2 System Water Use

14.2.1 Water Uses by Sector

Rialto is expected to experience moderate increases in water consumption due to population increases and implementation of water conservation efforts. Per capita consumption rates are expected to remain in compliance with the law (SB X7-7). Future water use projections must consider significant factors on water demand, such as development and/or redevelopment, and climate patterns, among other less significant factors which affect water demand. Although redevelopment is expected to be an ongoing process, it is not expected to significantly impact water use since the City's service area is near "built-out" condition. Rainfall or lack of rainfall will continue to extend a major influence on demand as drought conditions will increase demand at a time when water supplies are limited and may therefore result in water use restrictions in accordance with Rialto's Emergency Conservation Plan Ordinance.

Rialto categorizes customers as Single Family Residential, Commercial/Institutional, Landscape Irrigation, Hydrant, Wholesale, and Recycled Water users. For the purposes of this plan Single Family Residential includes multi-family connections as well. Water deliveries for each customer class for the years 2011 through 2015 are shown in Table 14-3.

Table 14-3. DWR Table 4-1R. Demands for Raw and Potable Water – Actual (AF)

Use Type	Level of Treatment When Delivered	2011	2012	2013	2014	2015
Single Family	Drinking Water	6,948	7,410	7,313	6,794	5,561
Commercial / Institutional	Drinking Water	1,988	2,553	2,046	2,149	1,771
Landscape	Drinking Water	466	542	510	469	303
Hydrant Meters	Drinking Water	62	-6	65	60	78
Nonrevenue	Drinking Water	2,535	1,803	419	728	1,058
	Total	11,999	12,302	10,353	10,200	8,771

The anticipated population growth rates were applied to 2015 water demands to derive estimated future water demands for 2020 through 2040 shown in Table 14-4. Per-capita consumption was expected to rebound from its 2015 value, which was impacted by mandatory drought restrictions, but remain below the 2020 compliance target. Rialto does not anticipate any routine or single large water sales to other agencies in the future. Rialto does not anticipate future water use related to saline barriers or groundwater recharge operations. For the purpose of projections, nonrevenue water is assumed to be 10 percent of sales. Rialto will continue efforts to decrease water loss and thereby reduce gallons per capita per day of water use.

Table 14-4. DWR Table 4-2R. Demands for Raw and Potable Water – Projected (AF)

Use Type	Level of Treatment	2020	2025	2030	2035	2040
Single Family	Drinking Water	6,924	7,338	7,778	8,244	8,737
Commercial / Institutional	Drinking Water	2,205	2,337	2,477	2,625	2,783
Landscape	Drinking Water	377	400	424	449	476
Hydrant Meters	Drinking Water	97	103	109	116	123
Nonrevenue	Drinking Water	960	1,018	1,079	1,143	1,212
	Total	10,563	11,196	11,866	12,577	13,330

Table 14-5. DWR Table 4-3R. Total Water Demands (AF)

Demand	2015	2020	2025	2030	2035	2040
Potable and Raw Water	8,771	10,563	11,196	11,866	12,577	13,330
Recycled Water Demand	24	20	20	20	20	20
Total Water Demand	8,795	10,583	11,216	11,886	12,597	13,350

14.2.2 Distribution System Water Losses

According to the AWWA Water Audit for the year 2015, the City of Rialto experienced losses that were equal to approximately 9.6 percent of total use. Water losses in the 10 percent range are typical of many water agencies. Rialto currently has a meter replacement program for leaking or broken meters and is in the process of calibrating all meters in the distribution system. These programs will increase the efficiency of the water distribution system by decreasing future water losses; however, water losses cannot be prevented entirely.

Table 14-6. DWR Table 4-4R. Water Loss Summary Most Recent 12 Month Period Available

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss
01/2015	842

14.2.3 Estimating Future Water Savings

Rialto is committed to long-range planning to provide a reliable, cost-effective water supply to its customers. Rialto actively monitors water consumption in its service area, and prepares required monthly reports for the State Water Resources Control Board.

Rialto has projected that future demands will increase at a percentage growth rate that incorporates two factors: the percentage growth in service area population, and potential changes in the per-capita consumption. This approach provides estimates for future system-wide demand that can be used for long-range planning.

In the 2015 UWMP, water suppliers have the option of preparing more detailed demand forecasts by estimating demand factors based on land use categories. For example, Rialto could identify typical water use per single family customer and per commercial account. These customer classes can be further sub-divided by lot size, neighborhood, or other variables. The intent is to quantify the estimated water use per customer in different customer classes, and then to forecast how future changes will impact water use within each customer class.

For this document, Rialto has elected not to develop land use-based demand factors and apply future savings from codes and standards. Recent drought regulations have induced significant changes in water consumption patterns, and there is considerable uncertainty as to how demands will change in the future if the drought subsides. Given this uncertainty, Rialto elected not to quantify passive savings for this UWMP.

14.2.4 Water Use for Lower Income Households

Senate Bill 1087 requires water use projections in an UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier. The City of Rialto adopted its General Plan Update in 2010. According to the updated housing element in the Rialto General Plan, it is estimated that about 44 percent of all Rialto households qualify as lower income. It should be noted that approximately half of the City of Rialto is within the City's water service area, while the other half is served by WVWD and Fontana Union Water Company. However, a detailed breakdown of the household income categories within the water service area was not available; therefore, the City-wide estimate of 44 percent was used. These lower-income water demands have been included in future demand projections.

Table 14-7. Estimated Demands for Lower-Income Households (AF)

Demand	2015	2020	2025	2030	2035	2040
Residential	2,450	3,051	3,234	3,427	3,632	3,850
Total	2,450	3,051	3,234	3,427	3,632	3,850

14.3 SB X7-7 Baselines and Targets

An urban retail water supplier must set a 2020 water use target (herein called the Compliance Water Use Target) and a 2015 interim target (herein called the Interim Water Use Target). Rialto is using method one to calculate the Compliance and Interim Water Use Targets as set forth by Water Code section 10608.20(b). The Method One calculation is done by taking 80 percent of the urban water supplier's baseline GPCD.

Finally, the selected Compliance Water Use Target must be compared against what DWR calls the "Maximum Allowable GPCD". The Maximum Allowable GPCD is based on 95 percent of a 5-year average base gross water use from 2003 to 2010. The Maximum Allowable GPCD is used to determine whether a supplier's 2015 and 2020 per capita water use targets meet the minimum water use reduction of the SBX7-7 legislation. Specifically, if an agency's Compliance Water Use Target is higher than the Maximum Allowable GPCD, the agency must instead use the Maximum Allowable GPCD as their target.

14.3.1 Updating Calculations from 2010 UWMP

For the 2015 UWMP cycle, DWR has made a GIS-based population tool available to calculate service area population using Census Bureau data. Rialto used this tool to re-calculate its service area population, baseline per-capita use, and compliance targets.

14.3.2 Baseline Periods

The years 1998 to 2007 have been selected for calculation of the 10-year base period, while years 2003 to 2007 have been selected for calculation of the 5-year base period. The 10-year average Base Daily Per Capita Water Use for Rialto is 214 GPCD; the 5-year is 217 GPCD.

14.3.3 Service Area Population

Rialto's service area population was calculated using the DWR population estimation tool. The tool directly calculated a service area population for 1990, 2000, and 2010. Populations for intermediate years were calculated by assuming a constant growth rate between census years.

14.3.4 Gross Water Use

The calculation of gross water use begins with the total amount of water that was put into the potable water distribution system by Rialto. Water that was exported to another agency was then subtracted, to leave the amount used by Rialto's retail customers.

Water delivered to agricultural customers was included in the urban water demand because those customers, although designated as agricultural customers, receive water from Rialto's potable system and use that water to meet both potable and irrigation demands.

For the period of 1998 to 2007, gross water use in the Rialto service area fluctuated between 11,891 and 15,465 acre-feet per year.

14.3.5 Baseline Daily per Capita Water Use

For the period from 1998 through 2007, the average base daily per capita water use is 213.8 GPCD.

14.3.6 2015 and 2020 Targets

In addition to calculating base gross water use, SBX7-7 requires the retail water supplier to identify its demand reduction targets. The methodologies for calculating demand reduction targets were described above. Rialto is choosing to meet SBX7-7 targets as an individual agency rather than as part of a regional alliance. Rialto has selected Method 1 to calculate its 2020 Compliance Water Use Target and Interim Water Use Target. The resulting Compliance Water Use Target is 171 GPCD and the Interim Water Use Target is 192 GPCD. The Maximum Allowable GPCD (95% of the 5 Year Baseline GPCD) is 199. The Compliance Water Use Target, under Method 1 (171 GPCD) is less than the Maximum Allowable GPCD, so no adjustments to the Compliance Water Use Target are necessary.

Table 14-8. DWR Table 5-1R. Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline GPCD	2015 Interim Target	Confirmed 2020 Target
10-year	1998	2007	214	192	171
5-year	2003	2007	217		

14.3.7 2015 Compliance Daily per Capita Water Use

The City of Rialto's GPCD decreased to 144 for 2015. The 2015 interim target GPCD is 192. Rialto meets the requirement and is on-track to meet the 2020 target GPCD of 171.

Table 14-9. DWR Table 5-2R. 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Extra-ordinary Events	Economic Adjustment	Weather Normal-ization	Total Adjustments	Adjusted 2015 GPCD	2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015?
144	192	0	0	0	0	144	144	YES

14.4 Demand Management Measures

14.4.1 Demand Management Measures

In September 2009 the City of Rialto joined the California Urban Water Conservation Council and has implemented a number of the DMMs defined in the act. Rialto has not developed a Best Management Practice Report to accompany this Plan. The following Section identifies the water demand management measures currently implemented or scheduled for implementation by Rialto. Water in the City of Rialto is provided by the City, SBVMWD and WVWD. Water conservation programs and incentives offered by the City will also benefit SBVMWD and WVWD. In order to effectively implement water conservation programs, Rialto would need to collect data for the user within the Rialto Water Service area only. Rialto recognizes that these measures are important for the reliability of its water sources and has made a continued effort to comply with the DMMs required by the act.

14.4.1.1 Water waste prevention ordinances

The City Ordinance Number 1560 Chapter 12.20: Water Conservation Requirements included in Appendix G outlines efficient water use measures and four stages of increasingly restrictive prohibition with related penalties for non-compliance. The goal of this ordinance is to outline restrictions put in place to help the City of Rialto reduce potable water consumption by 26 percent compared to 2013.

14.4.1.2 Metering

All existing and new water services are metered throughout the Rialto water service area. A water meter calibration and replacement program is in place to continually improve accurate meter readouts. New services, with the exception of single-family residences and apartment complexes up to and including four units per meter, are required to install a separate water meter for the on-site landscaping. Rebate incentives are offered to Mobile Home Parks for installation of sub-meters.

14.4.1.3 Conservation pricing

The conservation tiered rate structure use by Rialto, where efficient water use is billed at a low price and higher water use billed at progressively higher prices provides the economic incentives to customers to use water efficiently. Rialto recently conducted a study of a water conservation tiered rate structure for implementation wherein each customer is given a water budget and if that budget is exceeded, the customer must pay a penalty, or a higher water rate, for that portion of water that exceeds the water budget. The study, conducted in March, 2012, projected water and wastewater rates through 2017 based on water and wastewater system expenses, revenues, rates, and financial plans. Rialto is currently a recipient of a Proposition 84 Grant through SAWPA for investigation and possible implementation of an efficiency-base water rate structure that will calculate indoor and outdoor water allocation for each household with volume charge tiers associated with an efficiency-based water rate. First tier is the indoor water use budget. Second tier the indoor plus outdoor water use. Third tier water use exceeding the indoor and outdoor allocation, this being the most expensive.

14.4.1.4 Public education and outreach

At a regional level, SBVMWD coordinates a regional water conservation outreach campaign in which Rialto is a participant. The regional effort includes branding a regional water conservation effort through iEfficient using advertisements on billboards, local newspaper, radio stations, public service announcements, theaters, buses, mobile applications, websites, social media and at local events.

At the local level, Rialto provides outreach communication and information regarding conservation efforts, rebates and incentives to its customers through water bill inserts, direct mailers, newsletters, door hangers, direct phone calls, emails, websites, social media, business partnerships, tri-annual Rialto Progress Magazine, community forums, educational programs, and information booths at fairs, public events, and water walk events. On an annual basis, Rialto Water Services/Veolia Water, the City of Rialto's water operator, holds an open house event that invites local school children and parents to participate in an all-day event promoting water conservation and educating the public in general on water issues. The customer's monthly bill includes a consumption usage chart that compares to prior years in an easy to understand format, informing customers of progress towards conservation targets.

14.4.1.5 Programs to assess and manage distribution system real loss

Rialto has an active Visible Leak Detection Program to decrease leak response times and minimize water loss throughout the water distribution system. Leaks are repaired within two days of discovery. Three field meter reader and two production operator employees staff the program five days per week. Meter

readers are required to inspect elements in the water distribution system as they travel respective routes throughout the city. This includes meter boxes, fire hydrants, air-vacuum units, above ground piping and appurtenances. They also look for signs of leaks in soil and paved areas in the routes. Two production operators also check wells, tanks, booster pumps and appurtenant equipment for leaks each day of the business week. The leak detection activity is conducted as part of routine duties assigned and imbedded in the operations routine activities.

14.4.1.6 Water conservation program coordination and staffing support

The Water Conservation Program, an active program to encourage efficient use of Rialto's Water Resources is a coordinated effort throughout Rialto's services area. One full time staff coordinates conservation programs, including outreach, and education programs. Another full time associate dedicates more than half their time on rebates and incentive programs. Other associates also contribute resources providing customer services assistance to administer collections of water waste reports and enforcement of non-compliance by water customers to the current water conservation stage. Other staff coordinates with new development, conditions and enforce the use of water efficient measures. The program sponsors landscaping classes for the community taught by professionals to promote more drought tolerant landscaping. The program is administered and funded through the operations of the Water Services.

14.4.1.7 Other demand management measures

Rebates, incentives and giveaways are offered to all water customers promoting efficient use of Rialto's Water Resources. Current rebates offered to all customers include installation of high efficiency toilets, high efficiency washing machines, weather based smart irrigation timers, automatic shut off nozzle and turf replacement. The Commercial, Industrial and Institutional customers also receive additional special incentives depending on the individual circumstances. For example, incentives are offered to car wash establishments to retrofit with recycle water treatment in the operations; or incentives are offered to mobile home parks for sub-metering projects. Rebates and incentives are continually changing to meet the needs of the program.

14.4.2 Planned Implementation to Achieve Water Use Targets

Rialto's current per-capita consumption is less than its 2020 compliance target. Rialto expects to continue to implement current conservation programs to encourage conservation and maintain per-capita consumption below the compliance target.

14.5 System Supplies

The City of Rialto municipal water system generally obtains supplies from the following different types of sources:

1) Water delivered by SBVMWD through the Baseline Feeder: In 1991, the City contracted with SBVMWD for SWP water in lieu of water produced in the Bunker Hill Basin. The water is delivered through a 48-inch transmission main. The agreement, referred to as the Baseline Feeder adds approximately 2,500 acre feet (AF) per year of supplemental water to the City's existing supplies.
2) Groundwater from five different adjudicated groundwater basins; relevant portions of these adjudications and judgments are provided in the Appendices. The City's primary source of water is from the City owned groundwater wells within five different groundwater basins in the upper Santa Ana River Basin. The five basins are the Rialto Basin, Lytle Creek Basin, Chino Basin, North Riverside Basin and the Bunker Hill Basin. There are a total of fourteen City wells, of which five are operational.

3) Surface water from canyon surface flows on the east side of the San Gabriel Mountains, including the North Fork Lytle Creek, Middle Fork Lytle Creek and South Fork Lytle Creek which is treated at the Oliver P. Roemer Water Filtration Plant. The WFF is owned and operated by the WVWD, and the City of Rialto has a 25% share in the Facility.
4) Emergency stand-by agreements with the City of San Bernardino and Riverside-Highland Water Company.
5) Recycled water is available from the City's Wastewater Treatment Plant.

All three main sources of water are under stress due to the current drought conditions in the Southern California region. In addition, there is perchlorate contamination in a number of the City wells. The total impact of these issues on the groundwater is a reduction of total pumping capabilities. Currently a total of five of the City's fourteen (14) wells are operational. The City is pursuing a remediation plan for the clean-up of perchlorates in the groundwater through legal actions against past entities to obtain reimbursement for the City's cost in the cleanup of perchlorates in the groundwater.

14.5.1 Purchased or Imported Water

In 1991 the City contracted for SWP water from SBVMWD, for an additional water supply source. This agreement adds approximately 2,500 acre-feet (AF) per year of supplemental water to the City's existing supplies. At the same time the City entered into a joint venture agreement with Valley District, WVWD and the Riverside Highland Water District to construct the Baseline Feeder. The Baseline feeder is a 48-inch transmission main with a capacity of 60 mgd designed to transport water from the Bunker Hill basin west to the Rialto area in lieu of SPW for which Rialto had contracted. The City has a contract with Valley District for delivery of 2,500 AFY to be provided by Valley District for 20 years with two 10-year options to renew. The City owns 33 percent of the pipeline from Meridian Avenue and Baseline Road to Cactus Avenue and Baseline Road. In 1991 the City and WVWD entered into an agreement with SBVMWD to participate in the financing of reaches one and two of the pipeline. The City and WVWD were then obligated to purchase 2,500 AFY and 5,000 AFY respectively, at an approximate cost of $130 to 140 per acre foot for 20 years. The City has been taking more than the 2,500 AFY due to the transfer by WVWD of a portion of its share to the City. If WVWD is in need of additional water, the Rialto supply will be reduced to their allotted supply.

In addition to the SBVMWD supply through the Baseline Feeder, City Well #4A pumps from the Bunker Hill Groundwater Basin into the Baseline Feeder. The City then takes the water produced from Well #4A or a portion thereof from the Baseline Feeder when needed. The production of Well #4A is reflected in the water supplied through the Baseline Feeder from Valley District.

In 1991, the City entered into an agreement with WVWD to jointly construct and own a 1.0-million-gallon reservoir and booster station to boost water from the wells in the 9th Street and Lytle Creek Wash areas into the Baseline Feeder. The City has one-third ownership in the reservoir and booster station. The reservoir acts as a stilling well to remove entrapped air from the well discharges.

The City is also able to take delivery through the Baseline Feeder of water from the City of San Bernardino (SBMWD). This water is provided by SBMWD, up to 3,000 gpm, from the Newmark Groundwater Contamination Superfund Site. This water is considered surplus water by SBMWD, and it may be suspended when SBMWD needs the water to meet its own demands.

14.5.2 Groundwater

Groundwater currently supplies the majority of Rialto's total supply, and the City will continue to rely on groundwater as its preferred source of supply, augmented with surface supplies and Valley District supplies. Moreover, since the City will continue to have access to imported water, the City's decision will also add to its supply reliability over the next 25 years. The City will also continue to benefit indirectly from regional conservation efforts and also through efforts to augment its supplies and improve its emergency storage capabilities.

Rialto has facilities to extract water from five groundwater basins.

14.5.2.1 SBBA (Bunker Hill and Lytle)

The City currently has two wells in the Bunker Hill Basin, City Well #4A and #6, and also purchases Bunker Hill groundwater produced by SBVMWD and delivered through the Baseline Feeder. There are no restrictions on Rialto's extractions from the Bunker Hill Basin except within the area of the Lytle Creek Region and the City of San Bernardino's groundwater management zone, which restricts new or additional pumping. Restrictions on the City of Rialto's pumping rights from the Bunker Hill Basin are that all the water is to be used within the boundaries of the SBVMWD.

The City owns groundwater extraction rights in the Lytle Creek groundwater basin. The basin was adjudicated under the 1924 Judgment No. 17030 from the Superior Court of San Bernardino County and is based on the City's stock ownership in the Citizens Land and Water Company, the Lytle Creek Water and Improvement Company, and the companies that the City acquired which were named in the 1924 Judgment (Rialto Domestic Water, Rancheria Water Company and Mutual Water Company). The 1924 Judgment restricts the place of users and rate of extraction for the right to export out of the Lytle Creek Region. The Lytle Creek Region is comprised of the entire Lytle Creek Basin and some portions of the Bunker Hill Basin.

The Lytle Creek Groundwater Basin is highly porous and easily replenished during heavy precipitation years. Recharge for the basin is from storm runoff in the Lytle Creek watershed and from percolation of SWP Water by the SBVMWD. The depth of groundwater in the basin varies from 50 feet to 400 feet depending on whether the area is in a drought or wet cycle. Well production varies in the basin as the basin levels change from year to year. The City's long term water supply from the basin varies from 1,700 to 5,000 acre-feet per year. There is no known contamination within the basin and no contamination is expected in the future.

14.5.2.2 Rialto-Colton

The City of Rialto has groundwater extraction rights in the Rialto-Colton Basin. The basin was adjudicated under the 1961 Decree No. 81,264 of the Superior Court of San Bernardino County, and is managed by the Rialto Basin Management Association (stipulated parties of the judgment). When the basin's three index wells (WVWD Well No. 11 and 13, and Rialto's Well 4) average mean groundwater level elevations is above 1002.3 feet when measured during March, April or May, the City has no restrictions on yearly extractions. The City has no restrictions on the rate of pumping per minute or day. When the average standing water levels in the three index wells falls below 1002.3 feet msl and is above 969.7 feet msl, the City is restricted to total groundwater extractions of 4,366 AFY. This extraction right is based on the City's listed rights in the decree, ownership of wells listed in the decree, stock ownership in the Citizens Land

and Water Company and stock ownership in the Lytle Creek Water and Improvement Company. The extraction rights listed in the 1961 decree total 15,290 AFY.

When the average of the three index wells drops below 969.7 feet msl, ground water extractions are reduced for all parties stipulated in the decree by 1 percent per foot below the 969.7-foot level, but not to exceed 50-percent reduction. For 2015, the groundwater levels in the index wells led to a 30-percent reduction in allowable production.

Several other entities withdraw water from the Rialto Basin. The Fontana Union Water Company has one well located within the basin, but was omitted from the adjudication decree. This well has a history of producing an average of 950 to 1050 AFY. In recent years this well has produced over 3,000 AFY. There are other overlying riparian rights owners that pump from the basin. These overlying riparian rights owners are expected to extract up to 800 AFY. Extractions from the Rialto Basin have been limited in recent years due to groundwater contamination plumes of volatile organic compounds (VOC) from the Mid Valley Landfill and perchlorate from abandoned rocket fuel plants in the northern parts of the City. A groundwater treatment program is in place to extract and remove VOC's.

The City has entered into an agreement with the County of San Bernardino to lease 1,600 AFY of its water rights during drought conditions in order to allow the San Gabriel Valley Water Company to extract and remove VOC's from the contaminant plumes. A separate agreement provides Rialto with funding to drill a new well to make up for the lost supply. The agreement is in effect until the year 2020. The long term drought water supply for the City from the Rialto Basin is expected to be approximately 2,700 AFY (4,600 AFY minus 1,600 AFY for SGVWC) when the index wells for the basin are between 1002.3 feet and 969.7 feet msl. When the index wells drop below 969.7 feet msl, the City pumping rights could be restricted to as little as 583 AFY (4,366 x 50% minus 1,600).

Valley District has stored up to 43,000 acre feet of SWP Water in the Rialto Basin over the last 25 years. The City's agreement with SBVMWD allows the City to purchase SBVMWD stored water by additional pumping from the Rialto Basin. This pumping does not count against the City's 1961 decree extraction rights.

14.5.2.3 Chino Basin

The Chino Basin consists of approximately 235 square miles of the upper Santa Ana River Watershed. The Chino Basin is an alluvial valley that is basically flat in the east-west direction and slopes north to south at an approximate grade of one to two percent. Elevations in the valley range from 2000 feet to 500 feet above sea level at Padre Dam. The Chino Basin is one of the largest groundwater basins in Southern California with about 5,000,000 acre-feet of water and an unused storage capacity of 1,000,000 acre-feet.

The Chino groundwater basin was adjudicated in 1978 by Judgment entered in the lawsuit captioned Chino Basin Municipal Water District v. City of Chino, San Bernardino County Superior Court Case No. 164327, designated as Case No. RCV 51010, which was updated in 2000 by the "Peace Agreement", and is managed by the court appointed Chino Basin Watermaster. The Judgment declares that the safe yield of the Chino Basin is 140,000 acre-feet. The adjudicated boundary on the east portion of the basin does not follow the exact geologic boundary. The City of Rialto does not have groundwater extraction rights under the 1978 Judgment.

The City has one well that is located within "No Man's Land", which is the area within the hydro-geologic Chino Basin but outside of the adjudicated Chino Basin boundary. The City does not have judicially

imposed limitations on extractions for this well. The City's long term water supply from "No Man's Land" (Chino Basin) is estimated to be between 2,000 and 3,000 AFY. The groundwater basin has nitrate contamination and normally the wells in this area must be sealed to a minimum depth of 350 feet below ground surface to prevent nitrate inflow above the maximum contaminant level of 45 mg/l for nitrates.

14.5.2.4 Riverside North

The City has one well, Chino 2, that produces from the Riverside North Basin. This basin was discussed further in Chapter 2.

Rialto's historical production for the past five years is shown in Table 14-10.

Table 14-10. DWR Table 6-1R. Groundwater Volume Pumped (AF)

Groundwater Type	Location or Basin Name	Water Quality	2011	2012	2013	2014	2015
Alluvial Basin	Rialto-Colton	Drinking Water	2,206	2,771	2,129	1,456	1,498
Alluvial Basin	Riverside North	Drinking Water	803	976	555	567	1,238
Alluvial Basin	Lytle Creek	Drinking Water	1,336	866	1,463	2,344	1,757
Alluvial Basin	Bunker Hill	Drinking Water	870	932	1,549	937	971
	Total		5,216	5,546	5,696	5,304	5,464

14.5.3 Surface Water

The City of Rialto has a total of 115.63 miner's inches (1.0 miners inch =9.0 gpm) or 1,040.67 gallons per minute of surface water diversion rights in Lytle Creek. The surface water diversion rights for Lytle Creek were determined in the 1897 McKinley Decree entered in Los Angeles Superior Court Case No. 20,790. The City of Rialto owns 21.98% of the shares of the Lytle Creek Water & Improvement Company. The Lytle Creek Water & Improvement Company realized a total of 329.39 miner's inches from the decree. The City obtained 72.4 miners inches from its stock shares in the Lytle Creek Water & Improvement Company. The City also obtained an additional 43.23 Miners inches of Lytle Creek surface water diversion rights when the City purchased the Rialto Domestic Water Company.

The City utilizes all of its surface water diversion rights in Lytle Creek through its ownership of 1.5 mgd of capacity in the Oliver Roemer Water Filtration Facility that WVWD owns and operates. The surface water from Lytle Creek is diverted by Southern California Edison at the mouth of Lytle Creek Canyon to generate electrical power at its Fontana Power Plant located on the east side of Riverside Avenue at the intersection of Linden Avenue. WVWD bills the City for its portion of the WFF operation and maintenance costs.

When the flows at the mouth of Lytle Creek Canyon drop below 7,182 gpm (798 miners inches), all diversion rights holders must reduce their diversions to a prorated schedule set in the 1897 decree. If the City is not receiving its full Lytle Creek surface water allotment, they are permitted to make up the difference by additional pumping in the Lytle Creek Region.

14.5.4 Stormwater

The City of Rialto continues to comply with all provisions of the National Pollutant Discharge and Elimination System (NPDES) permit, and support regional efforts by SARWQCB to improve and protect water quality. Estimated increases in pollutant loads and flows resulting from projected future development projects utilizing available methods prior to making land use decisions on such projects. In

addition, Rialto requires applicants for new development and redevelopment projects to demonstrate accomplishment of the following NPDES objectives:

- Use of structural and non-structural Best Management Practices (BMPs) to mitigate projected increases in pollutant loads and flows.
- Minimize pollutant loading flow velocity during and after construction.
- Minimize amounts of impervious surfaces and directly connected impervious surfaces.
- Maximize on-site infiltration and runoff, and temporary on-site retention areas.
- Limit disturbance of natural water bodies and natural drainage systems.
- Employ pollution prevention methods, source controls, and treatment using small collection strategies located at, or as close as possible to, the source.

14.5.5 Wastewater and Recycled Water

The Rialto Water Services through its operator, Veolia Waters, maintains and operates the City of Rialto wastewater collection system and treatment plant. All of the wastewater flows from the City is collected by the City's local sewer mains and delivered to the Rialto Wastewater Treatment Plant. Currently the Rialto Wastewater Treatment Plant also collects, treats, and disposes of the wastewater from the WVWD service area and some areas of the City of Fontana through an Extra-Territorial Agreement.

14.5.5.1 Recycled Water Coordination

The treatment applied includes primary, secondary and tertiary treatment for the production of recycled water (reclaimed water). The City maintains a recycled water network using effluent from its wastewater treatment plant. Currently the City's WWTP is permitted for 11.7 mgd of treatment capacity. The current recycled water use is approximately 0.3 mgd. The Title 22 effluent is used for freeway landscape irrigation, with future expansion for park irrigation planned.

14.5.5.2 Wastewater Collection, Treatment, and Disposal

The Rialto Wastewater Treatment Plant is a Grade V plant with tertiary treatment that discharges its treated wastewater to serve landscape irrigation purposes (approximately 20 AFY) and to the Santa Ana River. Rialto treats an average of 7 MGD.

Table 14-11. DWR Table 6-2R. Wastewater Collected within Service Area in 2015

Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2015 (AF)	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
City of Rialto	Metered	3,236	City of Rialto	Rialto Wastewater Treatment Plant	Yes	Yes
	Total Wastewater Collected from Service Area in 2015	3,236				

Table 14-12. DWR Table 6-3R. Wastewater Treatment and Discharge within Service Area in 2015

Waste-water Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Waste-water Discharge ID Number	Method of Disposal	Does this Plant Treat Waste-water Generated Outside the Service Area?	Treat-ment Level	Waste-water Treated Volume 2015 (AF)	Discharged Treated Waste-water Volume 2015 (AF)	Recycled Within Service Area Volume 2015
Rialto Wastewater Treatment Plant	Rialto Drain	Santa Ana River		River or creek	Yes	Tertiary	7,954	7,930	24
						Total	7,954	7,930	24

14.5.5.3 Recycled Water System

In 2015, Rialto used 24 AFY for landscape irrigation along freeway right-of-way and anticipates a future demand of 20 AFY. Rialto currently discharges the rest of the reclaimed water produced into the Santa Ana River.

14.5.5.4 Recycled Water Beneficial Uses

As a result of using recycled waste water since 2002, the City has identified potential recycled water users. If the City were to expand its use of recycled wastewater, the City could benefit as a number of parks, schools, and street medians could use recycled water.

Table 14-13. DWR Table 6-4R. Current and Projected Recycled Water Direct Beneficial Uses within Service Area (AF)

Name of Agency Producing (Treating) the Recycled Water:	City of Rialto							
Name of Agency Operating the Recycled Water Distribution System:	City of Rialto							
Supplemental Water Added in 2015	0							
Source of 2015 Supplemental Water	NA							
Beneficial Use Type	**General Description of 2015 Uses**	**Level of Treatment**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Landscape Irrigation (exc. Golf Courses)		Tertiary	24	20	20	20	20	20
		Total	24	20	20	20	20	20

Table 14-14. DWR Table 6-5R. 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

Beneficial Use Type	2010 Projection for 2015	2015 Actual Use
Landscape Irrigation	0	24
Total	0	24

14.5.5.5 Actions to Encourage and Optimize Future Recycled Water Use

The projected use of recycled wastewater within the City's service area for the next 25 years is uncertain as funding for infrastructural improvements are needed to distribute recycled water from the WWTP to the City. The projection of 20 AFY through 2040 is a conservative amount since there are multiple opportunities for Rialto to utilize more recycled water in their service area. The City of Rialto anticipates moving forward with more recycled water projects in the future to offset the use of potable water for irrigation.

In 2015, Rialto submitted to the SWRCB a Petition for Change to allow Rialto use of its recycled water in its service area. Allowing the change of use for recycled water will reduce the demand for both imported water and the need to use potable water for landscaping and certain industrial facilities.

14.5.6 Desalinated Water Opportunities

Seawater desalination is a process whereby seawater is treated to remove salts and other contents to develop both potable and non-potable supplies. There are over 10,000 desalination facilities worldwide that produce over 13 million AFY. Desalinated water can add to Southern California's supply reliability by diversifying its water supply sources and mitigating against possible supply reductions due to conservation. The inland areas of Southern California do not have the brackish water conditions that would make desalination a viable process for water supply.

14.5.7 Exchanges or Transfers

The City has emergency stand-by agreements with the City of San Bernardino and Riverside-Highland Water Company to meet needs during periods of lowered groundwater levels on a short term basis. The City believes that through pro-active water conservation policies and programs, the reliability of its water supply will sustain even as housing densities increase. Water conservation and recycled water are considered additional sources of water as they free up water that would otherwise be used inefficiently.

In addition to imported water and groundwater, the City's water supply system also includes mutual aid agreements with the City of San Bernardino, Fontana Water, RHWC, and WVWD.

14.5.8 Future Water Projects

The City continually reviews practices that will provide its customers with adequate and reliable supplies. Rialto will continue to upgrade its distribution system and add supply as needed over the next 25 years. No expected future water supply projects or programs will provide a quantifiable increase to the agency's water supply.

14.5.9 Summary of Existing and Planned Sources of Water

The following tables summarize the anticipated supplies for Rialto.

Table 14-15. DWR Table 6-8R. Water Supplies – Actual (AF)

Water Supply	Additional Detail on Water Supply	2015 Actual Volume	2015 Water Quality
Groundwater	Rialto-Colton	1,498	Drinking Water
Groundwater	Riverside North	1,238	Drinking Water
Groundwater	Lytle Creek (part of SBBA)	1,757	Drinking Water
Purchased or Imported Water	SBVMWD	1,989	Drinking Water
Surface Water	Lytle Creek Surface Water	998	Drinking Water
Groundwater	Bunker Hill (part of SBBA)	971	Drinking Water
Purchased or Imported Water	SBMWD	320	Drinking Water
Recycled water	Rialto WWTP	24	Recycled Water
	Total	8,795	

Table 14-16. DWR Table 6-9R. Water Supplies – Projected (AF)

Water Supply	Additional Detail on Water Supply	2020	2025	2030	2035	2040
Groundwater	Rialto-Colton	1,456	1,456	1,456	1,456	1,456
Groundwater	Riverside North	1,000	1,000	1,000	1,000	1,000
Groundwater	Lytle Creek (part of SBBA)	2,500	2,500	2,500	2,500	2,500
Purchased or Imported Water	SBVMWD	2,500	2,500	2,500	2,500	2,500
Surface Water	Lytle Creek Surface Water	1,120	1,120	1,120	1,120	1,120
Groundwater	Bunker Hill (part of SBBA)	2,000	2,000	2,000	2,000	2,000
Groundwater	No Man's Land	1,000	1,000	1,000	1,000	1,000
Purchased or Imported Water	SBMWD	0	500	1,000	1,500	2,000
Recycled water	Rialto WWTP	20	20	20	20	20
	Total	11,596	12,096	12,596	13,096	13,596

14.6 Water Supply Reliability Assessment

This chapter includes an assessment of how reliable Rialto's water supplies might be during a dry period. This discussion focuses on the long-term (one to many years) reliability in response to below-normal precipitation. Rialto maintains a number of interconnections with neighboring agencies that could be used to provide supplemental water during a short-term reduction in supply through existing mutual aid agreements with the City of San Bernardino, Fontana Water, Riverside-Highland and West Valley Water District.

14.6.1 Constraints on Water Sources

As mentioned earlier the City of Rialto is located in a semi-arid environment. The local groundwater and surface water supplies are influenced by annual precipitation. In extended drought conditions, the surface water supplies in the Lytle Creek region can be severely impacted. In addition, groundwater levels in the Lytle Creek Basin have been known to drop over 300 feet during extended drought periods.

Climate data in California has been recorded since 1858. Since then California has experienced three periods of severe drought: 1928-1934, 1976-1977 and 1987-1989. The year 1977 is considered to be the driest year of record for the Four Rivers Basin by DWR. These rivers feed the Delta and are the source of water for SWP water. Southern California sustained few adverse impacts from the 1976-1977 drought, however the 1987-1991 drought created considerable concern for Southern California. As a result, the City is vulnerable to water shortages due to seasonal hot weather and climatic influences.

Plumes of various chemical pollutants have been detected in local groundwater basins requiring the installation of well head treatment systems or blending. Rialto's Perchlorate Contamination Zero Tolerance Policy resulted in taking wells out of service which tested positive for detectible levels of perchlorate. Clean up efforts through agreement with San Bernardino County and Emhart, responsible parties for the contamination, in coordination with the EPA will provide remedy of the groundwater treatment within the Rialto-Colton Basin. These water quality issues are further discussed at a regional level in Chapter 2.

14.6.2 Reliability by Type of Year

Drought planning is to consider water supplies during single-dry and multiple-dry years. Single dry and multiple-dry year conditions are usually based on historical records of annual runoff from a particular watershed. A multiple-dry year period is generally three or more consecutive years with the lowest average annual runoff. Single dry year and multiple-dry periods should be determined for each watershed from which the water agency receives a water supply. The City of Rialto has multiple water supply sources, surface supply, groundwater and imported.

Historically overall water use tends to increase during "dry" years where annual precipitation is low, but with conservation efforts currently and over the past five years there has been a decline in water use during the past three "dry" years. The City of Rialto has determined that water demands would not increase during single or multiple dry years.

14.6.3 Regional Supply Reliability

Although increases in demand are expected, they are limited due to the requirements of SB X7-7 which provides a cap on water consumption rates (i.e. per capita water use). It can be reasonably expected that the majority of agencies will be at or near their compliance targets by 2020 and thereafter as conservation measures are more effectively enforced.

14.7 Water Shortage Contingency Planning

Water supplies may be interrupted or reduced significantly in a number of ways including drought and earthquake, which may damage water delivery or storage facilities. The ability to manage water supplies in times of drought or other emergencies is an important part of the resource management in a community. To offset the prolonged effects of a drought period or other emergency, the City Council adopted Ordinance No. 1130 in December, 1990. The ordinance provides water conservation measures in order to minimize the effect of a water shortage. The City implemented Stage 2 of the ordinance in 2002 due to a water shortage caused by contamination of the groundwater by the chemical perchlorate.

The ordinance was amended on July 28, 2015, with Ordinance Number 1560, attached in Appendix G in response to Governor Brown's Water Order and Rialto implemented Stage 3B - Water Warning. The City Ordinance Number 1560, Chapter 12.20: Water Conservation Requirements, outlines efficient water use

measures and four stages of increasingly restrictive prohibition with related penalties for non-compliance. The ordinance includes provisions that will significantly reduce the waste and inefficient use of water, thereby extending the available water resources required for the domestic and fire protection needs of the City and the general public.

14.7.1 Stages of Action

14.7.1.1 Stage 1 – Normal Conditions

Normal conditions mean normal supply and distribution capacity is available.

14.7.1.2 Stage 2 – Water Alert

Stage 2 means that the city may not be able to meet all water demands of all water customers, or the state of California has adopted regulations requiring the city to implement requirements and actions of a Stage 2 Water Alert as outlined in Section 12.20.022 of Ordinance Number 1560, regardless of the city's local water supply. All customers are required to reduce potable water consumption by a minimum twenty percent compared to their potable water consumption in the 2013 base year.

14.7.1.3 Stage 3 – Water Warning

Stage 3 means that the city is not able to meet all water demands of all water customers, or the state of California has adopted regulations requiring the city to implement requirements and actions of a Stage 3 water warning as outlined in Section 12.20.023 of Ordinance Number 1560, regardless of the city's local water supply. All customers are required to reduce potable water use consumption by a minimum twenty-five percent compared to their potable water consumption in the 2013 base year.

14.7.1.4 Stage 4 – Water Emergency

Stage 4 means that the city is experiencing a major failure of water supply or distribution, or the state of California has adopted regulations requiring the city to implement requirements and actions of a Stage 4 water emergency as outline in Section 12.20.024 of Ordinance Number 1560, regardless of the city's local water supply. All customers are required to reduce potable water consumption by a minimum thirty percent compared to their potable water consumption in the 2013 base year. The use of water shall be limited to essential household, commercial, manufacturing or processing uses only, except where other uses may be allowed by permit.

The stages based on amount of supply are shown in Table 14-17.

Table 14-17. DWR Table 8-1R. Stages of WSCP

Stage	Percent Supply Reduction	Water Supply Condition
1	0	Normal
2	20	Water Alert Conditions
3	25	Water Warning Conditions
4	30 to 50	Water Emergency Conditions

14.7.2 Prohibitions on End Uses

The water use prohibitions for each stage are shown in Table 14-18.

Table 14-18. DWR Table 8-2R. Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	CII - Restaurants may only serve water upon request	All restaurants and food establishments are requested not to serve water to their customers unless specifically requested by the customer.	No
1	Landscape - Limit landscape irrigation to specific times	Watering with automatic sprinklers should be done between 8 pm and 6 am and that hand watering and non-automatic sprinklers should be done between 6 pm and 8 am. Drip irrigation is exempt from this recommendation. Water being used during repair or maintenance of watering systems is exempt from this section.	No
1	Landscape - Other landscape restriction or prohibition	The use of sprinklers for any type of irrigation during high winds, which divert a significant amount of water away from the intended landscaping, is prohibited.	Yes
1	Landscape - Other landscape restriction or prohibition	The irrigation with potable water of landscape outside of newly constructed homes and buildings must be consistent with regulations or other requirements established by the California Buildings Standards Commission, as those regulations may be modified from time to time.	Yes
1	Landscape - Prohibit certain types of landscape irrigation	The irrigation of potable water of ornamental turf on public street medians is prohibited. The term "median" shall mean the strip of land between street lanes.	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Water used which results in flooding or run-off should be prevented and controlled. Use of water for any purpose which results in flooding or run-off in gutters, driveways or streets is prohibited.	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	No person shall knowingly permit water to leak from any facility, improvement or plumbing fixture on his/her/its premises; any such leak shall be repaired in a timely manner.	Yes
1	Other - Prohibit use of potable water for washing hard surfaces	There shall be no application of water to sidewalks, walkways, driveways, parking areas, patios, porches, verandas, tennis courts or other paved, concrete or other hard surface areas, except that flammable or other similarly dangerous or unhealthy substances may be washed from said areas by direct hose flushing for the benefit of public health or safety.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Other - Require automatic shut of hoses	Washing of automobiles, trucks, trailers, boats and other mobile equipment is prohibited unless done with a bucket or hand held device equipped with an automatic shut off trigger nozzle or device attached to it that causes it to cease dispensing water immediately when not in use. This section does not apply to the washing of the above-listed vehicles or mobile equipment when conducted at a commercial car or truck wash utilizing recirculating systems. Such washings are exempted from these regulations when the health, safety, and welfare of the public is contingent upon frequent vehicle cleaning such as garbage trucks and vehicles used to transport food and perishables.	Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	No water to be used to clean, fill, operate or maintain decorative fountains unless the water is from a recycled source.	Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	No water shall be used to clean, fill, operate or maintain levels in decorative fountains unless such water is part of a recirculating system.	Yes
2	CII - Lodging establishment must offer opt out of linen service	Operators of hotels and motels must provide guests with the option of choosing not to have towels and linens laundered daily and prominently display notice of this option.	Yes
2	CII - Restaurants may only serve water upon request	All restaurants are prohibited from serving water to their customers except when specifically requested by the customer.	Yes
2	Landscape - Limit landscape irrigation to specific days	All landscape irrigation shall be limited to no more than four (4) days per week for no more than ten (10) minutes per station per day. This provision does not apply to any landscape that has water-efficient devices that are operated properly. Water-efficient devices are drip irrigation systems and operational weather-based irrigation controllers. The term "week" is defined as Sunday through Saturday.	Yes
2	Landscape - Other landscape restriction or prohibition	The city shall screen all new applications for water service installations and shall limit water use to that essential for construction and testing of landscape plumbing. Limited landscaping for new development shall be allowed as approved by the city.	Yes
2	Landscape - Other landscape restriction or prohibition	Irrigating turf or ornamental landscapes during or within forty-eight (48) hours following measurable precipitation in excess of one-quarter inch is prohibited	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	All customers shall repair all leaks within seventy-two (72) hours of notification by the city, actual notice by the customer, or other notice of such leak, unless other arrangements are made with the city administrator or his/her designee.	Yes
3-B	CII - Other CII restriction or prohibition	Water used for compaction, dust control, and other types of construction shall be by permit only and will be limited to conditions of the permit or may be prohibited as determined by the city administrator, or his/her designee.	Yes
3-A	Landscape - Limit landscape irrigation to specific days	All landscape irrigation with potable water shall be limited to no more than three days per week for no more than ten minutes per station per day. This provision does not apply to any landscape that has water-efficient devices that are operated properly. Water-efficient devices are drip irrigation systems and operational weather-based irrigation controllers. Week is defined as Sunday through Saturday.	Yes
3-A	Landscape - Other landscape restriction or prohibition	New water service shall be installed but water shall be used before occupancy for essential construction only and for testing of landscape irrigation systems. The installation of new landscaping for all new development/projects must be approved by the city.	Yes
3-C	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Washing of automobiles, trucks, trailers, boats, airplanes and other types of mobile equipment is prohibited. Washing of the above-listed vehicles or mobile equipment shall be done only at a commercial car wash where recirculating or recycled water is being utilized. Such washings are exempt from these regulations when the health, safety, and welfare of the public is contingent upon frequent vehicle cleaning such as garbage trucks and vehicles used to transport food and perishables.	Yes
3-A	Other water feature or swimming pool restriction	Swimming pools, ornamental ponds, fountains, water displays, hot tubs, spas and artificial lakes shall not be filled or refilled.	Yes
4	CII - Other CII restriction or prohibition	No water shall be used for construction purposes unless they are using reclaimed water. All fire hydrant and construction meters shall be locked off or removed.	Yes
4	Landscape - Limit landscape irrigation to specific times	Commercial nurseries shall water only between the hours of 11 p.m. and 6 a.m. and only with hand-held devices or with drip irrigation.	Yes
4	Landscape - Prohibit all landscape irrigation	There shall be no watering of any lawn or landscaped area, except by use of reclaimed water.	Yes
4	Other	The use of water shall be limited to essential household, commercial, manufacturing or processing uses only, except where other uses may be allowed by permit.	Yes

14.7.3 Penalties, Charges, Other Enforcement of Prohibitions

14.7.3.1 First Violation: Notice of Non-Compliance

A written "warning shall be issued for the first offense.

14.7.3.2 Second Violation: Warning of Penalties

A written warning notice of the future imposition of penalties that could be placed on the customer's water bill shall be issued for the second offense.

14.7.3.3 Third Violation: Surcharge

A surcharge of one hundred dollars shall be added to that billing for the third offense occurring within a one-year period.

14.7.3.4 Fourth Violation: Surcharge

A surcharge of three hundred dollars, and installation of a flow restricting device in the meter for a minimum of ninety-six hours (at customer's expense) shall be imposed for the fourth offense occurring within a one-year period. Said restricted flow shall meet minimum county health department's standards, if any have been established. If said ninety-six-hour period ends on a weekend or holiday, full service will be restored during the next business day.

14.7.3.5 Fifth Violation: Surcharge

A surcharge of five hundred dollars, and termination of water service at customer's expense for a two-day period shall be imposed for the fifth offense occurring within a one-year period. Prior to the termination of water service, the customer may request an administrative hearing pursuant to Section 1.10.050 of Ordinance No.1560.

14.7.4 Consumption Reduction Methods

Through adherence to conservation measures, the City participates in Statewide efforts to conserve water and protect the ecological habitat of the region. Although ecological motives are controversial, ensuring a reliable supply of water for human use is a top priority without controversy. Through conservation measures and the use of recycled water supplies, the City can reduce demand for water. The City understands the unique needs of its customers and the importance of efficient water use. As a result, the City will utilize management strategies specific to the needs of its residents. The methods to be used in achieving its 2020 reduction requirements include, but are not limited to, the Demand Management Measures described above. In addition, the City may enact additional water use restrictions in accordance with its Emergency Conservation Plan Ordinance. With increased public awareness of SB X7-7 requirements, it is likely that the public will begin to understand the importance of water conservation and will begin to use water more efficiently.

Table 14-19. DWR Table 8-3R. Stages of WSCP - Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
All	Expand Public Information Campaign	

14.7.5 Determining Water Shortage Reductions

All existing and new water services are metered. A water meter calibration and replacement program is in place to continually improve accurate meter readouts. New services, with the exception of single-family residences and apartment complexes up to and including four units per meter are required to install a separate water meter for the on-site landscaping. Incentives are offered to Mobile Home Parks for installation of sub-meters.

14.7.6 Revenue and Expenditure Impacts

The City has a tiered rate schedule for water customers to encourage water conservation and provide the economic incentives to customers to use water efficiently.

14.7.7 Resolution or Ordinance

To offset the prolonged effects of a drought period or other emergency, the City Council adopted Ordinance No. 1130 in December 1990. The ordinance provides water conservation measures in order to minimize the effect of a water shortage on the citizens of the community. The ordinance includes provisions that will significantly reduce the waste and inefficient use of water, thereby extending the available water resources required for the domestic and fire protection needs of the City and general public. The City adopted Ordinance No. 1560 in May, 2015, to update the sections regarding the four (4) stages that make up the water conservation requirements, attached in Appendix G.

14.7.8 Catastrophic Supply Interruption

Response to future drought conditions will follow the water use efficiency mandates of the City's Water Shortage Contingency Plan, along with implementation of the appropriate regional contingency plans.

14.7.9 Minimum Supply Next Three Years

The UWMP Act requires a retailer to quantify the minimum water supply available during the years 2016 to 2018, assuming years 2016 to 2018 repeat the driest three-year historic sequence for each water supply source. This estimated supply is shown in Table 14-20. Comparing these supplies to the demand projections, Rialto has adequate supplies available to meet projected demands should a multiple-dry year period occur during the next three years.

Table 14-20. DWR Table 8-4R. Minimum Supply Next Three Years (AF)

Available Water Supply	2016	2017	2018
Available Water Supply	11,420	11,420	11,420

14.8 Supply and Demand Assessment

The anticipated supplies and demands are compared in the following tables.

Table 14-21. DWR Table 7-2R. Normal Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	11,596	12,096	12,596	13,096	13,596
Demand Totals	10,583	11,216	11,886	12,597	13,350
Difference	1,013	880	710	499	246

Table 14-22. DWR Table 7-3R. Single Dry Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	11,420	11,920	12,420	12,920	13,420
Demand Totals	10,583	11,216	11,886	12,597	13,350
Difference	837	704	534	323	70

Table 14-23. DWR Table 7-4R. Multiple Dry Years Supply and Demand Comparison (AF)

Year	Totals	2020	2025	2030	2035	2040
First Year	Supply Totals	11,420	11,920	12,420	12,920	13,420
	Demand Totals	10,583	11,216	11,886	12,597	13,350
	Difference	837	704	534	323	70
Second Year	Supply Totals	11,420	11,920	12,420	12,920	13,420
	Demand Totals	10,583	11,216	11,886	12,597	13,350
	Difference	837	704	534	323	70
Third Year	Supply Totals	11,420	11,920	12,420	12,920	13,420
	Demand Totals	10,583	11,216	11,886	12,597	13,350
	Difference	837	704	534	323	70

15 Riverside Highland Water Company

15.1 System Description

15.1.1 General Description

RHWC provides domestic and irrigation water services to the City of Grand Terrace, portions of the City of Colton, and portions of the unincorporated areas of the Counties of San Bernardino and Riverside. The water service is to single and multi-family residential, commercial, industrial and agricultural users.

With the rapid urbanization of agricultural areas within the service area, a decline in the irrigation water demand is showing. In most cases, the agricultural water demand is replaced with domestic demand. Large parks and greenbelt areas are continued to be serviced with irrigation water which is non-potable due to a nitrate content which is in excess of drinking water standards. This will leave the potable water available for drinking water use.

15.1.2 Service Area Boundary Map

The service area is nearing about 85% built-out with the developments currently under construction or approved by the planning departments of the governing agencies. The major population center in the service area is the City of Grand Terrace. The service area is shown in Figure 15-1.

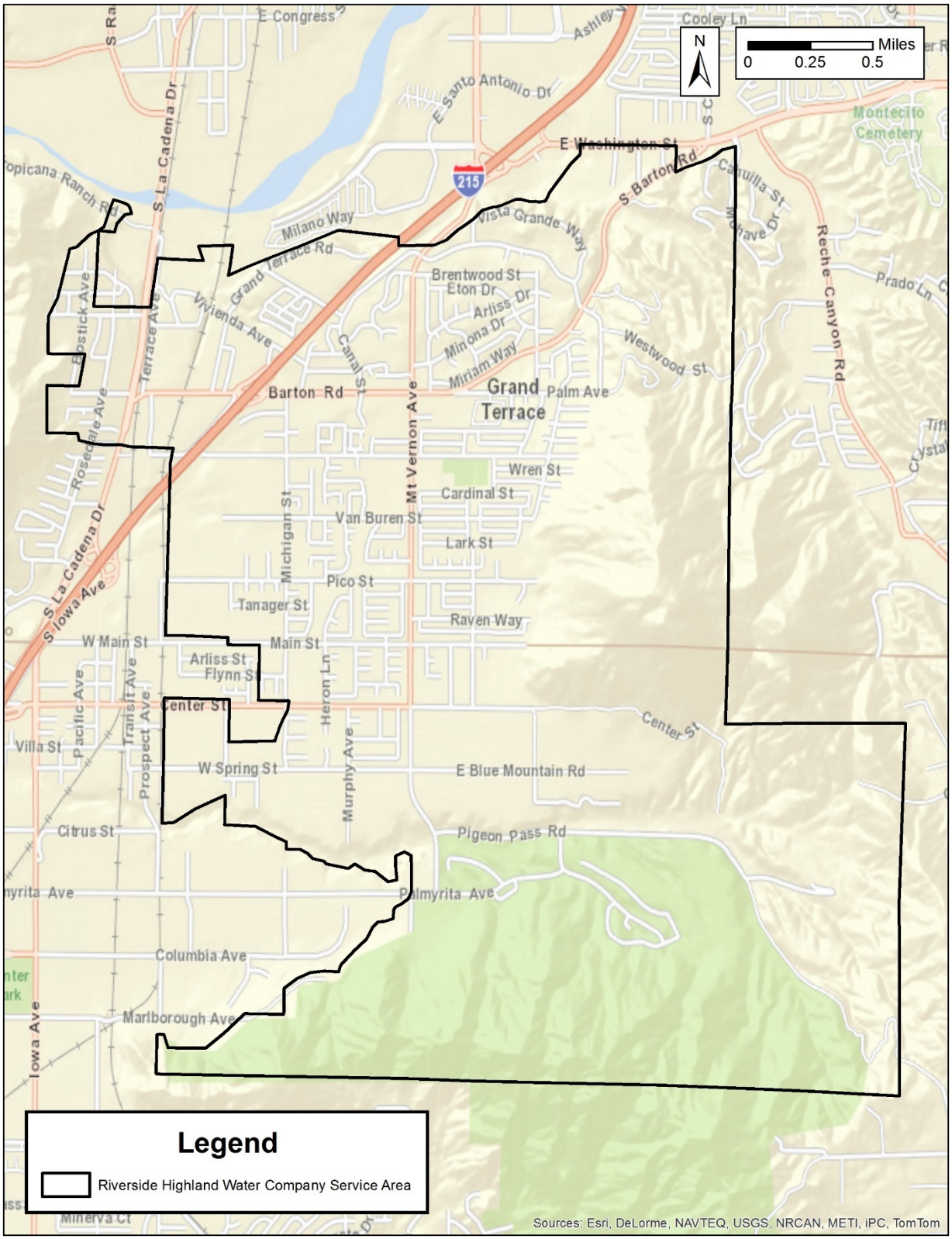


Figure 15-1. Riverside Highland Water Company Service Area

15.1.3 Service Area Climate

The climate typically exhibits hot, dry summers and mild, wet winters. Climate is a primary factor that influences water demand within the RHWC service area. Most rainfall occurs during the months of November through April. The hottest and driest period of the year is from June through September. It is not unusual during the summer months to have several consecutive days that the daily temperature exceeds 100 degrees Fahrenheit.

Average temperature, precipitation, and evapotranspiration by month are shown in Table 15-1. Evapotranspiration (ET) is the water lost to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indicator of how much water crops, lawn, garden, and trees need for healthy growth and productivity. ET from a standardized grass surface is commonly denoted as ETo. These data are based on 30 years of record (1986-2015) at Station 044 (University of California Riverside) within the California Irrigation Management Information System (CIMIS).

Table 15-1. Historical Climate Data

Month	Average Temperature (°F)	Average Precipitation (in.)	Average Standard ETo (in.)
January	52.4	3.22	2.53
February	54.6	3.25	2.87
March	56.7	2.86	4.30
April	60.9	1.29	5.38
May	65.6	0.47	5.82
June	71.3	0.09	6.76
July	77.7	0.04	7.38
August	77.7	0.15	7.09
September	73.9	0.33	5.51
October	66.5	0.71	3.97
November	58.6	1.32	2.89
December	53.3	2.38	2.38
Total		16.1	56.9
Notes: Precipitation and temperature for NOAA weather station 0407723 in San Bernardino; data from 1893 through 2004; http://wrcc.dri.edu; ETo data for CIMIS weather station 44 at University of California, Riverside; http://wwwcimis.water.ca.gov/			

15.1.4 Service Area Population and Demographics

For the 2015 UWMP cycle, the California Department of Water Resources (DWR) has developed a GIS-based tool to estimate the population within a water agency's service area using census data. This tool was used to intersect RHWC's water service area with compiled census data to estimate historic populations for RHWC's water service area. The tool provided service area populations for 1990, 2000, and 2010 using census data. The tool also used the number of residential connections in 2010 and 2015 to estimate a 2015 service area population of 16,007.

As part of the 2012 Adopted Growth Forecast, SCAG has estimated the population in 2020 and in 2035 inside each of approximately 4,000 traffic analysis zones (TAZ) that cover southern California. GIS

software was used to intersect RHWC's service area with the SCAG projections to arrive at population estimates for 2008, 2020, and 2035. RHWC used these values to calculate a compound annual growth rate of 0.8% for the period from 2015 to 2020, and a compound annual growth rate of 1.1% beyond 2020. These growth rates were used to estimate future population in the service area; these values are shown in Table 15-2.

Table 15-2. DWR Table 3-1R. Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040
Population Served	16,007	16,654	17,625	18,653	19,741	20,893

15.2 System Water Use

RHWC currently has 13 wells capable of producing water. Two of these wells, RN-21 and RN-22 are dedicated to provide irrigation water due to high nitrate concentrations. Three wells, FW-2, FW-5 and FW-18 are being used for the groundwater reduction program of Valley District. These three wells can be converted to domestic water production if required. To assess the water production capabilities for domestic water, all wells with the exception of the irrigation wells RN-21 and RN-22 will be considered.

15.2.1 Water Uses by Sector

RHWC categorizes customers as residential, commercial, agricultural irrigation, landscape irrigation and "other" uses. Water deliveries for each customer class for the years 2011 through 2015 are shown in Table 15-3. On average, 80 percent of water deliveries are for residential use, six percent are for commercial use, and 12 percent are for landscape irrigation, while the remaining two percent is attributed to agricultural irrigation and "other" water use.

Table 15-3. DWR Table 4-1R. Demands for Raw and Potable Water – Actual (AF)

Use Type	Level of Treatment When Delivered	2011	2012	2013	2014	2015
Single Family / Residential	Drinking Water	2,770	3,089	2,986	2,942	2,025
Multi-Family	Drinking Water	0	0	0	0	314
Commercial & Institutional	Drinking Water	226	355	311	268	271
Industrial	Drinking Water	0	0	0	0	8
Agricultural irrigation	Drinking Water	88	128	115	91	79
Landscape	Drinking Water	293	381	363	332	117
Other	Drinking Water	15	6	8	3	41
Nonrevenue	Drinking Water	335	94	175	101	110
	Total	3,727	4,054	3,958	3,736	2,964

Projected water use was estimated using the percentage change in the calculated GPCD for 2015 and target GPCD for 2020. The percentage change, or growth rates, were applied to 2015 water demands to derive estimated future water demands for 2020 through 2040 shown in Table 15-4. RHWC does not anticipate any routine or single large water sales to other agencies in the future. RHWC does not anticipate future water use related to saline barriers, groundwater recharge operations, or recycled water. For the purpose of projections, nonrevenue water is assumed to be 5 percent based on the average of water losses over the past five years. RHWC will continue efforts to decrease water loss and thereby reduce gallons per capita per day of water use.

Table 15-4. DWR Table 4-2R. Demands for Raw and Potable Water – Projected (AF)

Use Type	Level of Treatment	2020	2025	2030	2035	2040
Single Family / Residential	Drinking Water	2,167	2,293	2,427	2,569	2,718
Multi-Family	Drinking Water	336	356	376	398	422
Commercial & Institutional	Drinking Water	290	307	325	344	364
Industrial	Drinking Water	8	9	9	10	10
Agricultural irrigation	Drinking Water	84	89	94	100	105
Landscape	Drinking Water	125	132	140	148	157
Other	Drinking Water	44	46	49	52	55
Nonrevenue	Drinking Water	196	204	214	224	234
Future Development	Drinking Water	857	857	857	857	857
	Total	4,107	4,294	4,492	4,702	4,923

Table 15-5. DWR Table 4-3R. Total Water Demands (AF)

Demand	2015	2020	2025	2030	2035	2040
Potable and Raw Water	2,964	4,107	4,294	4,492	4,702	4,923
Recycled Water Demand	0	0	0	0	0	0
Total Water Demand	2,964	4,107	4,294	4,492	4,702	4,923

15.2.2 Distribution System Water Losses

Nonrevenue water is approximately 5 percent of RHWC's sales over the past five years. RHWC anticipates nonrevenue water of 5 percent for future water consumption based on their most recent water loss data and the past five years. According to the AWWA Water Audit for the year 2015, RHWC experienced approximately 2.2 percent losses. RHWC currently has a meter replacement program for leaking or broken meters. This program will increase the efficiency of their water distribution system by decreasing future water losses; however, water losses cannot be prevented entirely.

Table 15-6. DWR Table 4-4R. Water Loss Summary Most Recent 12 Month Period Available

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss
01/2015	30

15.2.3 Estimating Future Water Savings

RHWC is committed to long-range planning to provide a reliable, cost-effective water supply to its customers. RHWC actively monitors water consumption in its service area, in part to prepare required monthly reports for the State Water Resources Control Board.

For this report, RHWC has projected that future demands will increase at a percentage growth rate that incorporates two factors: the percentage growth in service area population, and potential changes in the per-capita consumption. This approach provides estimates for future system-wide demand that can be used for long-range planning.

In the 2015 UWMP, water suppliers have the option of preparing more detailed demand forecasts by estimating demand factors based on land use categories. For example, RHWC could identify typical water use per single family customer and per commercial account. These customer classes can be further sub-divided by lot size, neighborhood, or other variables. The intent is to quantify the estimated water use per customer in different customer classes, and then to forecast how future changes will impact water use within each customer class.

For this document, RHWC has elected not to develop land use-based demand factors and apply future savings from codes and standards. Recent drought regulations have induced significant changes in water consumption patterns, and there is considerable uncertainty as to how demands will change in the future if the drought subsides. Given this uncertainty, RHWC elected not to quantify passive savings for this UWMP.

15.2.4 Water Use for Lower Income Households

Senate Bill 1087 requires water use projections in an UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier. The major population center in the RWHC service area is the City of Grand Terrace. The Housing Element of the City's General Plan estimates that approximately 25 percent of households are considered lower-income.

RHWC's accounting system does not track the number of low-income households; therefore, projections were estimated by applying the historical demographic information to the projected urban retail water demands. Low-income single and multi-family households are expected to account for approximately 25-percent of the total retail water demand in the RHWC service area and are included in future demand projections.

Table 15-7. Estimated Demands for Lower-Income Households (AF)

Demand	2015	2020	2025	2030	2035	2040
Single Family Residential	498	533	564	597	632	669
Multi-Family Residential	77	83	87	93	98	104
Total	575	616	652	690	730	772

15.3 SB X7-7 Baselines and Targets

An urban retail water supplier must set a 2020 water use target (herein called the Compliance Water Use Target) and a 2015 interim target (herein called the Interim Water Use Target). RHWC is using Method 1 to calculate the Compliance and Interim Water Use Targets as set forth by Water Code section 10608.20(b). The Method 1 calculation is done by taking eighty percent of the urban water supplier's baseline GPCD.

Finally, the selected Compliance Water Use Target must be compared against what DWR calls the "Maximum Allowable GPCD". The Maximum Allowable GPCD is based on 95 percent of a 5-year average base gross water use from 2003 to 2010. The Maximum Allowable GPCD is used to determine whether a supplier's 2015 and 2020 per capita water use targets meet the minimum water use reduction of the SBX7-7 legislation. Specifically, if an agency's Compliance Water Use Target is higher than the Maximum Allowable GPCD, the agency must instead use the Maximum Allowable GPCD as their target.

15.3.1 Updating Calculations from 2010 UWMP

In the 2010 UWMP, RHWC calculated a baseline water use of 239 GPCD. RHWC used Target Method 1 to calculate a compliance water use target of 191 GPCD for 2020, and an interim water use target of 215 GPCD for 2015. In 2010, the actual consumption was calculated as 211 GPCD.

For the 2015 UWMP cycle, DWR has made a GIS-based population tool available to calculate service area population using Census Bureau data. RHWC has used this tool to re-calculate its service area population, baseline per-capita use, and compliance targets.

15.3.2 Baseline Periods

Years 2000 to 2009 have been selected for calculation of the 10-year base period, while years 2003 to 2007 have been selected for calculation of the 5-year base period. The 10-year average Base Daily Per Capita Water Use for RHWC is 240 GPCD; the 5-year is 234 GPCD.

15.3.3 Service Area Population

RHWC's service area population was calculated using the DWR Population Tool. The tool directly calculated a service area population for 1990, 2000, and 2010. Populations for intermediate years were calculated by straight-line interpolation between census years.

15.3.4 Gross Water Use

The calculation of gross water use begins with the total amount of water that was put into the potable water distribution system by RHWC. Water that was exported to another agency and agricultural irrigation were then subtracted, to leave the amount used by RHWC retail customers.

Water delivered to agricultural customers was not included in the urban water demand because those customers receive water from RHWC's non-potable wells and use that water to meet strictly irrigation demands.

For the period of 2000 to 2009, gross water use in the RHWC service area fluctuated between 3,684 and 4,772 acre-feet per year.

15.3.5 Baseline Daily per Capita Water Use

For the period from 2000 through 2009, the average base daily per capita water use is 239.7 GPCD.

15.3.6 2015 and 2020 Targets

In addition to calculating base gross water use, SBX7-7 requires the retail water supplier to identify its demand reduction targets. The methodologies for calculating demand reduction targets were described above. RHWC is choosing to meet SBX7-7 targets as an individual agency rather than as part of a regional alliance. RHWC has selected Method 1 to calculate its 2020 Compliance Water Use Target and Interim Water Use Target. The resulting Compliance Water Use Target is 191.7 GPCD and the Interim Water Use Target is 215.7 GPCD.

Table 15-8. DWR Table 5-1R. Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline GPCD	2015 Interim Target	Confirmed 2020 Target
10-year	2000	2009	239.7	215.7	191.7
5-year	2003	2007	233.7		

15.3.7 2015 Compliance Daily per Capita Water Use

RHWC did not apply any of the optional adjustments for extraordinary events, economic conditions, or weather in calculating 2015 gross water use. RHWC's actual GPCD for 2015 was 165.3. Their 2015 interim target GPCD is 215.7. RHWC is in compliance with the 2015 interim target.

Table 15-9. DWR Table 5-2R. 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Extra-ordinary Events	Economic Adjust-ment	Weather Normalization	Total Adjustments	Adjusted 2015 GPCD	2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015?
165.3	215.7	0	0	0	0	165.3	165.3	YES

15.4 Demand Management Measures

The reporting format for Demand Management Measures (DMMs) in the 2015 UWMP is different than the 2010 UWMP. This discussion has been arranged into the seven sections recommended by DWR in the 2015 UWMP Guidebook.

15.4.1 Water waste prevention ordinances

RHWC has adopted a water shortage contingency plan that has a water waste prohibition. RHWC will initiate an aggressive water commodity tiered rate structure to discourage water wasting, if the 20% reduction in per capita use is not met. Large water users have been identified and an aggressive education program for water conservation has been initiated to prevent water waste.

15.4.2 Metering

RHWC has implemented a program to completely replace all of its meters with automated meter readers.

15.4.3 Conservation pricing

In 1985, RHWC commissioned a “Revenue Requirement Study” to determine the revenue required for each class of service to pay its fair share of monies to operate and maintain the domestic and irrigation water systems. During the study it was noted that a waste of water was occurring by some customers and some irrigation customers were not metered. The rate structure at the time was for assessments to pay for water usage and a declining rate for water in excess of that amount represented by the assessment. In 1986, the RHWC Board of Directors accepted the Revenue Requirement Study and began to implement the new rate structure. Prior to beginning the new water rates, RHWC staff began a public information and education series of talks to the City of Grand Terrace, its largest customer base, service

clubs and information centers at community gatherings. When the rates were implemented, public acceptance was overwhelming.

RHWC completed an additional rate study (2010) to further reduce water consumption and match fixed revenue sources to fixed revenue expenditure, along with matching variable revenue sources to variable revenue expenditure. The current rates are shown in Table 15-10.

Table 15-10. Domestic Water Rates for RHWC (as of December 2015)

Units per 2 months	Rate per Unit
0 to 5,000	$0.81
5,001 to 9,000	$1.06
9,001 to 14,000	$1.25
Over 14,001	$1.44

The water rate structure is designed as an increasing charge for water as usage increases. Water meter readings are done bi-monthly. By adjusting the tier allotments and tier rates, RHWC has the ability to significantly increase water conservation.

If the 20% per conservation reduction is not met, the tier allotments would decrease and commodity rates for Tiers 2, 3 and 4 would be increased until the mandatory reduction in per capita water use would be met. It has been determined that 20 units (100 cubic feet = 1 unit) of water per 2-month period is the lifeline amount being used by customers for inside water use. Subsequent to 2015, all of the Tier rates will increase to match inflation.

This rate structure, along with the other RHWC programs, is planned to greatly reduce the water running down gutters and other water wasting habits. With agriculture being phased out, irrigation will be for landscaping and open space purposes.

15.4.4 Public education and outreach

In 1989, RHWC initiated an “In-Home Water Audit Program” to review customers in-house and outdoor uses and habits. The audit is performed at the request of the Customer or, it may be recommended by employees reviewing historic water usage against a high usage meter reading in any particular period of time. Upon completion of the water usage audit, recommendations are made to the homeowner to reduce water usage. RHWC personnel will follow up with the customer to review the recommendations made as a result of the audit. No record of water saved through this program has been maintained. It is believed that a significant reduction of water usage has been realized after an audit has been made and the employee recommendations have been implemented for individual customers.

Annually, the City of Grand Terrace which RHWC provides water service becomes involved with Water Awareness Month, including passing a Water Conservation Resolution and prominently displaying the winning poster from the schools during Water Awareness Month poster contest.

In the past, RHWC has sponsored and manned a booth at the City of Grand Terrace “Annual Merchants Fair”. At this booth, water conservation literature is available to participants and the personnel will answer questions and discuss water matters with the people who are normally RHWC customers. RHWC also has a water conservation booth annually at both the Grand Terrace Days and Highgrove Days.

RHWC maintains a literature rack in the lobby of the Corporate Offices. There are booklets and literature available at the booths sponsored by RHWC. An example of the literature available follows:

- Water Conservation Hints: This is a pamphlet prepared by RHWC as a handout to new customers or interested people.

- Drought Tolerant Plants: This is a handout prepared by RHWC and available in our lobby and upon request for our customers or interested parties.

- The website for IEfficient.com: This a website we refer our customers to for additional information. The Inland Empire's go-to source for information on water-use efficiency. Here you will find tips for increasing conservation and, most importantly, ways to eliminate water waste.

In 1991, in conjunction with the Colton Unified School District's "Partners in Education Adopt-A-School Program" RHWC adopted Terrace View Elementary School in the City of Grand Terrace. RHWC provides water service to the City of Grand Terrace. RHWC staff provide instruction about water resources, how water gets to the tap in your home, water conservation and the water business operations.

This "Adopt-A-School Program", now in its 25th year, utilizes classroom work by the teacher and RHWC employees, supervised tours to the Western Municipal Water District of Riverside County's "Low Water Use Demonstration Garden", the Metropolitan Water District of Southern California's Mills Water Treatment Plant, Oliver Roemer Water Filtration Plant, a water testing laboratory, an EPA Superfund Site, and the corporate facilities and operation facilities of RHWC.

On May 30, 2002, RHWC adopted a second school, Grand Terrace Elementary School, in the "Partners in Education, Adopt-A-School Program".

Each year, RHWC sponsors a "Water Awareness Poster" contest, which includes both schools during Water Awareness Month. Awards, which are engraved plaques are awarded to two winners in each school grade level. RHWC personnel are requested to judge the Annual Science Fair, both at the local school and district wide level. The Grand Prize Winner in the Poster Contest for each school is presented with a $100.00 U.S. Savings Bond sponsored by RHWC.

RHWC has no large commercial, industrial, or institutional accounts.

15.4.5 Programs to assess and manage distribution system real loss

RHWC is currently replacing all of the water meters with automated meters to help detect both meter leaks and leaks within the customer's property. During the regular reading duties, the meter and joining pipelines are reviewed for water leakage. Where water is noted in the reading of the meter, a service technician is dispatched to the location of the possible leak to evaluate the situation. Any leaks found, whatever the size, are repaired immediately. It has been the experience of RHWC that approximately 5.5% of the meters in the distribution system have small leaks in any one year. The automated water meters will enable RHWC to detect leaks within the customer's system. RHWC plans to initiate this customer leak detection program when the automated meter program is completed.

Meters that are noticeably not providing proper readings during the reading period and in the calculations for water used as compared to historic usage by water billing personnel will be evaluated and replaced or repaired as the situation requires. RHWC's "Water Meter Change-Out Program" commenced in 1981 and is continuing today. RHWC is replacing all of its water meters with new automated water meters. The "Meter Change-Out Program" will continue as an on-going program to ensure proper reading meters are being utilized within the distribution system.

RHWC has had an ongoing leak detection system that has been in place since 1989. RHWC has not keep a detailed accounting of how much water this program has conserved.

RHWC has a Capital Replacement Program that includes the replacement of water mains, valves, fittings and water service connections from the water main to the customer meter. Please note that all water sold is through meters regularly checked for accuracy. After replacing all of its water mains, RHWC has lowered its nonrevenue water to approximately 5 percent for the year 2015, and its audited water losses to 2.2 percent.

15.4.6 Water conservation program coordination and staffing support

RHWC had been experiencing reservoir overflows, water mixing problems in reservoirs and the need for excessive water flushing due to low water in reservoir problems. In response to these problems, RHWC installed a "State-Of-The-Art" Supervisory Control and Data Acquisition System (SCADA) in the water distribution system. Since the installation of the SCADA system, proper water levels in the reservoirs are maintained, and the use of "Time-of-Use" (TOU) electrical energy usage has been practicable, reducing energy bills to RHWC. The proper use of booster stations and the ability to utilize the most efficient and lowest cost water producing wells can be determined and operated by RHWC. In addition, records of operation are stored within the computer files for future reference to evaluate water distribution system. The RHWC distribution superintendent will be the water conservation coordinator.

15.4.7 Other demand management measures

RHWC has very few large landscape irrigation areas within its service area. RHWC plans, in the future, to offer non-potable irrigation water to these customers. RHWC has met with all of the large landscape owners. RHWC has initiated an informal program for water conservation for all of its large landscape customers. RHWC does not have a formal landscape conservation program or incentives, and does not plan to implement this type of program in the near future, but will continue to monitor the large landscape projects for cooperation in conservation.

RHWC does not currently have programs involving residential retrofits, large landscaping conservation programs and incentives, conservation programs for commercial, industrial, and institutional accounts, wholesale agency programs, water waste prohibition, or residential ultra-low flush toilet replacement programs. If RHWC's aggressive water commodity pricing rate schedule and its education programs do not meet the required 20% per capita reduction, RHWC will initiate the above mentioned water conservation programs.

15.4.8 Planned Implementation to Achieve Water Use Targets

RHWC's current per-capita consumption is less than its 2020 compliance target. RHWC expects to continue to implement its current conservation programs to encourage conservation and maintain per-capita consumption below the compliance target.

15.5 System Supplies

RHWC's water supply is comprised entirely of groundwater extracted from the San Bernardino Basin Area (Bunker Hill Basin portion), the Rialto-Colton Basin, and the Riverside Basin (Riverside North Basin portion). RHWC does not currently import water in order to meet the demands of its service area.

15.5.1 Purchased or Imported Water

RHWC has entered into an agreement with Valley District (SBVMWD Legal Document 1487, approved January 18, 1990) for a maximum flow rate of 1,000 gallons per minute from Valley District's "Base Line Feeder" project. The maximum quantity RHWC can receive in any calendar year is 1,000 acre-feet from this pipeline. Water obtained through this agreement will be assessed against RHWC's water right in the SBBA. This agreement was made with the understanding that it is a standby agreement and the water delivery is to be made only at RHWC's request.

15.5.2 Groundwater

The groundwater water supply is from five separate groundwater basins. RHWC extracts water from three separate basins: the SBBA, the Rialto-Colton Basin, and the Riverside North Basin. The SBBA extractions are from two sub-basins: the Lytle Creek Basin and the Bunker Hill Basin.

RHWC's historical production for the past five years is shown in Table 15-11.

Table 15-11. DWR Table 6-1R. Groundwater Volume Pumped (AF)

Groundwater Type	Location or Basin Name	Water Quality	2010	2011	2012	2013	2014	2015
Alluvial Basin	Riverside North	Drinking Water	2,987	2,513	2,358	2,139	2,099	1,460
Alluvial Basin	Riverside South	Drinking Water	0	0	0	0	0	43
Alluvial Basin	SBBA	Drinking Water	696	1,214	1,696	1,819	1,637	1,461
	Total		3,682	3,727	4,054	3,958	3,736	2,964

15.5.3 Surface Water

RHWC currently has no plans for future use of surface water supplies.

15.5.4 Stormwater

RHWC participates in regional planning efforts to encourage the capture of stormwater for groundwater recharge.

15.5.5 Wastewater and Recycled Water

The City of Colton provides wastewater collection and treatment for the area in which RHWC serves water. The City of Colton currently treats 0.8 to 1.2 Million Gallons a Day (MGD) of wastewater from RHWC's service area, in addition to the City of Colton's service area. For the purposes of calculations, RHWC assumes an average of 1.0 MGD is conveyed from the City of Grand Terrace. Colton jointly owns, with the City of San Bernardino, the RIX facility. The RIX facility further treats discharge from both the Colton and San Bernardino reclamation plants.

Some areas in RHWC's water service area are still served by septic tanks.

15.5.5.1 Recycled Water Coordination

SBMWD is planning to create recycled water from wastewater received at the San Bernardino Water Reclamation Plant, prior to that wastewater being sent to RIX. No recycled water is currently used in the Colton wastewater service area, including the RHWC service area. The City of Colton has indicated that construction of such facilities is cost prohibitive at this time and no recycled water use is anticipated during the period covered by this Plan.

15.5.5.2 Wastewater Collection, Treatment, and Disposal

Wastewater conveyed to the Colton Water Reclamation Facility undergoes conventional and extended aeration secondary treatment processes to produce secondary treatment effluent in compliance with Regional Water Quality Control Board (Santa Ana River Basin Region) regulations. Treated effluent from Colton's treatment plant is conveyed to the RIX facility. The RIX facility treats approximately 33 MGD from the Colton and City of San Bernardino treatment plants to tertiary standards in accordance with the standards of Title 22, Division 4 of the California Code of Regulations.

All of the RIX-treated water is discharged to the Santa Ana River; quantities discharged beyond the 16,000 AFY downstream obligations may be available for use as recycled water.

Table 15-12. DWR Table 6-2R. Wastewater Collected within Service Area in 2015

Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected in 2015 (AF)	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located within UWMP Area?	Is WWTP Operation Contracted to a Third Party?
City of Grand Terrace	Estimated	1,120	City of Colton	Colton Water Reclamation Facility	No	No
	Total Wastewater Collected from Service Area in 2015	1,120				

15.5.5.3 Actions to Encourage and Optimize Future Recycled Water Use

No recycled water is currently used in the RHWC service area. Despite the fact that developing recycled water facilities in the RHWC service area is cost prohibitive at the current time, RHWC does recognize the potential value of recycled water. Potential users would include landscape irrigation at schools, cemeteries, parks, and roadway medians as well as industrial process water. However, because RHWC does not specifically track these uses, potential recycled water demand cannot be quantified.

15.5.6 Desalinated Water Opportunities

The need for brackish groundwater desalting is somewhat limited in the San Bernardino Valley. While elevated salts are a concern in the groundwater basins of the Western Judgment (SBBA, Rialto-Colton, Riverside), average TDS levels in all of these basins are currently below 500 mg/L (DWR 2003). However,

elevated salts are an issue for retailers that overlie the San Timoteo Groundwater Basin and agencies in this basin are considering implementing desalter operations. The area is fortunate to have a brine line which can transport non-reclaimable waste, by gravity, from the San Bernardino Water Reclamation Plant to the Orange County Sanitation District's treatment plant.

The development of (or financial participation in) a new seawater desalination project, while costly, is being investigated by other wholesale and retail water agencies in southern California. Because the San Bernardino Valley is an inland area, in order for desalination to work it would be necessary for agencies in the San Bernardino Valley to join with other water purveyors in the development of a coastal desalination facility and then receive water from the SWP supplies of other participants via an exchange. It is not cost-effective for the San Bernardino Valley to receive direct delivery of desalted ocean water.

Seawater desalination is an alternative that is technically viable. However, production and treatment costs have historically been several times higher than those of SWP costs and conventional treatment.

15.5.7 Exchanges or Transfers

RHWC has "Emergency Inter-Ties" with the City of San Bernardino, City of Colton and the City of Rialto. In addition, the City of Riverside owns shares of stock in RHWC and obtains their share of water by "In-Lieu-Pumping". RHWC's agreement with the City of Riverside is included in Appendix L.

RHWC recently updated their agreement to lease water to WMWD; that agreement is included in Appendix M.

Emergency Inter-Ties:
City of San Bernardino, 1,000 gpm;
City of Rialto, 1,000 gpm and
City of Colton, 1,000 gpm.

To date, RHWC has not received any water from these inter-ties but has delivered water to the City of Colton.

15.5.8 Future Water Projects

Irrigation requirements will not disappear in the future. RHWC has wells (No. RN-21 and RN-22) which do not meet the standards for drinking water due to high nitrates and are dedicated to producing irrigation water for parks, landscaped and open space. RHWC also expects to meet much of its irrigation demand from wells in the Riverside South Basin for areas within its service area in Riverside County. It is estimated that approximately 2,000 acre-feet of this water will be extracted annually in the future for these purposes. The irrigation of water is planned primarily in areas where the geologic conditions are that the lands being irrigated are non-water bearing. In this manner the water being extracted will remove nitrates from the groundwater and placed in areas where they will not percolate back to the groundwater. It is planned that this extraction of the high nitrate water will help to return these wells back to drinking water standards.

RHWC does not have any specific projects planned to develop additional supplies at this time.

15.5.9 Summary of Existing and Planned Sources of Water

The water supply for RHWC is from five separate groundwater basins. These basins have been adjudicated in the "Orange County vs. City of Chino et al, Case Number 117628, County of Orange" Judgment (Orange County Judgment) and the "Western Municipal Water District vs. East San Bernardino County Water District et al, Case Number 78426, County of Riverside" Judgment (Western Judgment). In addition, RHWC has entered into an agreement with Valley District for a maximum of 1,000 gallons per minute of water from the District's Base Line Feeder project. Water obtained from this project will be assessed against RHWC's water right in the SBBA. This agreement was made with the understanding that it is a standby agreement and the water delivery to be made only at RHWC's request.

RHWC has 13 wells constructed in the groundwater basins of which eight wells produce potable water for domestic use, two wells which produce non-potable water at this time for irrigation purposes (reason for non-potable classification is nitrate which is in excess of State Drinking Water Standards), and three wells dedicated to pump water from the Bunker Hill Basin to lower the groundwater due to encroachment of the water into structures. This basin pump-out is being done within Valley District's program to lower the groundwater and the water extracted is not assessed against the water rights of RHWC.

RHWC has the right to construct new wells within its service area and outside of its service area. As the need arises, RHWC will construct new wells and place them in service as future projections show the need.

RHWC has been providing water to nearly all of the lands in its service area for over a century. A large portion of the water service has been irrigation water for citrus groves. A large part of the citrus groves is being taken out of production and the trees removed for land development projects for housing, commercial and industrial use. The water entitlements used for irrigation are being converted to domestic supply, not requiring additional water rights to meet demands.

Table 15-13. DWR Table 6-8R. Water Supplies - Actual

Water Supply	Additional Detail on Water Supply	2015 Actual Volume (AF)	2015 Water Quality
Groundwater	Riverside North	1,460	Drinking Water
Groundwater	Riverside South	43	Drinking Water
Groundwater	SBBA	1,461	Drinking Water
	Total	2,964	

Table 15-14. DWR Table 6-9R. Water Supplies – Projected (AF)

Water Supply	Additional Detail on Water Supply	2020	2025	2030	2035	2040
Groundwater	Riverside North	4,000	4,000	4,000	4,000	4,000
Groundwater	Riverside South					
Groundwater	SBBA	4,435	4,435	4,435	4,435	4,435
	Total	8,435	8,435	8,435	8,435	8,435

15.6 Water Supply Reliability Assessment

RHWC has participated and is currently participating in the regional planning of the water supplies for the San Bernardino/Riverside area. Regular meetings of the BTAC are held at the Valley District office. Valley District and Western are the Water Master for the San Bernardino Valley area surface and groundwater supplies.

15.6.1 Constraints on Water Sources

RHWC and the region are facing increasing challenges and opportunities in the role as stewards of water resources in the region. Each basin that RHWC acquires water from has unique challenges. Chapter 2 describes these water supplies, including water quality, in more detail.

15.6.2 Reliability by Type of Year

RHWC, Valley District, and Western have demonstrated that water supplies will meet the water demands in normal, single dry and multiple dry years. RHWC has the right to extract five percent of water in the SBBA with a five-year average representing their water right. There is no restriction on water extraction from the Rialto-Colton, Riverside South, and Riverside North Basin, which will be used during multiple dry years.

RHWC will have adequate water source extraction wells in service prior to the population increase to supply the areas. Current water production and storage facilities are in place to furnish the required water production. The current facilities would require very inefficient use for the higher production at times and with the conversion and construction of new water extraction wells, the system will be reliable with proper redundancy and high efficiency.

15.6.3 Regional Supply Reliability

RHWC is committed to minimizing the need to import water from other regions. RHWC operates a number of conservation programs to implement various Demand Management Measures.

15.7 Water Shortage Contingency Planning

RHWC has a “Water Shortage Plan,” in place, programs whereby actions will go into effect if a catastrophic interruption, mandatory prohibition or other causes occur.

15.7.1 Stages of Action

15.7.1.1 Stage 1 – Normal Conditions

During times of normal supply, it is recommended that water conservation be practiced within the home or business and prevent the waste of unreasonable use of water.

15.7.1.2 Stage 2 – Water Alert Conditions

Stage 2 has more prohibitions, in addition to the prohibitions contained in Stage 1.

15.7.1.3 Stage 3 – Water Warning Conditions

Stage 3 has more prohibitions, in addition to the prohibitions and actions under Stage 2.

15.7.1.4 Stage 4 – Water Emergency Conditions

Stage 4 is the most restrictive stage. Under this stage water use is limited to essential household, commercial, manufacturing or processing uses.

Table 15-15. DWR Table 8-1R. Stages of WSCP

Stage	Percent Supply Reduction	Water Supply Condition
1	10	Normal
2	25	Water Alert Conditions
3	35	Water Warning Conditions
4	50	Water Emergency Conditions

15.7.2 Prohibitions on End Uses

The water use prohibitions for each stage are shown in Table 15-16.

Table 15-16. DWR Table 8-2R. Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Water use which results in flooding or run-off should be prevented and controlled.	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Leaking plumbing fixtures shall be repaired in a timely manner so as to not waste water.	Yes
1	Other - Require automatic shut of hoses	The use of sprinklers for any type of irrigation during high winds is prohibited.	Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	No water shall be used to clean, fill, operate or maintain levels in decorative fountains unless the water is part of a recycling system.	Yes
2	CII - Restaurants may only serve water upon request	All restaurants prohibited from serving water to their customers except upon specific request.	Yes
2	Landscape - Limit landscape irrigation to specific times	Commercial nurseries shall water only between 11 P.M. and 6 A.M. using hand held devices or drip irrigation.	Yes
2	Landscape - Other landscape restriction or prohibition	Irrigation limited to crops presently planted.	Yes
2	Landscape - Restrict or prohibit runoff from landscape irrigation	School grounds shall prevent run-off from irrigation activities. All publicly owned lawns and landscape shall prevent run-off from irrigation activities. All residential lawn watering shall prevent run-off from irrigation activities.	Yes
2	Other - Prohibit use of potable water for washing hard surfaces	There shall be no washing of driveways or sidewalks.	Yes

Stage	Restrictions and Prohibitions on End Uses	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
2	Water Features - Restrict water use for decorative water features, such as fountains	The washing of automobiles, trucks, trailers, boats, and other mobile equipment is prohibited unless done with a hand held device equipped with an automatic shut off trigger nozzle. This does not apply to commercial car washes utilizing a recycling system or when the health and safety of the public would necessitate.	Yes
3	Landscape - Limit landscape irrigation to specific days	All residential lawn watering to be performed on a Company approved schedule for hours and days of the week.	Yes
3	Landscape - Limit landscape irrigation to specific times	All agricultural water users shall irrigate only at time approved by the company.	Yes
3	Landscape - Limit landscape irrigation to specific times	Commercial nurseries shall water only between 11 P.M. and 6 A.M. using hand held devices or drip irrigation. Consumption shall be reduced by a minimum of 35%. School grounds to be watered on a Company approved schedule for hours and days of the week. Consumption shall be reduced by a minimum of 35%. All publicly owned lawns, landscape watering to be performed on a Company approved schedule for hours and days of the week. Consumption shall be reduced by a minimum of 35%.	Yes
3	Other water feature or swimming pool restriction	Swimming pools and fountains are not to be refilled after draining.	Yes
4	CII - Other CII restriction or prohibition	No construction water use to be allowed, construction meters to be locked off or removed.	Yes
4	Landscape - Prohibit all landscape irrigation	No lawn or landscape water will be allowed.	Yes

15.7.3 Penalties, Charges, Other Enforcement of Prohibitions

RHWC could implement the following mechanisms to enforce the water use prohibitions:

- First Violation – issuance of written notice of violation to the water user, or a door tag placed on the customer's door.
- Second Violation – a fine or surcharge of $100.
- Third Violation – a fine or surcharge of $200.
- Fourth Violation – a fine or surcharge of $500 and/or the installation of a flow restricting device on the water meter at the Board of Directors discretion.

15.7.4 Consumption Reduction Methods

The consumption reduction methods for each stage are shown in Table 15-17.

Table 15-17. DWR Table 8-3R. Stages of WSCP - Consumption Reduction Methods

Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference
All	Expand public information campaign	

15.7.5 Determining Water Shortage Reductions

The mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency plan will be the review of the daily production figures and the bi-monthly water meter readings. The General Manager or his designee shall assess all available water supply data and shall make a report of his findings to the Board of Directors at the next regular meeting or at a special meeting called for that purpose. The Board of Directors at that time will determine and declare which of the four previously discussed conditions RHWC's water supply is in and the extent of water conservation required to prudently plan for and supply water to RHWC's customers.

15.7.6 Revenue and Expenditure Impacts

During stages 2 through 4 of the RHWC Water Shortage Contingency Plan, water consumption will decrease based on each individual stage and the amount of reduction goal achieved. The impacts of these reductions will result in a reduction in water sales revenues and a reduction of water production expenditures. In order to mitigate the financial impacts of a water shortage, RHWC maintains sufficient funds within its account. These funds could be used to stabilize water rates during periods of water shortage or disasters affecting the water supply. Even with these reserves, rate increases may be necessary during a prolonged water shortage. RHWC has increased its monthly meter charge and assessments to better balance its fixed expenses/fixed income versus its variable revenue/expenses.

15.7.7 Resolution or Ordinance

In 1987, RHWC started and maintained various funds whereby it can respond to emergencies without waiting for funds from outside sources. RHWC has approved a living document known as the "Emergency Preparedness and Response Procedure" in March, 1994 and most recently revised the document in April 2010 and adopted a "Water Shortage Contingency Plan" in July of 2014. A copy of the Water Shortage Contingency Plan is contained in Appendix G.

15.7.8 Catastrophic Supply Interruption

Extended multi-week supply shortages due to natural disasters or accidents which will damage all water sources are unlikely. RHWC's seven storage reservoirs hold 8 million gallons, which is sufficient water to meet health and safety requirements of 50 gallons per day per capita for the 4,000 customers for 13 days. This assumes zero non-residential use.

RHWC also has interconnections with the Cities of Colton and Rialto for emergency supplies. RHWC has portable back-up generators that can be used in the event of an area wide power outage. The generators can be located on both wells and booster stations throughout the system to continue water production.

15.7.9 Minimum Supply Next Three Years

The UWMP Act requires a retailer to quantify the minimum water supply available during the years 2016 to 2018, assuming years 2016 to 2018 repeat the driest three-year historic sequence for each water supply source. RHWC's groundwater supplies are expected to remain available during a multiple dry-

year period. These estimated total supplies, given a repeat of historically low conditions on all water supplies, are shown in Table 15-18. Comparing these supplies to the demand projections, RHWC has adequate supplies available to meet projected demands should a multiple-dry year period occur during the next three years.

Table 15-18. DWR Table 8-4R. Minimum Supply Next Three Years (AF)

Available Water Supply	2016	2017	2018
Available Water Supply	8,435	8,435	8,435

15.8 Supply and Demand Assessment

The anticipated supplies and demands are summarized in the following tables. Demand is expected to increase 10 percent during single dry and multiple-dry years.

Table 15-19. DWR Table 7-2R. Normal Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	8,435	8,435	8,435	8,435	8,435
Demand Totals	4,107	4,294	4,492	4,702	4,923
Difference	4,328	4,141	3,943	3,733	3,512

Table 15-20. DWR Table 7-3R. Single Dry Year Supply and Demand Comparison (AF)

Totals	2020	2025	2030	2035	2040
Supply Totals	8,435	8,435	8,435	8,435	8,435
Demand Totals	4,518	4,723	4,941	5,172	5,416
Difference	3,917	3,712	3,494	3,263	3,019

Table 15-21. DWR Table 7-4R. Multiple Dry Years Supply and Demand Comparison (AF)

Year	Totals	2020	2025	2030	2035	2040
First Year	Supply Totals	8,435	8,435	8,435	8,435	8,435
	Demand Totals	4,518	4,723	4,941	5,172	5,416
	Difference	3,917	3,712	3,494	3,263	3,019
Second Year	Supply Totals	8,435	8,435	8,435	8,435	8,435
	Demand Totals	4,518	4,723	4,941	5,172	5,416
	Difference	3,917	3,712	3,494	3,263	3,019
Third Year	Supply Totals	8,435	8,435	8,435	8,435	8,435
	Demand Totals	4,518	4,723	4,941	5,172	5,416
	Difference	3,917	3,712	3,494	3,263	3,019

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2015 San Bernardino Valley
Regional Urban Water Management Plan

Prepared for:

San Bernardino Valley Municipal Water District
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Yucaipa Valley Water District
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Appendix A

California Water Code
Urban Water Management Planning

California Water Code Division 6, Part 2.6.

Chapter 1. General Declaration and Policy §10610-10610.4
Chapter 2. Definitions §10611-10617
Chapter 3. Urban Water Management Plans
Article 1. General Provisions §10620-10621
Article 2. Contents of Plans §10630-10634
Article 2.5. Water Service Reliability §10635
Article 3. Adoption And Implementation of Plans §10640-10645
Chapter 4. Miscellaneous Provisions §10650-10656

Chapter 1. General Declaration and Policy

SECTION 10610-10610.4

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

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

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.

(4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

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

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

Chapter 2. Definitions

SECTION 10611-10617

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

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

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

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

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses,

reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

Chapter 3. Urban Water Management Plans

Article 1. General Provisions

SECTION 10620-10621

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that

share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621. (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero, except as provided in subdivision (d).

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

(c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

(d) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

Article 2. Contents of Plan

SECTION 10630-10634

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of

water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) (1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(A) An average water year.

(B) A single-dry water year.

(C) Multiple-dry water years.

(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(3) (A) For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

(4) (A) If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

(v) Programs to assess and manage distribution system real loss.

(vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

(2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.

(g) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water

use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(h) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

(i) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivision (f) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

(j) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

10631.1. (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

10631.2. (a) In addition to the requirements of Section 10631, an urban water management plan may, but is not required to, include any of the following information:

(1) An estimate of the amount of energy used to extract or divert water supplies.

(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.

(3) An estimate of the amount of energy used to treat water supplies.

(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.

(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.

(6) An estimate of the amount of energy used to place water into or withdraw from storage.

(7) Any other energy-related information the urban water supplier deems appropriate.

(b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.

10631.5. (a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

(3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has

submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

(4) (A) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

(B) For purposes of this paragraph, "not locally cost effective" means that the present value of the local benefits of implementing a water demand management measure is less than the present value of the local costs of implementing that measure.

(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following:

(A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water Conservation in California, and alternative conservation approaches that provide equal or greater water savings.

(B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and retail water suppliers.

(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following:

(i) Compliance on an individual basis.

(ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements.

(B) The department may require additional information for any determination pursuant to this section.

(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

(c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).

(d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.

(e) The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit biennial reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures.

(f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

10631.7. The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers, environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

10632. (a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:

(1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions that are applicable to each stage.

(2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

(3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are

appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(6) Penalties or charges for excessive use, where applicable.

(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(8) A draft water shortage contingency resolution or ordinance.

(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

(b) Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Article 2.5. Water Service Reliability

SECTION 10635

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

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

Article 3. Adoption and Implementation of Plans

SECTION 10640-10645

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area.

After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644. (a) (1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

(b) (1) Notwithstanding Section 10231.5 of the Government Code, the department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part.

The report prepared by the department shall identify the exemplary elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

(2) A report to be submitted pursuant to paragraph (1) shall be submitted in compliance with Section 9795 of the Government Code.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section 10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.

(2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).

(3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

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

Chapter 4. Miscellaneous Provisions

SECTION 10650-10656

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.

(b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26

(commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

Appendix B

California Water Code
Sustainable Water Use and Demand Reduction

California Water Code Division 6, Part 2.55.

Chapter 1. General Declarations and Policy §10608-10608.8
Chapter 2. Definitions §10608.12
Chapter 3. Urban Retail Water Suppliers §10608.16-10608.44
Chapter 4. Agricultural Water Suppliers §10608.48
Chapter 5. Sustainable Water Management §10608.50
Chapter 6 Standardized Data Collection §10608.52
Chapter 7 Funding Provisions §10608.56-10608.60
Chapter 8 Quantifying Agricultural Water Use Efficiency §10608.64

Chapter 1. General Declarations and Policy

SECTION 10608-10608.8

10608. The Legislature finds and declares all of the following:

(a) Water is a public resource that the California Constitution protects against waste and unreasonable use.

(b) Growing population, climate change, and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.

(c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.

(d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve streamflows, and reduce greenhouse gas emissions.

(e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.

(f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.

(g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.

(h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.

(i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

10608.4. It is the intent of the Legislature, by the enactment of this part, to do all of the following:

(a) Require all water suppliers to increase the efficiency of use of this essential resource.

(b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.

(c) Measure increased efficiency of urban water use on a per capita basis.

(d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.

(e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.

(f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.

(g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.

(h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.

(i) Require implementation of specified efficient water management practices for agricultural water suppliers.

(j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.

(k) Advance regional water resources management.

10608.8. (a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.

(2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to

January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an administrative proceeding. This paragraph shall become inoperative on January 1, 2021.

(3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.

(b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.

(c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.

(d) The requirements of this part do not apply to an agricultural water supplier that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect. After the expiration of the Quantification Settlement Agreement, to the extent conservation water projects implemented as part of the Quantification Settlement Agreement remain in effect, the conserved water created as part of those projects shall be credited against the obligations of the agricultural water supplier pursuant to this part.

Chapter 2 Definitions

SECTION 10608.12

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "Commercial water user" means a water user that provides or distributes a product or service.

(e) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(f) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(g) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(h) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(i) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

(j) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(k) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(l) "Process water" means water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry.

(m) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050, that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:

(1) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:

(A) Metered.

(B) Developed through planned investment by the urban water supplier or a wastewater treatment agency.

(C) Treated to a minimum tertiary level.

(D) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.

(2) For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water.

(n) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(o) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(p) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(q) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(r) "Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

Chapter 3 Urban Retail Water Suppliers

SECTION 10608.16-10608.44

10608.16.(a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

(b) The state shall make incremental progress towards the state target specified in subdivision (a) by reducing urban per capita water use by at least 10 percent on or before December 31, 2015.

10608.20.(a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.

(C) Provide flexibility to communities and regions in meeting the targets.

(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method

described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010 pursuant to Part 2.6 (commencing with Section 10610) the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its Internet Web site, and make written copies available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with subdivision (l) of Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the

Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) (1) An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow the use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

(2) An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6 (commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers.

10608.22. Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph(3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

10608.24.(a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

(b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

(c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

(d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.
(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in

paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

(e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

(f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.

(2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26.(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

(b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.

(c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the conservation of that military installation under federal Executive Order 13514.

(d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit

an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

(2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28.(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

10608.32. All costs incurred pursuant to this part by a water utility regulated by the Public Utilities Commission may be recoverable in rates subject to review and approval by the Public Utilities Commission, and may be recorded in a memorandum account and reviewed for reasonableness by the Public Utilities Commission.

10608.36. Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

10608.40. Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans

submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

10608.42.(a) The department shall review the 2015 urban water management plans and report to the Legislature by July 1, 2017, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

(b) A report to be submitted pursuant to subdivision (a) shall be submitted in compliance with Section 9795 of the Government Code.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

(a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.

(b) Evaluation of water demands for manufacturing processes, goods, and cooling.

(c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.

(d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.

(e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

10608.44. Each state agency shall reduce water use at facilities it operates to support urban retail water suppliers in meeting the target identified in Section 10608.16.

Chapter 4 Agricultural Water Suppliers

SECTION 10608.48

10608.48.(a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers shall implement all of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

(6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.

(7) Construct and operate supplier spill and tailwater recovery systems.

(8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.

(9) Automate canal control structures.

(10) Facilitate or promote customer pump testing and evaluation.

(11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.

(12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:

(A) On-farm irrigation and drainage system evaluations.

(B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.

(C) Surface water, groundwater, and drainage water quantity and quality data.

(D) Agricultural water management educational programs and materials for farmers, staff, and the public.

(13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.

(14) Evaluate and improve the efficiencies of the supplier's pumps.

(d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.

(e) The data shall be reported using a standardized form developed pursuant to Section 10608.52.

(f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.

(g) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.

(h) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.

(i) (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

Chapter 5 Sustainable Water Management

Section 10608.50

10608.50.(a) The department, in consultation with the board, shall promote implementation of regional water resources management practices through increased incentives and removal of barriers consistent with state and federal law. Potential changes may include, but are not limited to, all of the following:

(1) Revisions to the requirements for urban and agricultural water management plans.

(2) Revisions to the requirements for integrated regional water management plans.

(3) Revisions to the eligibility for state water management grants and loans.

(4) Revisions to state or local permitting requirements that increase water supply opportunities, but do not weaken water quality protection under state and federal law.

(5) Increased funding for research, feasibility studies, and project construction.

(6) Expanding technical and educational support for local land use and water management agencies.

(b) No later than January 1, 2011, and updated as part of the California Water Plan, the department, in consultation with the board, and with public input, shall propose new statewide targets, or review and update existing statewide targets, for regional water resources management practices, including, but not limited to, recycled water, brackish groundwater desalination, and infiltration and direct use of urban stormwater runoff.

Chapter 6 Standardized Data Collection

SECTION 10608.52

10608.52.(a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28.

(b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24 and an agricultural water supplier's compliance with implementation of efficient water management practices pursuant to subdivision (a) of Section 10608.48. The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

Chapter 7 Funding Provisions

Section 10608.56-10608.60

10608.56.(a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(b) On and after July 1, 2013, an agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(d) Notwithstanding subdivision (b), the department shall determine that an agricultural water supplier is eligible for a water grant or loan even though the supplier is not implementing all of the efficient water management practices described in Section 10608.48, if the agricultural water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the efficient water management practices. The supplier may request grant or loan funds to implement the efficient water management practices to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

10608.60.(a) It is the intent of the Legislature that funds made available by Section 75026 of the Public Resources Code should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for grants to implement this part. In the allocation of funding, it is the intent of the Legislature that the department give consideration to disadvantaged communities to assist in implementing the requirements of this part.

(b) It is the intent of the Legislature that funds made available by Section 75041 of the Public Resources Code, should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for direct expenditures to implement this part.

Chapter 8 Quantifying Agricultural Water Use Efficiency

SECTION 10608.64

10608.64. The department, in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders, shall develop a methodology for quantifying the efficiency of agricultural water use. Alternatives to be assessed shall include, but not be limited to, determination of efficiency levels based on crop type or irrigation system distribution uniformity. On or before December 31, 2011, the department shall report to the Legislature on a proposed methodology and a plan for implementation. The plan shall include the estimated implementation costs and the types of data needed to support the methodology. Nothing in this section authorizes the department to implement a methodology established pursuant to this section.

2015 San Bernardino Valley RUWMP

Appendix C

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

380 East Vanderbilt Way
San Bernardino, CA 92408
phone: 909.387.9200
fax: 909.387.9247
www.sbvmwd.com

February 10, 2016

Paula Stevens
Director and Chief Operator
Baseline Garden Mutual Water Company
PO Box 3331
San Bernardino, CA 92413

Subject: 2015 Regional Urban Water Management Plan for the San Bernardino Valley

Dear Director Stevens:

Notice is hereby given that the San Bernardino Valley Municipal Water District (Valley District) is in the process of preparing its 2015 Regional Urban Water Management Plan (RUWMP). The plan is being developed in cooperation with the City of Colton, City of Loma Linda, City of Redlands, City of Rialto, City of San Bernardino, East Valley Water District, Riverside Highland Water Company, West Valley Water District, and Yucaipa Valley Water District.

The RUWMP will include updated water demand projections within Valley District's service area. Water demand projections rely upon growth and population estimates from local land use plans and regional agencies. Valley District and the participating retail agencies encourage land use agencies and other interested parties to participate in the development of the RUWMP.

We anticipate that a draft of the RUWMP will be available for public review starting in May 2016 and that Valley District and the retail water agencies mentioned above will each hold a public hearing in June 2016, prior to adoption of the RUWMP. The public hearings will be announced on each agency's public agenda; each agency's web site is included below.

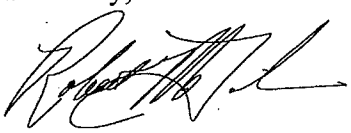
Agency	Web Site
San Bernardino Valley Municipal Water District	www.sbvmwd.com
City of Colton	www.ci.colton.ca.us
City of Loma Linda	www.lomalinda-ca.gov
City of Redlands	www.cityofredlands.org
City of Rialto	www.rialtoca.gov
City of San Bernardino	www.ci.san-bernardino.ca.us
East Valley Water District	www.eastvalley.org
Riverside Highland Water Company	www.rhwco.com
West Valley Water District	www.wvwd.org
Yucaipa Valley Water District	www.yvwd.dst.ca.us

Board of Directors and Officers

ED KILLGORE Division 1 | GIL NAVARRO Division 2 | SUSAN LONGVILLE Division 3 | MARK BULOT Division 4 | STEVE COPELAN Division 5 | DOUGLAS D. HEADRICK General Manager

If you have any questions or need additional information regarding the 2015 RUWMP, please do not hesitate to contact me. I can be reached at (909) 387-9215 or by e-mail at bobt@sbvmwd.com.

Sincerely,



Robert M. Tincher, P.E.
Manager of Water Resources

Agency	First Name	Last Name	Title	Street	City	State	Zip Code
Baseline Garden Mutual Water Company	Paula	Stevens	Director and Chief Operator	PO Box 3331	San Bernardino	CA	92413
Bear Valley Mutual Water Company	Charlotte	Van Eck	Clerk of the Board	101 East Olive Avenue	Redlands	CA	92373
Beaumont-Cherry Valley Water District			Clerk of the Board	560 Magnolia Avenue	Beaumont	CA	92223-2258
Big Bear Municipal Water District	Vicki	Sheppard	Clerk of the Board	PO Box 2863	Big Bear Lake	CA	92315
Cal. State San Bernardino/Water Resources Institute			Director	5500 University Parkway	San Bernardino	CA	92407-2318
California Regional Water Quality Control Board, Santa Ana Region			Executive Officer	3737 Main Street, Suite 500	Riverside	CA	92501-3348
California State Water Resources Control Board, Division of Drinking Water	Sean	McCarthy		464 W. 4th Street, Room 437	San Bernardino	CA	92401
City of Banning	Michael	Rock	City Manager	99 E. Ramsey Street	Banning	CA	92220
City of Beaumont	Elizabeth	Gibbs	City Manager	550 E. 6th Street	Beaumont	CA	92223
City of Calimesa	Bonnie	Johnson	City Manager	908 Park Avenue	Calimesa	CA	92320
City of Colton	Mark	Tomich	Development Services Director	650 N. La Cadena Drive	Colton	CA	92324
City of Fontana	Don	Williams	Community Development Director	8353 Sierra Avenue	Fontana	CA	92335
City of Grand Terrace	Joyce	Powers	Community and Economic Development Director	22795 Barton Road	Grand Terrace	CA	92313
City of Highland	John	Jaquess	Community Development Director	27215 Base Line Highland	Highland	CA	92346
City of Loma Linda	Deborah	Woldruff	Community Development Director	22541 Barton Road	Loma Linda	CA	92354
City of Loma Linda	T. Jarb	Thaipejr	Public Works Director	22541 Barton Road	Loma Linda	CA	92354
City of Redlands	Oscar	Orci	Community Development Director	35 Cajon Street	Redlands	CA	92373
City of Redlands	Chris	Diggs	Municipal Utilities and Engineering Director	35 Cajon Street	Redlands	CA	92373
City of Rialto	Mike	Story	Development Services Director	150 South Palm Avenue	Rialto	CA	92376
Rialto Water Services, LLC	Todd	Brown	General Manager	150 South Palm Avenue	Rialto	CA	92376
City of Riverside	Ken	Gutierrez	Planning Director	3900 Main Street, 3rd Floor	Riverside	CA	92522
Riverside Public Utilities	Girish	Balachandran	General Manager	3750 University Avenue	Riverside	CA	92501
City of San Bernardino	Margo	Wheeler	Director, Community Development Department	300 North "D" Street, 3rd Floor	San Bernardino	CA	92418
City of San Bernardino	Terri	Rahhal	City Planner	300 North "D" Street, 3rd Floor	San Bernardino	CA	92418
City of Yucaipa	John	McMains	Community Development Director	34272 Yucaipa Boulevard	Yucaipa	CA	92399
County of Riverside	Carolyn	Syns Luna	Planning Department	PO Box 1409	Riverside	CA	92502
County of San Bernardino	Christine	Kelley	Director, Land Use Services Department	385 N. Arrowhead Avenue - 1st Floor	San Bernardino	CA	92415-0182
County of San Bernardino	Kevin	Blakeslee	Chief Public Works Engineer	825 East Third Street	San Bernardino	CA	92415
County of San Bernardino	Granville	Bowman	Director of Public Works	825 East Third Street	San Bernardino	CA	92415
Crafton Hills College	Cheryl	Marshall	President	11711 Sand Canyon Road	Yucaipa	CA	92399
East Valley Water District	John	Mura	General Manager	31111 Greenspot Road	Highland	CA	92346
Fontana Water Company	Josh	Swift	General Manager	15966 Arrow Route	Fontana	CA	92335
Inland Empire Resources Conservation District			Clerk of the Board	25864-K Business Center Drive	Redlands	CA	92374
Jurupa Community Services District	Todd	Corbin	General Manager	11201 Harrel Street	Jurupa Valley	CA	91752
Muscoy Mutual Water Company	Lee	Sena		2167 Darby Street	San Bernardino	CA	92407
Muscoy Mutual Water Company	Rudy	Garcia	Supervisor	2167 Darby Street	San Bernardino	CA	92407
Riverside Highland Water Company	Don	Hough	General Manager	12374 Michigan Street	Grand Terrace	CA	92313-5602
Riverside Local Agency Formation Commission (LAFCO)			Clerk to the Commision	3850 Vine Street, Suite 240	Riverside	CA	92507-4277
San Bernardino County Local Agency Fomation Commission (LAFCO)			Clerk to the Commision	215 North D Street, Suite 204	San Bernardino	CA	92415-0490
San Bernardino Municipal Water Department	Stacey	Aldstadt	General Manager	300 North "D" Street, 5th Floor	San Bernardino	CA	92418
San Bernardino Valley Municipal Water District	Doug	Headrick	General Manager	380 East Vanderbilt Way	San Bernardino	CA	92408
San Bernardino Valley Water Conservation District			Clerk of the Board	1630 West Redlands Blvd #A	Redlands	CA	92373
San Gorgonio Pass Water Agency	Jeff	Davis	General Manager	1210 Beaumont Avenue	Beaumont	CA	92223
Santa Ana Watershed Project Authority	Celeste	Cantu	General Manager	11615 Sterling Avenue	Riverside	CA	92503
South Mesa Water Company			Clerk of the Board	391 West Avenue L	Calimesa	CA	92320
Terrace Water Company	Clyde	Graham	President	1095 1/2 Stevenson Street	Colton	CA	92324
United States Forest Service	Jody	Noiron	Forest Supervisor, San Bernardino National Forest	1824 South Commercenter Circle	San Bernardino	CA	92408-3430
West Valley Water District	Thomas	Crowley	General Manager	855 W. Baseline Road	Rialto	CA	92377
Western Heights Mutual Water Company	Joe	Calpino	District Manager	32352 Avenue D	Yucaipa	CA	92399
Western Municipal Water District	Leasa	Cleland	Director of Water Resources	14205 Meridian Parkway	Riverside	CA	92518
Yucaipa Valley Water District	Joseph	Zoba	General Manager	12770 Second Street	Yucaipa	CA	92399
Yucaipa-Calimesa Joint Unified School District			Clerk of the Board	12797 Third Street	Yucaipa	CA	92399

Yucaipa Valley Water District

Notice of a Community Water Meeting

Join Us for a Conversation about the Drought and Our Water Resources

The Yucaipa Valley Water District will be hosting a community conversation to discuss the current drought and the management of our water resources. For more additional information, please contact the Yucaipa Valley Water District at (909) 797-5117.

Thursday, October 29, 2015, 6:00 p.m. to 8:00 p.m.

Yucaipa Valley Regional Water Filtration Facility at Crystal Creek
35477 Oak Glen Road, Yucaipa 92399



SAN BERNARDINO COUNTY SUN

4030 N GEORGIA BLVD, SAN BERNARDINO, CA 92407
Telephone (909) 889-9666 / Fax (909) 885-1253

This space for filing stamp only

LILLIAN HERNANDEZ
SAN BERNARDINO VALLEY MUNI WATER DIST
380 E. VANDERBILT WAY
SAN BERNARDINO, CA - 92408

PROOF OF PUBLICATION

(2015.5 C.C.P.)

State of California)
County of SAN BERNARDINO) ss

Notice Type: HRGSB - NOTICE OF HEARING-SB

Ad Description:

2015 SAN BERNARDINO VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN

I am a citizen of the United States and a resident of the State of California; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer and publisher of the SAN BERNARDINO COUNTY SUN, a newspaper published in the English language in the city of SAN BERNARDINO, county of SAN BERNARDINO, and adjudged a newspaper of general circulation as defined by the laws of the State of California by the Superior Court of the County of SAN BERNARDINO, State of California, under date 06/27/1952, Case No. 73081. That the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

06/07/2016, 06/14/2016

Executed on: 06/14/2016
At Riverside, California

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Signature

Email

* A 0 0 0 0 0 0 4 1 3 2 8 5 8 *

SB #: 2884520

San Bernardino Valley Municipal Water District
NOTICE OF PUBLIC HEARING
2015 SAN BERNARDINO VALLEY REGIONAL
URBAN WATER MANAGEMENT PLAN

NOTICE IS HEREBY GIVEN that on June 21, 2016 at 2:30PM, in the meeting room of the Board of Directors of the San Bernardino Valley Municipal Water District, 380 E. Vanderbilt Way, San Bernardino, CA, the Board of Directors will conduct a public hearing pursuant to California Water Code sections 10642 and 10608.26 to consider and receive comments and input on the 2015 San Bernardino Valley Regional Urban Water Management Plan which serves as the 2015 Urban Water Management Plan for the San Bernardino Valley Municipal Water District.

This document has been prepared at the direction of San Bernardino Valley Municipal Water District, the City of Colton, East Valley Water District, the City of Loma Linda, the City of Redlands, the City of Rialto, the Riverside-Highland Water Company, the City of San Bernardino, West Valley Water District, and Yucaipa Valley Water District.

A copy of the 2015 San Bernardino Valley Regional Urban Water Management Plan was made available for public review on or before June 1, 2016, Monday through Friday, during normal business hours at the San Bernardino Valley Municipal Water District's Administrative Office located at 380 E. Vanderbilt Way, San Bernardino, CA. In addition, an electronic version will be accessible at sbvmwd.com. In summary, the 2015 San Bernardino Valley Regional Urban Water Management Plan has been developed for implementation in accordance with the requirements of the California Urban Water Management Planning Act, Water Code sections 10610 through 10657, and the Water Conservation Act of 2009, Water Code sections 10608 through 10608.64. Public input from diverse social, cultural and economic elements of the population is encouraged and will be considered as part of the 2015 Urban Water Management Planning process. Input from and coordination with the County of San Bernardino, cities and other public agencies within the San

Bernardino Valley Municipal Water District is also encouraged and will be considered. (Water Code §§ 10620(d)(2); 10621(b); 10642.) Any written comments regarding the 2015 San Bernardino Valley Regional Urban Water Management Plan should be submitted by the close of business on June 14, 2016 to the address set forth above, attention Bob Tincher. Public comments can also be made at the public hearing at the time and place first set forth above. Upon conclusion of the public hearing, the Board of Directors of the San Bernardino Valley Municipal Water District may revise, change, modify, and/or adopt the 2015 San Bernardino Valley Regional Urban Water Management Plan. Questions regarding the public hearing or the 2015 San Bernardino Valley Regional Urban Water Management Plan should be directed to Bob Tincher at (909) 387-9215. If you are disabled in any way and need accommodation to participate in the public hearing, please call Lillian Hernandez at (909) 387-9214 for assistance at least 10 working days prior to the hearing so the necessary arrangements can be made.

6/7, 6/14/16

SBS-2884520#

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Type	Order No	Description	Amount
Invoice	B2884520	2015 SAN BERNARDINO VALLEY REGIONAL URBAN WATER HRGSB NOTICE OF HEARING-SB 89900 SAN BERNARDINO COUNTY SUN 06/07,06/14/2016 *$ 2.20 * 138 AgateLines * 2 Inserts * 1 Cols* 607.20	607.20

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Total:	**607.20**
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6/14/2016	B2884520	1124126275

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Government Advertising - Division 1124

Amount Due **607.20**

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380 E. VANDERBILT WAY
SAN BERNARDINO, CA 92408 USA

THE PRESS-ENTERPRISE

1825 Chicago Ave, Suite 100
Riverside, CA 92507
951-684-1200
951-368-9018 FAX

PROOF OF PUBLICATION
(2010, 2015.5 C.C.P)

Publication(s): The Press-Enterprise

PROOF OF PUBLICATION OF

Ad Desc.: 2884526

I am a citizen of the United States. I am over the age of eighteen years and not a party to or interested in the above entitled matter. I am an authorized representative of THE PRESS-ENTERPRISE, a newspaper in general circulation, printed and published daily in the County of Riverside, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of Riverside, State of California, under date of April 25, 1952, Case Number 54446, under date of March 29, 1957, Case Number 65673, under date of August 25, 1995, Case Number 267864, and under date of September 16, 2013, Case Number RIC 1309013; that the notice, of which the annexed is a printed copy, has been published in said newspaper in accordance with the instructions of the person(s) requesting publication, and not in any supplement thereof on the following dates, to wit:

06/07, 06/14/2016

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Date: Jun 14, 2016

At: Riverside, California

Legal Advertising Representative, The Press-Enterprise

CALIF NEWSPAPER SERV BUREAU
PO BOX 60460
LOS ANGELES, CA 90060

Ad Number: 0010167895-01

P.O. Number: 2884526

Ad Copy:

San Bernardino Valley Municipal Water District
NOTICE OF PUBLIC HEARING
2015 SAN BERNARDINO VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN

NOTICE IS HEREBY GIVEN that on June 21, 2016 at 2:30PM, in the meeting room of the Board of Directors of the San Bernardino Valley Municipal Water District, 380 E. Vanderbilt Way, San Bernardino, CA, the Board of Directors will conduct a public hearing pursuant to California Water Code sections 10642 and 10608.26 to consider and receive comments and input on the 2015 San Bernardino Valley Regional Urban Water Management Plan which serves as the 2015 Urban Water Management Plan for the San Bernardino Valley Municipal Water District.

This document has been prepared at the direction of San Bernardino Valley Municipal Water District, the City of Colton, East Valley Water District, the City of Loma Linda, the City of Redlands, the City of Rialto, the Riverside-Highland Water Company, the City of San Bernardino, West Valley Water District, and Yucaipa Valley Water District.

A copy of the 2015 San Bernardino Valley Regional Urban Water Management Plan was made available for public review on or before June 1, 2016, Monday through Friday, during normal business hours at the San Bernardino Valley Municipal Water District's Administrative Office located at 380 E. Vanderbilt Way, San Bernardino, CA. In addition, an electronic version will be accessible at sbvmwd.com. In summary, the 2015 San Bernardino Valley Regional Urban Water Management Plan has been developed for implementation in accordance with the requirements of the California Urban Water Management Planning Act, Water Code sections 10610 through 10657, and the Water Conservation Act of 2009, Water Code sections 10608 through 10608.64. Public input from diverse social, cultural and economic elements of the population is encouraged and will be considered as part of the 2015 Urban Water Management Planning process. Input from and coordination with the County of San Bernardino, cities and other public agencies within the San Bernardino Valley Municipal Water District is also encouraged and will be considered. (Water Code §§ 10620(d)(2); 10621(b); 10642.) Any written comments regarding the 2015 San Bernardino Valley Regional Urban Water Management Plan should be submitted by the close of business on June 14, 2016 to the address set forth above, attention Bob Tincher. Public comments can also be made at the public hearing at the time and place first set forth above. Upon conclusion of the public hearing, the Board of Directors of the San Bernardino Valley Municipal Water District may revise, change, modify, and/or adopt the 2015 San Bernardino Valley Regional Urban Water Management Plan. Questions regarding the public hearing or the 2015 San Bernardino Valley Regional Urban Water Management Plan should be directed to Bob Tincher at (909) 387-9215. If you are disabled in any way and need accommodation to participate in the public hearing, please call Lillian Hernandez at (909) 387-9214 for assistance at least 10 working days prior to the hearing so the necessary arrangements can be made.

6/7, 6/14/16
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6/7/16	0010167895	2884526	PE Riverside	1 x 138 Li	345.00
6/7/16	0010167895	2884526			-69.00
6/14/16	0010167895	2884526	PE Riverside	1 x 138 Li	345.00
6/14/16	0010167895	2884526			-69.00

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552.00	0010167895	DUE UPON RECEIPT

BILLING ACCOUNT NAME AND ADDRESS

CALIF NEWSPAPER SERV BUREAU
PO BOX 60460
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The Press-Enterprise
Dept LA 24453
Pasadena, CA 91185-4453

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CALIFORNIA NEWSPAPER SERVICE BUREAU

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LEGAL ADVERTISING
INVOICE

Invoice Number	Date
B2884455	6/1/2016
Customer Account Number 1124115060	
Customer Payment Reference	
Special Project	

Ordered by:
EILEEN BATEMAN
EAST VALLEY WATER DISTRICT
31111 GREENSPOT ROAD
HIGHLAND, CA 92346 USA

For payment processing, please forward to:
KATHY
EAST VALLEY WATER DISTRICT
31111 GREENSPOT ROAD
HIGHLAND, CA 92346 USA

DUE UPON RECEIPT

Type	Order No	Description	Amount
Invoice	B2884455	NOTICE OF PUBLIC HEARING HRGSB NOTICE OF HEARING-SB 89900 SAN BERNARDINO COUNTY SUN 05/25,06/01/2016 *$ 2.20 * 70 AgateLines * 2 Inserts * 1 Cols* 308.00	308.00

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Total:	308.00
Payment:	0.00
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Invoice Date	Invoice Number	Customer Number
6/1/2016	B2884455	1124115060

* A 0 0 0 0 0 4 1 1 9 0 1 1 *

Government Advertising - Division 1124

Amount Due **308.00**

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KATHY
EAST VALLEY WATER DISTRICT
31111 GREENSPOT ROAD
HIGHLAND, CA 92346 USA

SAN BERNARDINO COUNTY SUN

This space for filing stamp only

4030 N GEORGIA BLVD, SAN BERNARDINO, CA 92407
Telephone (909) 889-9666 / Fax (909) 885-1253

Eileen Bateman
EAST VALLEY WATER DISTRICT
31111 GREENSPOT ROAD
HIGHLAND, CA - 92346

SB #: 2884455

PROOF OF PUBLICATION

(2015.5 C.C.P.)

State of California)
County of SAN BERNARDINO) ss

Notice Type: HRGSB - NOTICE OF HEARING-SB

Ad Description:

Notice of Public Hearing

I am a citizen of the United States and a resident of the State of California; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer and publisher of the SAN BERNARDINO COUNTY SUN, a newspaper published in the English language in the city of SAN BERNARDINO, county of SAN BERNARDINO, and adjudged a newspaper of general circulation as defined by the laws of the State of California by the Superior Court of the County of SAN BERNARDINO, State of California, under date 06/27/1952, Case No. 73081. That the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

East Valley Water District
NOTICE OF PUBLIC HEARING
2015 Urban Water Management Plan Update

NOTICE IS HEREBY GIVEN that a public hearing will be held on Wednesday, June 8, 2016 at 5:30 pm in the Board Room at 31111 Greenspot Road, Highland, California to receive comments on and consider adoption of East Valley Water District's 2015 Urban Water Management Plan Update. The California Urban Water Management Planning Act requires that each urban water supplier providing water for municipal purposes shall prepare and adopt its urban water management plan at least once every five years. The draft of the Urban Water Management Plan is available for review on the East Valley Water District's website at www.eastvalley.org or by contacting Jose Martinez, Assistant General Manager. After receipt of public testimony, the District Board of Directors may approve the Urban Water Management Plan or continue its consideration and approval to another date. Persons unable to attend the hearing may submit their written statements on the matter to Assistant General Manager, East Valley Water District, 31111 Greenspot Road, Highland, California 92346, prior to the date and time set for the hearing.

5/26/16

SBS-2884455#

05/25/2016, 06/01/2016

Executed on: 06/01/2016
At Riverside, California

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Signature

* A 0 0 0 0 0 0 4 1 1 9 0 1 8 *

SAN BERNARDINO COUNTY SUN

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4030 N GEORGIA BLVD, SAN BERNARDINO, CA 92407
Telephone (909) 889-9666 / Fax (909) 885-1253

Pamela Byrnes-O'Camb
CITY OF LOMA LINDA
25541 BARTON ROAD
LOMA LINDA, CA - 92354

SB #: 2889407

PROOF OF PUBLICATION

(2015.5 C.C.P.)

State of California)
County of SAN BERNARDINO) ss

Notice Type: HRGSB - NOTICE OF HEARING-SB

Ad Description:

NOH-Urban Water Management Plan

I am a citizen of the United States and a resident of the State of California; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer and publisher of the SAN BERNARDINO COUNTY SUN, a newspaper published in the English language in the city of SAN BERNARDINO, county of SAN BERNARDINO, and adjudged a newspaper of general circulation as defined by the laws of the State of California by the Superior Court of the County of SAN BERNARDINO, State of California, under date 06/27/1952, Case No. 73081. That the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

NOTICE
PUBLIC HEARING

PLEASE TAKE NOTICE that the City of Loma Linda is in the process of preparing its 2015 Urban Water Management Plan (UWMP) in accordance with the Urban Water Management Planning Act, Sections 10610 through10656 of the California Water Code. The draft plan is available for review at the Loma Linda Public Works Department at 25541 Barton Road, Loma Linda, CA 92354 during normal business hours, or as a PDF on the Loma Linda website.

Prior to adoption of the 2015 UWMP, the Loma Linda City Council will hold a PUBLIC HEARING in the City Council Chamber, 25541 Barton Road, Loma Linda, California, on Tuesday, the 14th day of June 2016 at 7:00 p.m., or as soon thereafter as possible, for the purpose of receiving comments. Comments can be submitted prior to or at the public hearing.

Should you have any questions or need additional information regarding the 2015 UWMP, please contact Jeff Peterson (909) 799-4407 or by email at jpeterson@lomalinda-ca.gov.

Pamela Byrnes-O'Camb, City Clerk
6/6/16

SBS-2889407#

06/06/2016

Executed on: 06/06/2016
At Riverside, California

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Signature

A0000004123407

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(2015.5 C.C.P.)

(Space below for stamp only)

STATE OF CALIFORNIA
County of San Bernardino
ss.

Proof of Publication of

The undersigned hereby certifies as follows:

I am a citizen of the United States and a resident of the County aforesaid. I am over the age of twenty-one years, and not a party to or interested In the above entitled matter. I am the principal clerk of the printer of the Redlands Daily Facts, a newspaper of general circulation, published daily in the City of Redlands, County of San Bernardino, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of San Bernardino, State of California, under the date of October 10, 1927, Case Number 26980; that the notice, of which the annexed is a true printed copy (set In type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on each of the followlng dates, to-wit:

6/7, 6/14

all in the year 2016.

I certify under the penalty of perjury that the foregoing is true and correct:

Cathy Wilson
Signature

Executed on the 14 day of June 2016 at Redlands, in the County of San Bernardino, State of California.

CITY OF REDLANDS
NOTICE OF PUBLIC HEARING
2015 URBAN WATER
MANAGEMENT PLAN

NOTICE IS HEREBY GIVEN that on June 21, 2016 at 6 pm, in the City Council Chambers located at 35 Cajon Street, Redlands, CA, the City Council of the City of Redlands, will conduct a public hearing pursuant to California Water Code sections 10642 and 10608.26 to consider and receive comments and input on the City of Redlands 2015 Urban Water Management Plan (UWMP), to allow community input regarding the City of Redlands' implementation plan for complying with Part 2.55 of the Water Code, to consider the potential economic impacts of the implementation plan, and to adopt a method pursuant to Water Code section 10608.20(b) for determining the City of Redlands' urban water use targets.

A copy of the City of Redlands' Draft 2015 UWMP will be available for public review on June 7, 2016, Monday through Thursday, during normal business hours in the City of Redlands' Municipal Utilities and Engineering Department located at 35 Cajon Street, Suite 15A. In addition, an electronic version of the Draft 2015 UWMP will be accessible at http://www.cityofredlands.org/MUED/water. In summary, the City of Redlands' 2015 UWMP has been developed for implementation in accordance with the requirements of the California Urban Water Management Planning Act, Water Code sections 10610 through 10657, and the Water Conservation Act of 2009, Water Code sections 10608 through 10608.64. Public input from diverse social, cultural and economic elements of the population is encouraged and will be considered as part of the 2015 UWMP process. Input from and coordination with the County of San Bernardino, cities within which the City of Redlands provides water supplies, and other public agencies is also encouraged and will be considered. (Water Code §§ 10620(d)(2); 10621(b); 10642.) Any written comments regarding the Draft 2015 UWMP should be submitted to the City Clerk at the address first set forth above, public comments can also be made at the public hearing at the time and place first set forth above. Upon conclusion of the public hearing, the City Council of the City of Redlands may revise, change, modify, and/or adopt the 2015 UWMP. Questions regarding the public hearing or the 2015 UWMP should be directed to Cecilia Griego at 909-798-7553.

6/7-14/2016 1554x

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City	SAN BERNARDINO	**Fax**	-
State - Zip	CA - 92402		

Ad Placement Information: Section of Newspaper and Type of Notice

Legal GOVERNMENT - GOVERNMENT PUBLIC NOTICE-SB

Order Information

Attention Name	Sally Duran	**Billing Reference No.**	28558
Ad Description	2015 RUWMP	**Sale/Hrg/Bid Date**	-
Special Instructions	-		

Orders Created

Order No.	Newspaper Name	Publishing Dates
2881545	SAN BERNARDINO COUNTY SUN, CA	05/24/2016, 05/31/2016
2881546	BLACK VOICE, CA	05/26/2016, 06/02/2016
2881547	EL CHICANO, CA	05/26/2016, 06/02/2016

Ad

The Ad exists as an uploaded file.
Click **here** to view file.

CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
NOTICE OF PUBLIC HEARING
2015 REGIONAL URBAN WATER MANAGEMENT PLAN

NOTICE IS HEREBY GIVEN that on June 7, 2016 at 9:30 a.m., in the Boardroom of the Board of Water Commissioners of the City of San Bernardino Municipal Water Department (SBMWD), 399 Chandler Place, San Bernardino, California 92408, the SBMWD Board of Water Commissioners will conduct a public hearing pursuant to California Water Code sections 10642 and 10608.26 to consider and receive comments and input on the *Draft 2015 San Bernardino Valley Regional Urban Water Management Plan*, to allow community input regarding SBMWD's implementation plan for complying with Division 6, Part 2.6 of the Water Code, to consider the potential economic impacts of the implementation plan, and to adopt a method pursuant to Water Code section 10608.20(b) for determining SBMWD's urban water use targets.

This document has been prepared at the direction of the SBMWD, San Bernardino Valley Municipal Water District, the City of Colton, East Valley Water District, the City of Loma Linda, the City of Redlands, West Valley Water District, Yucaipa Valley Water District, the City of Rialto, and Riverside Highland Water Company.

A copy of the *Draft 2015 San Bernardino Valley Regional Urban Water Management Plan* will be available for public review on May 23, 2016, Monday through Friday, during normal business hours at SBMWD's Customer Service counter located at 300 North "D" Street, 5th Floor, San Bernardino, California 92418. In addition, an electronic version of the *Draft 2015 San Bernardino Valley Regional Urban Water Management Plan* will be accessible at www.sbcity.org. In summary, the *2015 San Bernardino Valley Regional Urban Water Management Plan* has been developed for implementation in accordance with the requirements of the California Urban Water Management Planning Act, Water Code sections 10610 through 10656, and the Water Conservation Act of 2009, Water Code sections 10608 through 10608.64. Public input from diverse social, cultural and economic elements of the population is encouraged and will be considered as part of the urban water management planning process. Input from and coordination with the County of San Bernardino, cities within which SBMWD provides water supplies to, and other public agencies is also encouraged and will be considered. (Water Code §§ 10620(d)(2); 10621(b); 10642.) Any written comments regarding the *Draft 2015 San Bernardino Valley Regional Urban Water Management Plan* should be submitted by the close of business on June 6, 2016, to the address set forth above, attention Ted Brunson, or via e-mail to Ted.Brunson@sbmwd.org. Public comments can also be made at the public hearing at the time and place first set forth above. Upon conclusion of the public hearing, the SBMWD Board of Water Commissioners may revise, change, modify, and/or adopt the *2015 San Bernardino Valley Regional Urban Water Management Plan*. Questions regarding the public hearing or the *Draft 2015 San Bernardino Valley Regional Urban Water Management Plan* should be directed to Ted Brunson at (909) 522-3414.

Date: <Date of Publication>
San Bernardino Municipal Water Department

CALIFORNIA NEWSPAPER SERVICE BUREAU

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MAY 19 2016
By

SHANAE S. SMITH
WEST VALLEY WATER DISTRICT
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RIALTO, CA 92377

COPY OF NOTICE

Notice Type: GPNSB GOVERNMENT PUBLIC NOTICE-SB

Ad Description: WEST VALLEY WATER DISTRICT NOTICE OF PUBLIC HEARING 06/02/16

To the right is a copy of the notice you sent to us for publication in the SAN BERNARDINO COUNTY SUN. Please read this notice carefully and call us with any corrections. The Proof of Publication will be filed with the County Clerk, if required, and mailed to you after the last date below. Publication date(s) for this notice is (are):

05/19/2016 , 05/26/2016

The charge(s) for this order is as follows. An invoice will be sent after the last date of publication. If you prepaid this order in full, you will not receive an invoice.

Publication	$580.80
Total	$580.80

SBS# 2882338

WEST VALLEY WATER DISTRICT
NOTICE OF PUBLIC HEARING
2015 URBAN WATER MANAGEMENT PLAN

NOTICE IS HEREBY GIVEN that on June 2, 2016 at 6:00 p.m., in the meeting room of the Board of Directors of the West Valley Water District, located at 855 W. Baseline Rd., Rialto, CA 92376 the Board of Directors will conduct a public hearing pursuant to California Water Code sections 10642 and 10608.26 to consider and receive comments and input on the 2015 San Bernardino Valley Regional Urban Water Management Plan, which serves as the 2015 Urban Water Management Plan for West Valley Water District. The hearing will allow the community to provide input regarding the West Valley Water District's implementation plan for complying with Part 2.55 of the Water Code, to consider the potential economic impacts of the implementation plan, and to adopt a method pursuant to Water Code section 10608.20(b) for determining the West Valley Water District's urban water use targets.

A copy of the Draft 2015 San Bernardino Valley Regional Urban Water Management Plan will be available for public review on or before May 19, 2016, Monday through Friday, during normal business hours at the West Valley Water District's Administrative Office located at 855 W. Baseline Rd, Rialto, CA 92376. In addition, an electronic version of the Draft 2015 San Bernardino Valley Regional Urban Water Management Plan will be accessible at www.wvwd.org. In summary, the 2015 San Bernardino Valley Regional Urban Water Management Plan has been developed for implementation in accordance with the requirements of the California Urban Water Management Planning Act, Water Code sections 10610 through 10656, and the Water Conservation Act of 2009, Water Code sections 10608 through 10608.64. Public input from diverse social, cultural and economic elements of the population is encouraged and will be considered as part of the 2015 Urban Water Management Plan process. Input from and coordination with the County of San Bernardino, cities within which the West Valley Water District provides water supplies and other public agencies is also encouraged and will be considered. (Water Code §§ 10620(d)(2);

* A 0 0 0 0 0 0 4 1 0 3 8 0 7 *

10621(b); 10642.) Any written comments regarding the 2015 San Bernardino Valley Regional Urban Water Management Plan should be submitted by the close of business on May 31, 2016 to the address set forth above, attention Linda Jadeski. Public comments can also be made at the public hearing at the time and place first set forth above. Upon conclusion of the public hearing, the Board of Directors of the West Valley Water District may revise, change, modify, and/or adopt the 2015 San Bernardino Valley Regional Urban Water Management Plan. Questions regarding the public hearing or the 2015 San Bernardino Valley Regional Urban Water Management Plan should be directed to Linda Jadeski at (909) 875-1804 ext. 713. If you are disabled in any way and need accommodation to participate in the public hearing, please call Shanae Smith at (909) 875-1804 ext. 704 for assistance at least 48 hours prior to the hearing so the necessary arrangements can be made.
5/19, 5/26/16

SBS-2882338#

CALIFORNIA NEWSPAPER SERVICE BUREAU

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WATER DISTRICT

Jennifer Ares
YUCAIPA VALLEY WATER DIST
12770 SECOND ST PO BOX 730
YUCAIPA, CA 92399

SBS# 2885052

COPY OF NOTICE

Notice Type: HRGSB NOTICE OF HEARING-SB

Ad Description 2015 URBAN WATER MANAGEMENT PLAN AND THE2015 SAN BERNARDINO VALLEY REGIONAL

To the right is a copy of the notice you sent to us for publication in the SAN BERNARDINO COUNTY SUN. Please read this notice carefully and call us with any corrections. The Proof of Publication will be filed with the County Clerk, if required, and mailed to you after the last date below. Publication date(s) for this notice is (are):

05/27/2016 , 06/03/2016

The charge(s) for this order is as follows. An invoice will be sent after the last date of publication. If you prepaid this order in full, you will not receive an invoice.

Publication	$655.60
Total	$655.60

NOTICE OF PUBLIC HEARING YUCAIPA VALLEY WATER DISTRICT 2015 URBAN WATER MANAGEMENT PLAN AND THE 2015 San Bernardino VALLEY Regional URBAN WATER MANAGEMENT PLAN

NOTICE IS HEREBY GIVEN that on June 15th, 2016 at 6:00 p.m., in the meeting room of the Board of Directors of the Yucaipa Valley Water District at 12770 Second Street, Yucaipa, California 92399, the Board of Directors will conduct a public hearing pursuant to California Water Code sections 10642 and 10608.26 to consider and receive comments and input on the 2015 Yucaipa Valley Water District Urban Water Management Plan which is a chapter of the 2015 San Bernardino Valley Regional Urban Water Management Plan, to allow community input regarding the Yucaipa Valley Water District implementation plan for complying with Part 2.55 of the Water Code, to consider the potential economic impacts of the implementation plan, and to adopt a method pursuant to Water Code section 10608.20(b) for determining the Yucaipa Valley Water District's urban water use targets.

A copy of the Draft 2015 Regional Urban Water Management Plan is currently available for public review. The document will be available Monday through Friday, during normal business hours at the Yucaipa Valley Water District's Administrative Office located at 12770 Second Street, Yucaipa, California 92399. In addition, an electronic version of the Draft Regional Urban Water Management Plan will be accessible at the District website at www.yvwd.dst.ca.us.

In summary, the 2015 San Bernardino Valley Regional Urban Water Management Plan which includes Yucaipa Valley Water District's Urban Water Management Plan has been developed for implementation in accordance with the requirements of the California Urban Water Management Planning Act, Water Code sections 10610 through 10657, and the Water Conservation Act of 2009, Water Code sections 10608 through 10608.64. Public input from diverse social, cultural and economic elements of the population

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Any written comments regarding the Draft 2015 San Bernardino Valley Regional Urban Water Management Plan should be submitted by the close of business on June 8th, 2016 to the address set forth above. Public comments can also be made at the public hearing. Upon conclusion of the public hearing, the Board of Directors of the Yucaipa Valley Water District may revise, change, modify, and/or adopt the 2015 San Bernardino Valley Regional Urban Water Management Plan. Questions regarding the public hearing or the 2015 Urban Water Management Plan's should be directed to Jennifer Ares at (909)-790-3301. If you are disabled in any way and need accommodation to participate in the public hearing, please call Erin Anton at (909)-797-5118 for assistance at least two working days prior to the hearing so the necessary arrangements can be made.

YUCAIPA VALLEY WATER DISTRICT
5/27/16

SBS-2885052#

Printed at: 8:34 am
On: Tuesday , May 24, 2016

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Account Information

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Name:	YUCAIPA VALLEY WATER DISTRICT
Address:	PO BOX 730 YUCAIPA, CA 92399
Account #:	1100142583
Client:	
Placed By:	Jennifer Ares
Fax #:	909-797-6381

Ad Information

Placement:	Public Notice FR
Publication:	PE Riverside, PE.com
Start Date:	05/27/2016
Stop Date:	06/03/2016
Insertions:	2 print / 2 online
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Ad type:	C Legal
Size:	2 X 70 Li
Bill Size:	140.00
Amount Due:	**$560.00**

Ad Copy:

NOTICE OF PUBLIC HEARING
YUCAIPA VALLEY WATER DISTRICT
2015 URBAN WATER MANAGEMENT PLAN AND
THE 2015 SAN BERNARDINO VALLEY REGIONAL
URBAN WATER MANAGEMENT PLAN

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Date:
YUCAIPA VALLEY WATER DISTRICT

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NOTICE OF PUBLIC HEARING
YUCAIPA VALLEY WATER DISTRICT
2015 URBAN WATER MANAGEMENT PLAN AND THE
2015 SAN BERNARDINO VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN

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In summary, the *2015 San Bernardino Valley Regional Urban Water Management Plan* which includes Yucaipa Valley Water District's Urban Water Management Plan has been developed for implementation in accordance with the requirements of the California Urban Water Management Planning Act, Water Code sections 10610 through 10657, and the Water Conservation Act of 2009, Water Code sections 10608 through 10608.64. Public input from diverse social, cultural and economic elements of the population is encouraged and will be considered as part of the urban water management planning process. Input from and coordination with the Counties of San Bernardino and Riverside, cities within which the Yucaipa Valley Water District provides water and other public agencies are encouraged to provide comments. (Water Code §§ 10620(d)(2); 10621(b); 10642.)

Any written comments regarding the *Draft 2015 San Bernardino Valley Regional Urban Water Management Plan* should be submitted by the close of business on June 8th, 2016 to the address set forth above. Public comments can also be made at the public hearing. Upon conclusion of the public hearing, the Board of Directors of the Yucaipa Valley Water District may revise, change, modify, and/or adopt the *2015 San Bernardino Valley Regional Urban Water Management Plan.* Questions regarding the public hearing or the 2015 Urban Water Management Plan's should be directed to Jennifer Ares at (909)-790-3301. If you are disabled in any way and need accommodation to participate in the public hearing, please call Erin Anton at (909)-797-5118 for assistance at least two working days prior to the hearing so the necessary arrangements can be made.

YUCAIPA VALLEY WATER DISTRICT

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LOS ANGELES, CA 90054-0026

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CITY OF COLTON/CITY CLERK
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COLTON, CA 92324 USA

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SAN BERNARDINO COUNTY SUN

4030 N GEORGIA BLVD, SAN BERNARDINO, CA 92407
Telephone (909) 889-9666 / Fax (909) 885-1253

Jessica Sutorus c/o City Clerk
CITY OF COLTON/CITY CLERK
650 N. LA CADENA DRIVE
COLTON, CA - 92324

SB #: 2890702

PROOF OF PUBLICATION

(2015.5 C.C.P.)

State of California)
County of SAN BERNARDINO) ss

Notice Type: HRGSB - NOTICE OF HEARING-SB

Ad Description:

PH 062116 2016 Regional Urban Water Management Plan

I am a citizen of the United States and a resident of the State of California; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer and publisher of the SAN BERNARDINO COUNTY SUN, a newspaper published in the English language in the city of SAN BERNARDINO, county of SAN BERNARDINO, and adjudged a newspaper of general circulation as defined by the laws of the State of California by the Superior Court of the County of SAN BERNARDINO, State of California, under date 06/27/1952, Case No. 73081. That the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

06/11/2016

Executed on: 06/13/2016
At Riverside, California

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

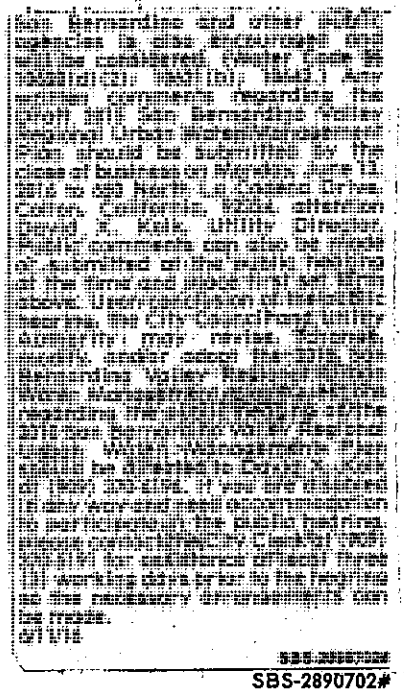
Signature

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CITY OF COLTON
COLTON UTILITY AUTHORITY
NOTICE OF PUBLIC HEARING
2015 Regional URBAN WATER
MANAGEMENT PLAN

NOTICE IS HEREBY GIVEN that on June 21, 2016 at 6:00 p.m. in the Council Chambers of the City Council of the City of Colton (City), 650 North La Cadena Drive, Colton, California, 92324, the City Council and Colton Utility Authority will conduct a public hearing pursuant to California Water Code sections 10642 and 10608.26 to consider and receive comments and input on the 2015 San Bernardino Valley Regional Urban Water Management Plan, to allow community input regarding the City's implementation plan for complying with Part 2.55 of the Water Code, to consider the potential economic impacts of the implementation plan, and to adopt a method pursuant to Water Code section 10608.20(b) for determining the City's urban water use targets. This document has been prepared under the direction of the City of Colton, the San Bernardino Valley Municipal Water District, East Valley Water District, the City of Loma Linda, the City of Redlands, Riverside Highland Water Company, the City of Rialto Municipal Water District, the City of San Bernardino, West Valley Water District, and Yucaipa Valley Water District.

A copy of the Draft 2015 San Bernardino Valley Regional Urban Water Management Plan will be available for public review on or before May 31, 2016, Monday through Thursday, during normal business hours at the Office of the City Clerk located at 650 North La Cadena Drive, Colton, California, 92324. In addition, an electronic version of the Draft 2015 UWMP will be accessible at www.coltonca.gov. In summary, the 2015 San Bernardino Valley Regional Urban Water Management Plan has been developed for implementation in accordance with the requirements of the California Urban Water Management Planning Act, Water Code sections 10610 through 10657, and the Water Conservation Act of 2009, Water Code sections 10608 through 10608.64. Public input from diverse social, cultural and economic elements of the population is encouraged and will be considered as part of the urban water management planning process. Input from and coordination with the County of



SBS-2890702#

SAN BERNARDINO COUNTY SUN

4030 N GEORGIA BLVD, SAN BERNARDINO, CA 92407
Telephone (909) 889-9666 / Fax (909) 885-1253

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Jessica Sutorus c/o City Clerk
CITY OF COLTON/CITY CLERK
650 N. LA CADENA DRIVE
COLTON, CA - 92324

SB #: 2890702

PROOF OF PUBLICATION

(2015.5 C.C.P.)

State of California)
County of SAN BERNARDINO) ss

Notice Type: HRGSB - NOTICE OF HEARING-SB

Ad Description:

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06/11/2016

Executed on: 06/13/2016
At Riverside, California

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Signature

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CITY OF COLTON
COLTON UTILITY AUTHORITY
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2015 Regional URBAN WATER MANAGEMENT PLAN

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6/11/16

SBS-2890702#

SAN BERNARDINO COUNTY SUN

4030 N GEORGIA BLVD, SAN BERNARDINO, CA 92407
Telephone (909) 889-9666 / Fax (909) 885-1253

This space for filing stamp only

Christopher Ellis
RIALTO CITY CLERK
290 W RIALTO AVE
RIALTO, CA - 92376

PROOF OF PUBLICATION

(2015.5 C.C.P.)

State of California)
County of SAN BERNARDINO) ss

Notice Type: GPN - GOVT PUBLIC NOTICE

Ad Description:

PH UWMP 2015

I am a citizen of the United States and a resident of the State of California; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer and publisher of the SAN BERNARDINO COUNTY SUN, a newspaper published in the English language in the city of SAN BERNARDINO, county of SAN BERNARDINO, and adjudged a newspaper of general circulation as defined by the laws of the State of California by the Superior Court of the County of SAN BERNARDINO, State of California, under date 06/27/1952, Case No. 73081. That the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

05/23/2016, 05/30/2016

Executed on: 05/31/2016
At Riverside, California

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Signature

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SB #: 2883619

NOTICE OF PUBLIC HEARING CITY OF RIALTO URBAN WATER MANAGEMENT PLAN 2015

The purpose of this report is to provide an Urban Water Management Plan (UWMP) for the City of Rialto (the City), as required by State Assembly Bill No. 797-Klehs. This UWMP includes a brief description of the City's water system, develops information on water use and current water conservation measures, describes water systems deficiencies, analyses future projections of water supply needs, as well as alternate conservation measures, and includes their implementation schedules. The Plan is an update to the 2010 UWMP prepared for the City of Rialto by City of Rialto Public Works Department.
The City staff has reviewed this Plan, and based on their recommendation, the UWMP will be adopted by the City Council following a Public Hearing where testimony will be taken and the Plan modified, if necessary. The UWMP then becomes the guideline for water conservation within the City"s water system, requiring upgrading at least every five (5) years.
The Plan will be available for public review from May 19' 2016 to June 14, 2016 at the following locations:
Rialto City Clerks Office
290 W. Rialto Avenue
Rialto Public Works Department
335 W. Rialto Avenue
Rialto Library
251 W. First Street

A Public Hearing to solicit public comment from interested citizens and other public agencies will be held on **June 14, 2016**, 6:00 p.m. at Rialto City Hall, located at 150 S. Palm Ave., Rialto.

The City of Rialto encourages citizen participation in the hearing process. If you are interested, please attend the June 14, 2016 hearing. If you are unable to attend the hearing, written comments will be accepted up to the date of the hearing. If you have any questions, please contact Robert Eisenbeisz, Public Works Director at (909) 421-7244.

Barbara A. McGee
City Clerk
5/23, 5/30/16

SBS-2883619#

AFFIDAVIT OF PUBLICATION

STATE OF CALIFORNIA,)
) ss.
County of San Bernardino)

I am a citizen of the United States and a resident of the State of California: I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the Grand Terrace City News, a newspaper that has been adjudged to be a newspaper of general circulation by the Superior Court of the County of San Bernardino, State of California, on July 25, 1996. Case No. SCV-30069 for the City of Grand Terrace, County of San Bernardino, State of California; that the notice of which the annexed is a true printed copy, has been published in each regular and extra issue, and not in any supplement there of, of said newspaper on the following dates, to wit:

6/9/2016

"I certify (or declare) under the penalty of perjury under the laws of the State of California that the foregoing is true and correct"
Executed at Grand Terrace, San Bernardino County, California, on

Date: 6/9/2016

Signature

City News Group, Inc.
22797 Barton Road
Grand Terrace, CA 92313
(909) 370-1200

PROOF OF PUBLICATION

Riverside Highland Water Company will hold a public hearing to adopt the 2015 Regional Urban Water Management Plan on Thursday, June 23, 2016, at 9:00 a.m. The hearing will be held at the corporate office located at 12374 Michigan Street, Grand Terrace, 92313. The Plan will be available for public review at our corporate office during normal office hours.

AFFIDAVIT OF PUBLICATION

STATE OF CALIFORNIA,)
) ss.
County of San Bernardino)

I am a citizen of the United States and a resident of the State of California: I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the Grand Terrace City News, a newspaper that has been adjudged to be a newspaper of general circulation by the Superior Court of the County of San Bernardino, State of California, on July 25, 1996. Case No. SCV-30069 for the City of Grand Terrace, County of San Bernardino, State of California; that the notice of which the annexed is a true printed copy, has been published in each regular and extra issue, and not in any supplement there of, of said newspaper on the following dates, to wit:

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2015 San Bernardino Valley RUWMP

Appendix D

RESOLUTION 1043

RESOLUTION OF THE BOARD OF DIRECTORS OF SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT ADOPTING THE 2015 SAN BERNARDINO VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN

WHEREAS, The California Urban Water Management Planning Act, Water Code Section 10610 et. seq. (the Act), mandates that every urban supplier of water providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan (Plan); and

WHEREAS, the Act requires that said Plan be updated and adopted at least once every five years on or before December 31, in years ending in five and zero; and

WHEREAS, San Bernardino Valley Municipal Water District (Valley District) is an urban water supplier for purposes of the Act; and

WHEREAS, under SBX7-7, an "urban retail water supplier" is defined as a water supplier that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes, and an "urban wholesale water supplier" is defined as a water supplier that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes; and

WHEREAS, Valley District meets the definition of an urban wholesale water supplier; and

WHEREAS, the 2015 San Bernardino Valley Regional Urban Water Management Plan has been prepared at the direction of San Bernardino Valley Municipal Water District, the City of Colton, East Valley Water District, the City of Loma Linda, the City of Redlands, the City of Rialto, the Riverside-Highland Water Company, the San Bernardino Municipal Water Department, West Valley Water District, and Yucaipa Valley Water District (hereafter "AGENCIES"); and

WHEREAS, as a participant in the 2015 San Bernardino Valley Regional Urban Water Management Plan, Valley District has prepared those portions of the plan applicable to Valley District in accordance with the Act and SBX7-7 and, in accordance with applicable legal requirements, has undertaken certain coordination, notice, public involvement, public comment, and other procedures in relation to its 2015 Plan; and

WHEREAS, as authorized by Water Code section 10620(e), AGENCIES have prepared the 2015 San Bernardino Valley Regional Urban Water Management Plan with staff from AGENCIES, with the assistance of consulting professionals, and in cooperation with other

governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its 2015 Plan, and has also utilized the California Department of Water Resources 2015 Urban Water Management Plans Guidebook for Urban Water Suppliers; and

WHEREAS, in accordance with applicable law, including Water Code sections 10608.26 and 10642, and Government Code section 6066, a Notice of a Public Hearing regarding Valley District adoption of the 2015 San Bernardino Valley Regional Urban Water Management Plan was published within the jurisdiction of Valley District on June 7 and June 14; and

WHEREAS, in accordance with applicable law, a public hearing was held on June 21, 2016 at 2:00 PM, or soon thereafter, in the boardroom of the offices of the Valley District, 380 East Vanderbilt Way, San Bernardino, California in order to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the 2015 Plan and issues related thereto; and

WHEREAS, pursuant to said public hearing on the 2015 San Bernardino Valley Regional Urban Water Management Plan, Valley District, among other things, encouraged the active involvement of diverse social, cultural, and economic elements of the population within Valley District's service area with regard to the preparation of the Plan; and

WHEREAS, the Board of Directors desires to adopt the 2015 San Bernardino Valley Regional Urban Water Management Plan in order to comply with the Act and SBX7-7.

NOW, THEREFORE, be it resolved by the Board of Directors of the San Bernardino Valley Municipal Water District as follows:

SECTION 1 The General Manager is hereby authorized and directed to include a copy of this Resolution in Valley District's 2015 Plan.

SECTION 2 The General Manager is hereby authorized and directed, in accordance with Water Code section 10644(a), to submit copies of the 2015 Plan to the California Department of Water Resources, the California State Library, and any city or county within which the Valley District provides water supplies no later than thirty (30) days after this adoption date.

SECTION 3 The General Manager is hereby authorized and directed, in accordance with Water Code Section 10645, to make the 2015 Plan available for public review during normal business hours no later than thirty (30) days after filing a copy of the Plan with the California Department of Water Resources.

SECTION 4 The General Manager is hereby authorized and directed, in accordance with Water Code Section 10645, to make the 2015 Plan available for public review

during normal business hours within 30 days of Plan submittal to the Department of Water Resources.

SECTION 5 The General Manager is hereby authorized and directed to implement the 2015 Plan in accordance with the Act and SBX7-7 and to provide recommendations to the Board of Directors regarding necessary budgets, procedures, rules, regulations or further actions to carry out the effective and equitable implementation of the 2015 Plan.

PASSED AND ADOPTED by the governing body of the San Bernardino Valley Municipal Water District this 21st day of June, 2016.

Mark Bulot, President

ATTEST:

Gil Navarro, Secretary

RESOLUTION 2016.14

RESOLUTION OF THE BOARD OF DIRECTORS OF EAST VALLEY WATER DISTRICT ADOPTING THE 2015 SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT REGIONAL URBAN WATER MANAGEMENT PLAN

WHEREAS, The California Urban Water Management Planning Act, Water Code Section 10610 et. seq. (the Act), mandates that every urban supplier of water providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan (Plan); and

WHEREAS, the Act requires that said Plan be updated and adopted once every five years on or before June 30, in years ending in five and zero; and

WHEREAS, East Valley Water District (DISTRICT) is an urban water supplier for purposes of the Act; and

WHEREAS, under SBX7-7, an "urban retail water supplier" is defined as a water supplier that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes, and an "urban wholesale water supplier" is defined as a water supplier that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes; and

WHEREAS, for purposes of its 2015 Plan, the DISTRICT meets the definition of an urban retail water supplier; and

WHEREAS, the 2015 San Bernardino Valley Regional Urban Water Management Plan (RUWMP) has been prepared at the direction of San Bernardino Valley Municipal Water District, the City of Colton, East Valley Water District, the City of Loma Linda, the City of Redlands, the City of Rialto, Riverside Highland Water Company the City of San Bernardino, West Valley Water District, and Yucaipa Valley Water District (hereafter "AGENCIES"; and

WHEREAS, as a participant in the 2015 RUWMP, the DISTRICT has prepared those portions of the plan applicable to the DISTRICT in accordance with the Act and SBX7-7 and, in accordance with applicable legal requirements, has undertaken certain coordination, notice, public involvement, public comment, and other procedures in relation to its 2015 Plan; and

WHEREAS, as authorized by Water Code section 10620(e), AGENCIES have prepared the 2015 RUWMP with staff from AGENCIES, with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in

preparing its 2015 Plan, and has also utilized the California Department of Water Resources Guidebook to Assist Urban Water Suppliers to Prepare a 2015 Plan; and

WHEREAS, in accordance with applicable law, including Water Code sections 10608.26 and 10642, and Government Code section 6066, a Notice of a Public Hearing regarding the DISTRICT adoption of the 2015 RUWMP was published within the jurisdiction of East Valley Water District on May 25, 2016 and June 1, 2016; and

WHEREAS, in accordance with applicable law, a public hearing was held on June 8, 2016 at 5:30 PM, in the boardroom of the offices of the DISTRICT, 31111 Greenspot Road, Highland, CA 92346 in order to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the 2015 Plan and issues related thereto; and

WHEREAS, pursuant to said public hearing on the 2015 RUWMP, DISTRICT among other things, encouraged the active involvement of diverse social, cultural, and economic elements of the population within the DISTRICT's service area with regard to the preparation of the Plan, allowed community input regarding DISTRICT's implementation plan for complying with SBX7-7, considered the economic impacts of DISTRICT implementation plan for complying with SBX7-7, and adopted Method 4 under Water Code section 10608.20(b) for determining its water use targets; and

WHEREAS, the Board of Directors desires to adopt the 2015 RUWMP in order to comply with the Act and SBX7-7.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of East Valley Water District as follows:

SECTION 1 The General Manager/CEO is hereby authorized and directed to include a copy of this Resolution in DISTRICT's 2015 Plan.

SECTION 2 The General Manager/CEO is hereby authorized and directed, in accordance with Water Code section 10644(a), to submit copies of the 2015 Plan to the California Department of Water Resources, the California State Library, and any city or county within which the DISTRICT provides water supplies no later than thirty (30) days after this adoption date.

SECTION 3 The General Manager/CEO is hereby authorized and directed, in accordance with Water Code Section 10645, to make the 2015 Plan available for public review during normal business hours no later than thirty (30) days after filing a copy of the Plan with the California Department of Water Resources.

SECTION 4 The General Manager/CEO is hereby authorized and directed, in accordance with Water Code Section 10635(b), to provide that portion of the 2015 Plan prepared pursuant to Water Code Section 10635(a) to any city or county within which the

East Valley Water District provides water supplies no later than sixty (60) days after submitting a copy of the Plan with the California Department of Water Resources.

SECTION 5 The General Manager/CEO is hereby authorized and directed to implement the 2015 Plan in accordance with the Act and SBX7-7 and to provide recommendations to the Board of Directors regarding necessary budgets, procedures, rules, regulations or further actions to carry out the effective and equitable implementation of the 2015 Plan.

ADOPTED this June 22nd, 2016.

Ayes: Directors: Carrillo, Coats, Morales, Shelton, Smith
Noes: None
Absent: None
Abstain: None

Ronald L. Coats
Board President

I HEREBY CERTIFY that the foregoing is a full, true and correct copy of Resolution 2016.14 adopted by the Board of Directors of East Valley Water District at its regular meeting held June 22, 2016.

John J. Mura
Secretary, Board of Directors

I, John J. Mura, do hereby certify that this is a true and correct copy of the record.

JOHN J. MURA, Secretary to the Board
East Valley Water District

RESOLUTION NO. 2896

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LOMA LINDA ADOPTING THE 2015 SAN BERNARDINO VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN

WHEREAS, The California Urban Water Management Planning Act, Water Code Section 10610 et. seq. (the Act), mandates that every urban supplier of water providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan (Plan); and

WHEREAS, the Act requires that said Plan be updated and adopted at least once every five years on or before December 31, in years ending in five and zero; and

WHEREAS, the City of Loma Linda ("CITY") is an urban water supplier for purposes of the Act; and

WHEREAS, pursuant to the Water Conservation Act of 2009, also referred to as SBX7-7 (Water Code section 10608 et seq.) and SB 1478 (amending Water Code section 10608.26), the time for urban retail water suppliers and urban wholesale water suppliers to adopt their 2015 Plans; and

WHEREAS, under SBX7-7, an "urban retail water supplier" is defined as a water supplier that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes, and an "urban wholesale water supplier" is defined as a water supplier that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes; and

WHEREAS, for purposes of its 2015 Plan, the CITY meets the definition of an urban retail water supplier; and

WHEREAS, the 2015 San Bernardino Valley Regional Urban Water Management Plan has been prepared at the direction of San Bernardino Valley Municipal Water District, the City of Colton, East Valley Water District, the City of Loma Linda, the City of Redlands, the City of San Bernardino, West Valley Water District, and Yucaipa Valley Water District (hereafter "AGENCIES"; and

WHEREAS, as a participant in the 2015 San Bernardino Valley Regional Urban Water Management Plan, the CITY has prepared those portions of the plan applicable to the CITY in accordance with the Act and SBX7-7 and, in accordance with applicable legal requirements, has undertaken certain coordination, notice, public involvement, public comment, and other procedures in relation to its 2015 Plan; and

WHEREAS, as authorized by Water Code section 10620(e), AGENCIES have prepared the 2015 San Bernardino Valley Regional Urban Water Management Plan with staff from AGENCIES, with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its 2015 Plan, and has also utilized the California Department

of Water Resources Guidebook to Assist Urban Water Suppliers to Prepare a 2015 Urban Water Management Plan (March 2011) and the California Department of Water Resources Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (For the Consistent Implementation of the Water Conservation Act of 2009) (February 2011) in preparing the 2010 San Bernardino Valley Regional Urban Water Management Plan; and

WHEREAS, in accordance with applicable law, including Water Code sections 10608.26 and 10642, and Government Code section 6066, a Notice of a Public Hearing regarding the CITY's adoption of the 2015 San Bernardino Valley Regional Urban Water Management Plan was published within the jurisdiction of CITY; and

WHEREAS, in accordance with applicable law, a public hearing was held on June 14, 2016 at 7:00 p.m. or soon thereafter, in the Council Chamber of the CITY, 25541 Barton Road, Loma Linda, CA 92354 in order to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the 2015 Plan and issues related thereto; and

WHEREAS, pursuant to said public hearing on the 2015 San Bernardino Valley Regional Urban Water Management Plan, CITY, among other things, encouraged the active involvement of diverse social, cultural, and economic elements of the population within CITY's service area with regard to the preparation of the Plan, allowed community input regarding CITY's implementation plan for complying with SBX7-7, considered the economic impacts of CITY's implementation plan for complying with SBX7-7, and adopted Method 1 under Water Code section 10608.20(b) for determining its water use targets; and

WHEREAS, the City Council desires to adopt the 2015 San Bernardino Valley Regional Urban Water Management Plan in order to comply with the Act and SBX7-7.

NOW, THEREFORE, be it resolved by the City Council of the City of Loma Linda as follows:

SECTION 1 The General Manager is hereby authorized and directed to include a copy of this Resolution in CITY's 2010 Plan.

SECTION 2 The General Manager is hereby authorized and directed, in accordance with Water Code section 10644(a), to submit copies of the 2015 Plan to the California Department of Water Resources, the California State Library, and any city or county within which the CITY provides water supplies no later than thirty (30) days after this adoption date.

SECTION 3 The General Manager is hereby authorized and directed, in accordance with Water Code Section 10645, to make the 2015 Plan available for public review during normal business hours no later than thirty (30) days after filing a copy of the Plan with the California Department of Water Resources.

SECTION 4 The General Manager is hereby authorized and directed, in accordance with Water Code Section 10635(b), to provide that portion of the 2015 Plan prepared pursuant to Water Code Section 10635(a) to any city or county within which the CITY provides water supplies no later than sixty (60) days after submitting a copy of the Plan with the California Department of Water Resources.

SECTION 5 The General Manager is hereby authorized and directed to implement the 2015 Plan in accordance with the Act and SBX7-7 and to provide recommendations to the Board of Directors regarding necessary budgets, procedures, rules, regulations or further actions to carry out the effective and equitable implementation of the 2015 Plan.

PASSED, APPROVED AND ADOPTED this 14th day of June 2016 by the following vote:

Ayes:	Rigsby, Dupper, Popescu, Dailey, Dupper
Noes:	None
Absent:	None
Abstain:	None

R L Rigsby

Rhodes Rigsby, Mayor

ATTEST:

Pamela Byrnes-O'Camb

Pamela Byrnes-O'Camb, City Clerk

RESOLUTION NO. 7645

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF REDLANDS ADOPTING THE 2015 SAN BERNARDINO VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN

WHEREAS, Section 10620 of the California Water Code require urban water suppliers to prepare and file with the Department of Water Resources an Urban Water Management Plan; and

WHEREAS, the City of Redlands recognizes the water supply of the City represents a limited renewable resource subject to increasing demands; that conservation and efficient use of urban water supplies are of statewide concern; and that planning for water use and conservation and the implementation of such plans is best accomplished at the local level; and

WHEREAS, it is in the best interests of Redlands' citizens to ensure that the highest quality of water is reasonably available to them for domestic use; and

WHEREAS, the City has developed its Urban Water Management Plan to achieve water conservation, efficient use of water and sustainable lifestyle consistent with Redlands' unique heritage and community goals; and

WHEREAS, a duly noticed public hearing has been held on the Urban Water Management Plan pursuant to Section 6066 of the California Government Code;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF REDLANDS as follows:

Section 1. That the document entitled "2015 San Bernardino Valley Regional Urban Water Management Plan" is hereby adopted and City staff is hereby directed to file a copy of the plan with the California Department of Water Resources on or before July 1, 2016.

Section 2. That the City of Redlands will implement the 2015 San Bernardino Valley Regional Urban Water Management Plan in accordance with the schedule set forth in the plan.

This resolution shall take effect on June 21, 2016.

ADOPTED, SIGNED AND APPROVED this 21st day of June, 2016.

Paul W. Foster, Mayor

ATTEST:

Sam Irwin, City Clerk

I, Sam Irwin, City Clerk of the City of Redlands, hereby certify that the foregoing Resolution was duly adopted by the City Council at a regular meeting thereof, held on the 21st day of June, 2016, by the following vote:

AYES: Councilmembers Harrison, Gilbreath, Barich, James; Mayor Foster
NOES: None
ABSTAIN: None
ABSENT: None

Sam Irwin, City Clerk

RESOLUTION NO. 884

A RESOLUTION OF THE BOARD OF WATER COMMISSIONERS, CITY OF SAN BERNARDINO ADOPTING THE 2015 SAN BERNARDINO VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Urban Water Management Planning Act, Water Code Section 10610 et. seq. (the Act), mandates that every urban supplier of water providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan (Plan); and

WHEREAS, the Act requires that said Plan be updated and adopted at least once every five years on or before December 31, in years ending in five and zero; and

WHEREAS, City of San Bernardino Municipal Water Department is an urban water supplier for purposes of the Act; and

WHEREAS, pursuant to the Water Conservation Act of 2009, also referred to as SBX7-7 (Water Code section 10608 et seq.) and SB 1478 (amending Water Code section 10608.26), the time for urban retail water suppliers and urban wholesale water suppliers to adopt their 2015 Plans was extended to July 1, 2016; and

WHEREAS, under SBX7-7, an "urban retail water supplier" is defined as a water supplier that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes, and an "urban wholesale water supplier" is defined as a water supplier that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes; and

WHEREAS, for purposes of its 2015 Plan, City of San Bernardino Municipal Water Department meets the definition of an urban retail water supplier; and

WHEREAS, the 2015 San Bernardino Valley Regional Urban Water Management Plan has been prepared at the direction of the City of San Bernardino Municipal Water Department, San Bernardino Valley Municipal Water District, the City of Colton, East Valley Water District, the City of Loma Linda, the City of Redlands, West Valley Water District, Yucaipa Valley Water

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District, the City of Rialto, and Riverside Highland Water Company (hereafter "AGENCIES"); and

WHEREAS, as a participant in the 2015 San Bernardino Valley Regional Urban Water Management Plan, City of San Bernardino Municipal Water Department has prepared those portions of the plan applicable to City of San Bernardino Municipal Water Department in accordance with the Act and SBX7-7 and, in accordance with applicable legal requirements, has undertaken certain coordination, notice, public involvement, public comment, and other procedures in relation to its 2015 Plan; and

WHEREAS, as authorized by Water Code section 10620(e), AGENCIES have prepared the 2015 San Bernardino Valley Regional Urban Water Management Plan with staff from AGENCIES, with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its 2015 Plan, and has also utilized the California Department of Water Resources Guidebook to Assist Urban Water Suppliers to Prepare a 2015 Urban Water Management Plan (March 2016) and the California Department of Water Resources Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (For the Consistent Implementation of the Water Conservation Act of 2009) (February 2016) in preparing the 2015 San Bernardino Valley Regional Urban Water Management Plan; and

WHEREAS, in accordance with applicable law, including Water Code sections 10608.26 and 10642, and Government Code section 6066, a Notice of a Public Hearing regarding City of San Bernardino Municipal Water Department adoption of the 2015 San Bernardino Valley Regional Urban Water Management Plan was published within the jurisdiction of City of San Bernardino Municipal Water Department on May 24, 2016 and May 31, 2016; and

WHEREAS, in accordance with applicable law, a public hearing was held on June 7, 2016 at 9:30 a.m., or soon thereafter, in the boardroom of the City of San Bernardino Municipal Water Department, 399 Chandler Place, San Bernardino, California 92408, in order to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the 2015 Plan and issues related thereto; and

WHEREAS, pursuant to said public hearing on the 2015 San Bernardino Valley Regional Urban Water Management Plan, City of San Bernardino Municipal Water Department, among other things, encouraged the active involvement of diverse social, cultural, and economic elements of the population within City of San Bernardino Municipal Water Department's service area with regard to the preparation of the Plan, allowed community input regarding City of San Bernardino Municipal Water Department's implementation plan for complying with SBX7-7, considered the economic impacts of City of San Bernardino Municipal Water Department's implementation plan for complying with SBX7-7, and adopted Method 4 under Water Code section 10608.20(b) for determining its water use targets; and

WHEREAS, the Board of Water Commissioners desires to adopt the 2015 San Bernardino Valley Regional Urban Water Management Plan in order to comply with the Act and SBX7-7.

NOW, THEREFORE, be it resolved by the Board of Water Commissioners of the City of San Bernardino Municipal Water Department as follows:

SECTION 1 The General Manager is hereby authorized and directed to include a copy of this Resolution in City of San Bernardino Municipal Water Department's 2015 Plan.

SECTION 2 The General Manager is hereby authorized and directed, in accordance with Water Code section 10644(a), to submit copies of the 2015 Plan to the California Department of Water Resources, the California State Library, and any city or county within which the City of San Bernardino Municipal Water Department provides water supplies no later than thirty (30) days after this adoption date.

SECTION 3 The General Manager is hereby authorized and directed, in accordance with Water Code section 10645, to make the 2015 Plan available for public review during normal business hours no later than thirty (30) days after filing a copy of the Plan with the California Department of Water Resources.

SECTION 4 The General Manager is hereby authorized and directed, in accordance with Water Code section 10635(b), to provide that portion of the 2015 Plan prepared pursuant to Water Code section 10635(a) to any city or county within which the City of San Bernardino Municipal

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Water Department provides water supplies no later than sixty (60) days after submitting a copy of the Plan with the California Department of Water Resources.

SECTION 5 The General Manager is hereby authorized and directed to implement the 2015 Plan in accordance with the Act and SBX7-7 and to provide recommendations to the Board of Water Commissioners regarding necessary budgets, procedures, rules, regulations or further actions to carry out the effective and equitable implementation of the 2015 Plan.

I HEREBY CERTIFY that the foregoing resolution was duly adopted by the Board of Water Commissioners of the City of San Bernardino at a regular meeting thereof held on the 7th of June, 2016 by the following vote, to-wit:

AYES: Commissioners Callicott, Fernández, Hendrix, Mlynarski

NAYS: _____

ABSENT: Commissioner Valles

Robin L. Ohama
Clerk & Ex-Officio Secretary

(SEAL)

RESOLUTION NO. 2016-6
RESOLUTION OF THE BOARD OF DIRECTORS OF THE WEST VALLEY WATER DISTRICT ADOPTING THE 2015 SAN BERNARDINO VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Legislature has enacted the Urban Water Management Plan Act, California Water Code Sections 10610 through 10656 requiring every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, Section 10621 (a) of the California Water Code requires an update of the Urban Water Management Plan at least once every five years on or before December 31, in years ending in five and zero but for the 2015 plan a 6-month extension has been granted for the submittal to provide additional time for water suppliers; and

WHEREAS, Section 10632 of the California Water Code requires preparation of an urban water shortage contingency analysis as part of the Urban Water Management Plan; and

WHEREAS, the West Valley Water District is an urban supplier of water providing water to more than 3,000 customers, and has, therefore prepared and circulated for public review its Draft Urban Water Management Plan in compliance with Chapter 3, Article 3 of the Urban Water Management Planning Act and a properly noticed public hearing on said draft plan was held by the District on June 2, 2016 in order to provide members of the public and other interested entities with the opportunity to be heard in connection with the proposed adoption of the Urban Water Management Plan and issues related thereto;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the West Valley Water District as follows:

1. The 2015 San Bernardino Valley Regional Urban Water Management Plan, presented at this meeting, is hereby approved and adopted;

2. The 2015 San Bernardino Valley Regional Urban Water Management Plan is ordered to be filed with the Cities of Rialto, Colton, Fontana, Jurupa Valley and the Counties of San Bernardino and Riverside no later than 30 days after adoption;

3. The General Manager is hereby authorized and directed to file this plan with the State Department of Water Resources and the California State Library no later than 30 days after adoption;

4. The General Manager is further directed to periodically review the 2015 San Bernardino Valley Regional Urban Water Management Plan in accordance with applicable law and recommend to the Board of Directors amendments to the plan as may be appropriate as a result of such review.

ADOPTED, SIGNED, AND APPROVED THIS 2ND DAY OF JUNE 2016.

AYES:	**DIRECTORS: Olinger, Dyer, Young, Gonzalez, Young, Sr.**
NOES:	**DIRECTORS: None**
ABSENT:	**DIRECTORS: None**
ABSTAIN:	**DIRECTORS: None**

Dr. Clifford O. Young, Sr.,
President of the Board of Directors
of West Valley Water District

ATTEST:

Shanae Smith
Board Secretary

RESOLUTION NO. 2016-17

A RESOLUTION OF THE YUCAIPA VALLEY WATER DISTRICT ADOPTING THE 2015 REGIONAL URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Urban Water Management Planning Act, Water Code Section 10610 et. seq. (the Act), mandates that every urban supplier of water providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan (Plan), the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, Section 10621(a) of the California Water Code requires an update of the Urban Water Management Plan at least once every five years; and

WHEREAS, Yucaipa Valley Water District is an urban water supplier for purposes of the Act and a properly noticed public hearing on said draft plan was held by the Yucaipa Valley Water District on June 15, 2016 in order to provide members of the public and other interested entities with the opportunity to be heard in connection with the proposed adoption of the Urban Water Management Plan and issues related thereto.

NOW, THEREFORE, BE IT HEREBY RESOLVED AND ORDERED, that the Board of Directors of the Yucaipa Valley Water District, as follows:

SECTION 1. The 2015 San Bernardino Valley Regional Urban Water Management Plan, presented at this meeting, is hereby approved and adopted;

SECTION 2. The 2015 San Bernardino Valley Regional Urban Water Management Plan is ordered to be filed with the City of Calimesa, City of Yucaipa, County of Riverside, and County of San Bernardino no later than 30 days after adoption;

SECTION 3. The General Manager is hereby authorized and directed to file with the State Department of Water Resources and the California State Library no later than 30 days after adoption;

SECTION 4. The General Manager is further directed to periodically review the 2015 San Bernardino Valley Regional Urban Water Management plan in accordance with applicable law and recommend to the Board of Directors amendments to the Plan as may be appropriate as a result of such review.

PASSED AND ADOPTED this 15th day of June 2016.

YUCAIPA VALLEY WATER DISTRICT

/s/ Lonni Granlund

Lonni Granlund, President Board of Directors

ATTEST:

Joseph B. Zoba, General Manager

STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
AND SAN BERNARDINO

I, Joseph B. Zoba, Secretary of the Board of Directors of the Yucaipa Valley Water District, California, do hereby certify that the foregoing resolution being Resolution No. 2016-17 was duly passed, approved and adopted by said Board, approved on the 15th day of June 2016, and that the same was passed and adopted by the following vote:

AYES: Director Jay Bogh
Director Lonni Granlund
Director Ken Munoz
Director Tom Shalhoub

NOES: None

ABSTAIN: None

ABSENT: Director Bruce Granlund

Joseph B. Zoba, Secretary of the Yucaipa Valley Water District and of the Board of Directors

(Seal)

RESOLUTION NO. R-60-16

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF COLTON ADOPTING THE 2015 SAN BERNARDINO VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN.

WHEREAS, the California Urban Water Management Planning Act, Water Code Section 10610 et. seq. (the Act), mandates that every urban supplier of water providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan (Plan); and,

WHEREAS, the Act requires that said Plan be updated and adopted at least once every five years on or before December 31, in years ending in five and zero; and,

WHEREAS, the City of Colton is an urban water supplier for purposes of the Act; and,

WHEREAS, under SBX7-7, an "urban retail water supplier" is defined as a water supplier that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes, and an "urban wholesale water supplier" is defined as a water supplier that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes; and,

WHEREAS, for purposes of its 2015 Plan, the City of Colton meets the definition of an urban retail water supplier; and,

WHEREAS, the 2015 San Bernardino Valley Regional Urban Water Management Plan has been prepared at the direction of San Bernardino Valley Municipal Water District, the City of Colton, East Valley Water District, the City of Loma Linda, the City of Redlands, the City of San Bernardino, West Valley Water District, and Yucaipa Valley Water District (hereafter "AGENCIES"); and,

WHEREAS, as a participant in the 2015 San Bernardino Valley Regional Urban Water

Management Plan, the City of Colton has prepared those portions of the plan applicable to the City of Colton in accordance with the Act and SBX7-7 and, in accordance with applicable legal requirements, has undertaken certain coordination, notice, public involvement, public comment, and other procedures in relation to its 2015 Plan; and,

WHEREAS, as authorized by Water Code section 10620(e), AGENCIES have prepared the 2015 San Bernardino Valley Regional Urban Water Management Plan with staff from AGENCIES, with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its 2015 Plan, and has also utilized the California Department of Water Resources Guidebook to Assist Urban Water Suppliers to Prepare a 2015 Urban Water Management Plan and the California Department of Water Resources Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (For the Consistent Implementation of the Water Conservation Act of 2009) (February 2011) in preparing the 2015 San Bernardino Valley Regional Urban Water Management Plan; and,

WHEREAS, in accordance with applicable law, including Water Code sections 10608.26 and 10642, and Government Code section 6066, a Notice of a Public Hearing regarding City of Colton adoption of the 2015 San Bernardino Valley Regional Urban Water Management Plan was published within the jurisdiction of City of Colton on June 06, 2016; and,

WHEREAS, in accordance with applicable law, a public hearing was held on June 21, 2016 at 6:00 PM, or soon thereafter, in the City Council Chambers of the City of Colton, 650 North La Cadena Dr., Colton, CA, 92324 in order to provide members of the public and other interested entities with the opportunity to be heard in connection with proposed adoption of the 2015 Plan and issues related thereto; and,

WHEREAS, pursuant to said public hearing on the 2015 San Bernardino Valley Regional Urban Water Management Plan, the City of Colton, among other things, encouraged the active involvement of diverse social, cultural, and economic elements of the population within City of Colton's service area with regard to the preparation of the Plan, allowed community input regarding City of Colton's implementation plan for complying with SBX7-7, considered the economic impacts of City of Colton's implementation plan for complying with SBX7-7, and adopted Method 1 under Water Code section 10608.20(b) for determining its water use targets; and,

WHEREAS, the City Council desires to adopt the 2015 San Bernardino Valley Regional Urban Water Management Plan in order to comply with the Act and SBX7-7.

NOW, THEREFORE, the City Council of the City of Colton, State of California does hereby resolve as follows:

SECTION 1 The Utility Director is hereby authorized and directed to include a copy of this Resolution in City of Colton's 2015 Plan.

SECTION 2 The Utility Director is hereby authorized and directed, in accordance with Water Code section 10644(a), to submit copies of the 2015 Plan to the California Department of Water Resources, the California State Library, and any city or county within which the City of Colton provides water supplies no later than thirty (30) days after this adoption date.

SECTION 3 The Utility Director is hereby authorized and directed, in accordance with Water Code Section 10645, to make the 2015 Plan available for public review during normal business hours no later than thirty (30) days after filing a copy of the Plan with the California Department of Water Resources.

SECTION 4 The Utility Director is hereby authorized and directed, in accordance with Water Code Section 10635(b), to provide that portion of the 2015 Plan prepared pursuant to Water Code Section 10635(a) to any city or county within which the City of Colton provides water supplies no later than sixty (60) days after submitting a copy of the Plan with the California Department of Water Resources.

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SECTION 5 The Utility Director is hereby authorized and directed to implement the 2015 Plan in accordance with the Act and SBX7-7 and to provide recommendations to the City Council regarding necessary budgets, procedures, rules, regulations or further actions to carry out the effective and equitable implementation of the 2015 Plan.

PASSED, APPROVED AND ADOPTED this 21st day of June 2016.

RICHARD A. DELAROSA
Mayor

ATTEST:

CAROLINA R. PADILLA
City Clerk

STATE OF CALIFORNIA)
COUNTY OF SAN BERNARDINO) **ss**
CITY OF COLTON)

CERTIFICATION

I, CAROLINA R. PADILLA, City Clerk of the City of Colton, California, do hereby certify that the foregoing is a full, true and correct copy of **RESOLUTION NO. R-60-16**, duly adopted by the City Council of said City, and approved by the Mayor of said City, at its Regular Meeting of said City Council held on the **21st day of June, 2016**, and that it was adopted by the following vote, to wit:

AYES:	COUNCILMEMBER	Toro, Jorrin, Navarro, González, Bennett, Suchil and Mayor DeLaRosa
NOES:	COUNCILMEMBER	None
ABSTAIN:	COUNCILMEMBER	None
ABSENT:	COUNCILMEMBER	None

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of Colton, California, this _____ day of _____, 20___.

_____
CAROLINA R. PADILLA
City Clerk
City of Colton

(SEAL)

RESOLUTION NO. 6961

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RIALTO, CALIFORNIA, ADOPTING THE 2015 REGIONAL URBAN WATER MANAGEMENT PLAN.

WHEREAS, the California Urban Water Management Planning Act (Water Code sections 10610 et seq.; the "Act") mandates that every urban water supplier providing municipal water, directly or indirectly, to more than 3,000 consumers or supplying more than 3,000 acre-feet of water quality annually prepare and adopt an Urban Water Management Plan every five years, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the Act mandates that said Plan be filed with the California Department of Water Resources before December 31st for years ending in 5 or 0; and

WHEREAS, the Assembly Bill 2067 extended the deadline for the 2015 Urban Water Management Plan to July 1, 2016; and

WHEREAS, the City of Rialto is an urban supplier of water to more than 12,000 consumers;

WHEREAS, the Rialto Utility Authority is a participating member agency within the San Bernardino Valley Municipal Water District developing a Regional Urban Water Management Plan that include a regional plan with a dedicated chapter for Rialto's specific plan to provide reliable water supply;

WHEREAS, on June 14, 2016, the City Council of the City of Rialto, after conducting a duly-noticed public hearing, heard testimony and considered documentary evidence on the adoption of the 2015 Regional Urban Water Management Plan proposed with this Resolution.

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NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF RIALTO DOES HEREBY FIND, DETERMINE, AND RESOLVE AS FOLLOWS:

Section 1: That the City of Rialto hereby adopts the 2015 Regional Urban Water Management Plan as submitted to the City Council concurrently with its adoption of this Resolution.

Section 2. That the City Clerk of the City of Rialto shall certify to the adoption of this Resolution.

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WHEREFORE, this Resolution is passed, approved and adopted this 14th day of June, 2016.

DEBORAH ROBERTSON, Mayor

ATTEST:

BARBARA A. McGEE, City Clerk

APPROVED AS TO FORM:

FRED GALANTE, Esq., City Attorney

(Original printed on acid-free paper)

STATE OF CALIFORNIA)
COUNTY OF SAN BERNARDINO) ss
CITY OF RIALTO)

I, Barbara A. McGee, City Clerk of the City of Rialto, do hereby certify that the foregoing Resolution No. **6961** was duly passed and adopted at a regular meeting of the City Council of the City of Rialto held on the 14th day of June, 2016.

Upon motion of Councilmember Scott, seconded by Councilmember Baca Jr., the foregoing Resolution No. **6961** was duly passed and adopted.

Vote on the motion:

AYES: Mayor Robertson, Councilmembers: Baca Jr., Scott

NOES: None

ABSENT: Councilmember Palmer

IN WITNESS WHEREOF, I have hereunto set my hand and the Official Seal of the City of Rialto this 28th day of June, 2016.

Barbara A McGee

BARBARA A. MCGEE, CITY CLERK

RESOLUTION NO. 2016-1
RESOLUTION OF THE BOARD OF DIRECTORS OF RIVERSIDE HIGHLAND WATER COMPANY ADOPTING THE 2015 SAN BERNARDINO VALLEY REGIONAL URBAN WATER MANAGEMENT PLAN

WHEREAS, the California Legislature has enacted the Urban Water Management Plan Act, California Water Code Sections 10610 through 10656 requiring every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, Section 10621 (a) of the California Water Code requires an update of the Urban Water Management Plan at least once every five years on or before December 31, in years ending in five or zero but for the 2015 plan a 6-month extension has been granted for the submittal to provide additional time for water suppliers; and

WHEREAS, Section 10632 of the California Water Code requires preparation of an urban water shortage contingency analysis as part of the Urban Water Management Plan; and

WHEREAS, Riverside Highland Water Company is an urban supplier of water providing water to more than 3,000 customers and has, therefore prepared and circulated for public review its Draft Urban Water Management Plan in compliance with Chapter 3, Article 3 of the Urban Water Management Planning Act and a properly noticed public hearing on said draft plan was held by the Company on June 23, 2016 in order to provide members of the public and other interested entities with the opportunity to be heard in connection with the proposed adoption of the Urban Water Management Plan and issues related thereto;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of Riverside Highland Water Company as follows:

1. The 2015 San Bernardino Valley Regional Urban Water Management Plan, presented at this meeting, is hereby approved and adopted;

2. The 2015 San Bernardino Valley Regional Urban Water Management Plan is ordered to be filed with the City of Grand Terrace and the Counties of San Bernardino and Riverside no later than 30 days after adoption;

3. The General Manager is hereby authorized and directed to file this plan with the State Department of Water Resources and the California State Library no later than 30 days after adoption;

4. The General Manager is further directed to periodically review the 2015 San Bernardino Valley Regional Urban Water Management Plan in accordance with applicable law and recommend to the Board of Directors amendments to the plan as may be appropriate as a result of such review.

ADOPTED, SIGNED AND APPROVED THIS 23RD DAY OF JUNE 2016.

AYES:	**DIRECTORS:**	8
NOES:	**DIRECTORS:**	Ø
ABSENT:	**DIRECTORS:**	1
ABSTAIN:	**DIRECTORS:**	Ø

Mr. William McKeever
Board President
Riverside Highland Water Co.

ATTEST:

Mr. James McNaboe
Board Secretary
Riverside Highland Water Co.

2015 San Bernardino Valley RUWMP

Appendix E

WUEdata - East Valley Water District

Sign Out

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Confirmation Information

Generated By	Water Supplier Name	Confirmation #	Generated On
Alec Vowels	East Valley Water District	6105451285	4/11/2016 3:30:01 PM

Boundary Information

Census Year	Boundary Filename	Internal Boundary ID
1990	Service Area Pre 2010.kml	523
2000	Service Area Pre 2010.kml	523
2010	EVWD04112016.kml	1002
1990	Service Area Pre 2010.kml	523
2000	Service Area Pre 2010.kml	523
2010	EVWD04112016.kml	1002

Baseline Period Ranges

10 to 15-year baseline period

Number of years in baseline period: 10

Year beginning baseline period range: 1999

Year ending baseline period range[1]: 2008

5-year baseline period

Year beginning baseline period range: 2004

Year ending baseline period range[2]: 2008

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

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

Persons per Connection

Year	Census Block Level Total Population	Number of Connections *	Persons per Connection
1990	74,528		5.08
1991	-	-	5.08
1992	-	-	5.07
1993	-	-	5.06
1994	-	-	5.06
1995	-	-	5.05
1996	-	-	5.04
1997	-	-	5.04
1998	-	-	5.03
1999	-	-	5.02
2000	84,764	16899	5.02
2001	-	-	5.01
2002	-	-	5.01
2003	-	-	5.00
2004	-	-	4.99
2005	-	-	4.98
2006	-	-	4.98
2007	-	-	4.97
2008	-	-	4.96
2009	-	-	4.96
2010	99,654	20137	4.95
2015	-	-	4.91 **

Population Using Persons-Per-Connection

Year		Number of Connections *	Persons per Connection	Total Population
10 to 15 Year Baseline Population Calculations				
Year 1	1999	17203	5.02	86,404
Year 2	2000	16899	5.02	84,764
Year 3	2001	16899	5.01	84,715
Year 4	2002	17636	5.01	88,286
Year 5	2003	18946	5.00	94,711
Year 6	2004	19615	4.99	97,918
Year 7	2005	19893	4.98	99,167
Year 8	2006	20170	4.98	100,406
Year 9	2007	21036	4.97	104,570
Year 10	2008	19949	4.96	99,027
5 Year Baseline Population Calculations				
Year 1	2004	19615	4.99	97,918
Year 2	2005	19893	4.98	99,167
Year 3	2006	20170	4.98	100,406
Year 4	2007	21036	4.97	104,570
Year 5	2008	19949	4.96	99,027
2015 Compliance Year Population Calculations				
2015		21263	4.91 **	104,457

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WUEdata - Loma Linda City Of

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Confirmation Information

Generated By	Water Supplier Name	Confirmation #	Generated On
Alec Vowels	Loma Linda City Of	2900464713	5/26/2016 12:31:36 PM

Boundary Information

Census Year	Boundary Filename	Internal Boundary ID
1990	Loma Linda City.kml	680
2000	Loma Linda City.kml	680
2010	Loma Linda City.kml	680

Baseline Period Ranges

10 to 15-year baseline period

Number of years in baseline period: 10

Year beginning baseline period range: 1999

Year ending baseline period range[1]: **2008**

5-year baseline period

Year beginning baseline period range: 2004

Year ending baseline period range[2]: **2008**

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

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

Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

	Census Block Group Level	Census Block Level						
Year	% Population in SF Housing	Service Area Population	Population in SF Housing (calculated)	Population in MF/GQ Housing (calculated)	# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection
1990	**58.42%**	**18,992**	**11,095**	**7,897**			**3.01**	**25.52**
1991	-	-	-	-	-	-	3.01	25.52
1992	-	-	-	-	-	-	3.01	25.52
1993	-	-	-	-	-	-	3.01	25.52
1994	-	-	-	-	-	-	3.01	25.52
1995	-	-	-	-	-	-	3.01	25.52
1996	-	-	-	-	-	-	3.01	25.52
1997	-	-	-	-	-	-	3.01	25.52
1998	-	-	-	-	-	-	3.01	25.52
1999	-	-	-	-	-	-	3.01	25.52
2000	**57.34%**	**19,188**	**11,003**	**8,185**			**3.01**	**25.52**
2001	-	-	-	-	-	-	3.01	25.52
2002	-	-	-	-	-	-	3.01	25.52
2003	-	-	-	-	-	-	3.01	25.52
2004	-	-	-	-	-	-	3.01	25.52
2005	-	-	-	-	-	-	3.01	25.52
2006	-	-	-	-	-	-	3.01	25.52
2007	-	-	-	-	-	-	3.01	25.52
2008	-	-	-	-	-	-	3.01	25.52
2009	-	-	-	-	-	-	3.01	25.52
2010	**57.76%**	**23,379**	**13,503**	**9,876**	**4480**	**387**	**3.01**	**25.52**
2015	**-**	**-**	**-**	**-**	**-**	**-**	**3.01 ***	**25.52 ***

Population Using Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

Year		# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection	SF Population	MF/GQ Population	Total Population
10 to 15 Year Baseline Population Calculations								
Year 1	1999			3.01	25.52			
Year 2	2000			3.01	25.52			
Year 3	2001			3.01	25.52			
Year 4	2002			3.01	25.52			
Year 5	2003			3.01	25.52			
Year 6	2004			3.01	25.52			
Year 7	2005			3.01	25.52			
Year 8	2006			3.01	25.52			
Year 9	2007			3.01	25.52			
Year 10	2008			3.01	25.52			
5 Year Baseline Population Calculations								
Year 1	2004			3.01	25.52			
Year 2	2005			3.01	25.52			
Year 3	2006			3.01	25.52			
Year 4	2007			3.01	25.52			
Year 5	2008			3.01	25.52			
2015 Compliance Year Population Calculations								
2015		**4470**	**385**	3.01 *	25.52 *	**13,473**	**9,825**	**23,298**

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WUEdata - Redlands City Of

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Confirmation Information

Generated By	Water Supplier Name	Confirmation #	Generated On
Alec Vowels	Redlands City Of	1972394645	3/22/2016 1:45:06 PM

Boundary Information

Census Year	Boundary Filename	Internal Boundary ID
1990	Redlands City.kml	683
2000	Redlands City.kml	683
2010	Redlands City.kml	683

Baseline Period Ranges

10 to 15-year baseline period

Number of years in baseline period: 10

Year beginning baseline period range: 1998

Year ending baseline period range[1]: 2007

5-year baseline period

Year beginning baseline period range: 2003

Year ending baseline period range[2]: 2007

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

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

Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

	Census Block Group Level	Census Block Level						
Year	% Population in SF Housing	Service Area Population	Population in SF Housing (calculated)	Population in MF/GQ Housing (calculated)	# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection
1990	73.14%	68,069	49,783	18,286			2.84	21.92
1991	-	-	-	-	-	-	2.84	21.92
1992	-	-	-	-	-	-	2.84	21.92
1993	-	-	-	-	-	-	2.84	21.92
1994	-	-	-	-	-	-	2.84	21.92
1995	-	-	-	-	-	-	2.84	21.92
1996	-	-	-	-	-	-	2.84	21.92
1997	-	-	-	-	-	-	2.84	21.92
1998	-	-	-	-	-	-	2.84	21.92
1999	-	-	-	-	-	-	2.84	21.92
2000	73.11%	70,678	51,674	19,004			2.84	21.92
2001	-	-	-	-	-	-	2.84	21.92
2002	-	-	-	-	-	-	2.84	21.92
2003	-	-	-	-	-	-	2.84	21.92
2004	-	-	-	-	-	-	2.84	21.92
2005	-	-	-	-	-	-	2.84	21.92
2006	-	-	-	-	-	-	2.84	21.92
2007	-	-	-	-	-	-	2.84	21.92
2008	-	-	-	-	-	-	2.84	21.92
2009	-	-	-	-	-	-	2.84	21.92
2010	72.55%	76,426	55,444	20,982	19527	957	2.84	21.92
2015	-	-	-	-	-	-	2.84 *	21.92 *

Population Using Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

Year		# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection	SF Population	MF/GQ Population	Total Population
10 to 15 Year Baseline Population Calculations								
Year 1	1998			2.84	21.92			
Year 2	1999			2.84	21.92			
Year 3	2000			2.84	21.92			
Year 4	2001			2.84	21.92			
Year 5	2002			2.84	21.92			
Year 6	2003			2.84	21.92			
Year 7	2004			2.84	21.92			
Year 8	2005			2.84	21.92			
Year 9	2006			2.84	21.92			
Year 10	2007			2.84	21.92			
5 Year Baseline Population Calculations								
Year 1	2003			2.84	21.92			
Year 2	2004			2.84	21.92			
Year 3	2005			2.84	21.92			
Year 4	2006			2.84	21.92			
Year 5	2007			2.84	21.92			
2015 Compliance Year Population Calculations								
2015		**20996**	**1061**	2.84 *	21.92 *	**59,615**	**23,262**	**82,877**

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QUESTIONS / ISSUES? CONTACT THE WUEDATA HELP DESK

WUEdata - San Bernardino City Of

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Confirmation Information

Generated By	Water Supplier Name	Confirmation #	Generated On
Alec Vowels	San Bernardino City Of	9662961661	3/15/2016 12:26:39 PM

Boundary Information

Census Year	Boundary Filename	Internal Boundary ID
1990	San Bernardino City.kml	684
2000	San Bernardino City.kml	684
2010	San Bernardino City.kml	684
1990	San Bernardino City.kml	684
2000	San Bernardino City.kml	684
2010	San Bernardino City.kml	684

Baseline Period Ranges

10 to 15-year baseline period

Number of years in baseline period: 10

Year beginning baseline period range: 1999

Year ending baseline period range[1]: 2008

5-year baseline period

Year beginning baseline period range: 2003

Year ending baseline period range[2]: 2007

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

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

Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

	Census Block Group Level			Census Block Level						
Year	Population in SF Housing	Total Population	% Population in SF Housing	Service Area Population	Population in SF Housing (calculated)	Population in MF/GQ Housing (calculated)	# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection
1990	103,316	150,202	68.78%	151,071	103,914	47,157			3.22	12.75
1991	-	-	-	-	-	-	-	-	3.25	13.00
1992	-	-	-	-	-	-	-	-	3.29	13.25
1993	-	-	-	-	-	-	-	-	3.32	13.50
1994	-	-	-	-	-	-	-	-	3.35	13.74
1995	-	-	-	-	-	-	-	-	3.39	13.99
1996	-	-	-	-	-	-	-	-	3.42	14.24
1997	-	-	-	-	-	-	-	-	3.46	14.49
1998	-	-	-	-	-	-	-	-	3.49	14.74
1999	-	-	-	-	-	-	-	-	3.52	14.98
2000	118,810	163,579	72.63%	165,347	120,094	45,253	33757	2971	3.56	15.23
2001	-	-	-	-	-	-	-	-	3.59	15.48
2002	-	-	-	-	-	-	-	-	3.63	15.73
2003	-	-	-	-	-	-	-	-	3.66	15.97
2004	-	-	-	-	-	-	-	-	3.70	16.22
2005	-	-	-	-	-	-	-	-	3.73	16.47
2006	-	-	-	-	-	-	-	-	3.76	16.72
2007	-	-	-	-	-	-	-	-	3.80	16.97
2008	-	-	-	-	-	-	-	-	3.83	17.21
2009	-	-	-	-	-	-	-	-	3.87	17.46
2010	138,207	189,234	73.03%	186,066	135,893	50,173	34886	2833	3.90	17.71
2015	-	-	-	-	-	-	-	-	4.06 *	18.95 *

Population Using Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

Year		# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection	SF Population	MF/GQ Population	Total Population
10 to 15 Year Baseline Population Calculations								
Year 1	1999			3.52	14.98			
Year 2	2000	33757	2971	3.56	15.23	120,094	45,253	165,347
Year 3	2001	34123	2965	3.59	15.48	122,638	45,892	168,530
Year 4	2002	33610	2849	3.63	15.73	121,937	44,803	166,740
Year 5	2003	33745	2905	3.66	15.97	123,574	46,404	169,979
Year 6	2004	34389	2926	3.70	16.22	127,102	47,466	174,567
Year 7	2005	34697	2927	3.73	16.47	129,420	48,208	177,628
Year 8	2006	35853	2952	3.76	16.72	134,951	49,352	184,302
Year 9	2007	35360	2927	3.80	16.97	134,297	49,659	183,957
Year 10	2008	35172	2856	3.83	17.21	134,779	49,163	183,942
5 Year Baseline Population Calculations								
Year 1	2003	33745	2905	3.66	15.97	123,574	46,404	169,979
Year 2	2004	34389	2926	3.70	16.22	127,102	47,466	174,567
Year 3	2005	34697	2927	3.73	16.47	129,420	48,208	177,628
Year 4	2006	35853	2952	3.76	16.72	134,951	49,352	184,302
Year 5	2007	35360	2927	3.80	16.97	134,297	49,659	183,957
2015 Compliance Year Population Calculations								
2015		35812	2862	4.06 *	18.95 *	145,421	54,236	199,657

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WUEdata - West Valley County Water District

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Confirmation Information

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Alec Vowels	West Valley County Water District	4815656363	6/24/2016 3:28:24 PM

Boundary Information

Census Year	Boundary Filename	Internal Boundary ID
1990	ServiceArea_WVWD.kml	1087
2000	ServiceArea_WVWD.kml	1087
2010	ServiceArea_WVWD.kml	1087

Baseline Period Ranges

10 to 15-year baseline period

Number of years in baseline period: 10

Year beginning baseline period range: 2000

Year ending baseline period range[1]: 2009

5-year baseline period

Year beginning baseline period range: 2004

Year ending baseline period range[2]: 2008

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

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

Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

	Census Block Group Level	Census Block Level						
Year	% Population in SF Housing	Service Area Population	Population in SF Housing (calculated)	Population in MF/GQ Housing (calculated)	# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection
1990	**89.06%**	**45,284**	**40,332**	**4,952**			**3.82**	**42.16**
1991	-	-	-	-	-	-	3.82	42.16
1992	-	-	-	-	-	-	3.82	42.16
1993	-	-	-	-	-	-	3.82	42.16
1994	-	-	-	-	-	-	3.82	42.16
1995	-	-	-	-	-	-	3.82	42.16
1996	-	-	-	-	-	-	3.82	42.16
1997	-	-	-	-	-	-	3.82	42.16
1998	-	-	-	-	-	-	3.82	42.16
1999	-	-	-	-	-	-	3.82	42.16
2000	**89.12%**	**59,957**	**53,432**	**6,525**			**3.82**	**42.16**
2001	-	-	-	-	-	-	3.82	42.16
2002	-	-	-	-	-	-	3.82	42.16
2003	-	-	-	-	-	-	3.82	42.16
2004	-	-	-	-	-	-	3.82	42.16
2005	-	-	-	-	-	-	3.82	42.16
2006	-	-	-	-	-	-	3.82	42.16
2007	-	-	-	-	-	-	3.82	42.16
2008	-	-	-	-	-	-	3.82	42.16
2009	-	-	-	-	-	-	3.82	42.16
2010	**91.01%**	**73,628**	**67,009**	**6,619**	**17552**	**157**	**3.82**	**42.16**
2015	**-**	**-**	**-**	**-**	**-**	**-**	**3.82 ***	**42.16 ***

Population Using Persons-Per-SF Connection and Persons-Per-MF/GQ Connection

Year		# SF Connections	# MF/GQ Connections	Persons per SF Connection	Persons per MF/GQ Connection	SF Population	MF/GQ Population	Total Population
10 to 15 Year Baseline Population Calculations								
Year 1	2000			3.82	42.16			
Year 2	2001			3.82	42.16			
Year 3	2002			3.82	42.16			
Year 4	2003			3.82	42.16			
Year 5	2004			3.82	42.16			
Year 6	2005			3.82	42.16			
Year 7	2006			3.82	42.16			
Year 8	2007			3.82	42.16			
Year 9	2008			3.82	42.16			
Year 10	2009			3.82	42.16			
5 Year Baseline Population Calculations								
Year 1	2004			3.82	42.16			
Year 2	2005			3.82	42.16			
Year 3	2006			3.82	42.16			
Year 4	2007			3.82	42.16			
Year 5	2008			3.82	42.16			
2015 Compliance Year Population Calculations								
2015				3.82 *	42.16 *			

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WUEdata - Colton City Of

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Generated By	Water Supplier Name	Confirmation #	Generated On
Alec Vowels	Colton City Of	5847684562	6/27/2016 9:24:30 AM

Boundary Information

Census Year	Boundary Filename	Internal Boundary ID
1990	Colton City.kml	456
2000	Colton City.kml	456
2010	Colton City.kml	456

Baseline Period Ranges

10 to 15-year baseline period

Number of years in baseline period: 10

Year beginning baseline period range: 1999

Year ending baseline period range[1]: 2008

5-year baseline period

Year beginning baseline period range: 2003

Year ending baseline period range[2]: 2007

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

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

Persons per Connection

Year	Census Block Level Total Population	Number of Connections *	Persons per Connection
1990	33,873		5.17
1991	-	-	5.17
1992	-	-	5.17
1993	-	-	5.17
1994	-	-	5.17
1995	-	-	5.17
1996	-	-	5.17
1997	-	-	5.17
1998	-	-	5.17
1999	-	-	5.17
2000	40,629		5.17
2001	-	-	5.17
2002	-	-	5.17
2003	-	-	5.17
2004	-	-	5.17
2005	-	-	5.17
2006	-	-	5.17
2007	-	-	5.17
2008	-	-	5.17
2009	-	-	5.17
2010	44,711	8652	5.17
2015	-	-	5.17 **

Population Using Persons-Per-Connection

Year		Number of Connections *	Persons per Connection	Total Population
10 to 15 Year Baseline Population Calculations				
Year 1	1999		5.17	
Year 2	2000		5.17	
Year 3	2001		5.17	
Year 4	2002		5.17	
Year 5	2003		5.17	
Year 6	2004		5.17	
Year 7	2005		5.17	
Year 8	2006		5.17	
Year 9	2007		5.17	
Year 10	2008		5.17	
5 Year Baseline Population Calculations				
Year 1	2003		5.17	
Year 2	2004		5.17	
Year 3	2005		5.17	
Year 4	2006		5.17	
Year 5	2007		5.17	
2015 Compliance Year Population Calculations				
2015		8804	5.17 **	**45,496**

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WUEdata - Rialto City Of

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Confirmation Information

Generated By	Water Supplier Name	Confirmation #	Generated On
Alec Vowels	Rialto City Of	1091840445	6/27/2016 10:30:39 AM

Boundary Information

Census Year	Boundary Filename	Internal Boundary ID
1990	Rialto City.kml	681
2000	Rialto City.kml	681
2010	Rialto City.kml	681

Baseline Period Ranges

10 to 15-year baseline period

Number of years in baseline period:	10
Year beginning baseline period range:	1998
Year ending baseline period range[1]:	2007

5-year baseline period

Year beginning baseline period range:	2003
Year ending baseline period range[2]:	2007

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

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

Persons per Connection

Year	Census Block Level Total Population	Number of Connections *	Persons per Connection
1990	43,573		4.55
1991	-	-	4.55
1992	-	-	4.55
1993	-	-	4.55
1994	-	-	4.55
1995	-	-	4.55
1996	-	-	4.55
1997	-	-	4.55
1998	-	-	4.55
1999	-	-	4.55
2000	50,267		4.55
2001	-	-	4.55
2002	-	-	4.55
2003	-	-	4.55
2004	-	-	4.55
2005	-	-	4.55
2006	-	-	4.55
2007	-	-	4.55
2008	-	-	4.55
2009	-	-	4.55
2010	54,389	11942	4.55
2015	-	-	4.55 **

Population Using Persons-Per-Connection

Year		Number of Connections *	Persons per Connection	Total Population
10 to 15 Year Baseline Population Calculations				
Year 1	1998		4.55	
Year 2	1999		4.55	
Year 3	2000		4.55	
Year 4	2001		4.55	
Year 5	2002		4.55	
Year 6	2003		4.55	
Year 7	2004		4.55	
Year 8	2005		4.55	
Year 9	2006		4.55	
Year 10	2007		4.55	
5 Year Baseline Population Calculations				
Year 1	2003		4.55	
Year 2	2004		4.55	
Year 3	2005		4.55	
Year 4	2006		4.55	
Year 5	2007		4.55	
2015 Compliance Year Population Calculations				
2015		11956	4.55 **	**54,453**

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WUEdata - Riverside Highland Water Company

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Confirmation Information

Generated By	Water Supplier Name	Confirmation #	Generated On
Alec Vowels	Riverside Highland Water Company	8880048453	4/7/2016 11:24:09 AM

Boundary Information

Census Year	Boundary Filename	Internal Boundary ID
1990	Riverside Highland Water Company.kml	682
2000	Riverside Highland Water Company.kml	682
2010	Riverside Highland Water Company.kml	682

Baseline Period Ranges

10 to 15-year baseline period

Number of years in baseline period:	10
Year beginning baseline period range:	2000
Year ending baseline period range[1]:	2009

5-year baseline period

Year beginning baseline period range:	2003
Year ending baseline period range[2]:	2007

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

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

Persons per Connection

Year	Census Block Level Total Population	Number of Connections *	Persons per Connection
1990	14,432		4.04
1991	-	-	4.04
1992	-	-	4.04
1993	-	-	4.04
1994	-	-	4.04
1995	-	-	4.04
1996	-	-	4.04
1997	-	-	4.04
1998	-	-	4.04
1999	-	-	4.04
2000	14,476		4.04
2001	-	-	4.04
2002	-	-	4.04
2003	-	-	4.04
2004	-	-	4.04
2005	-	-	4.04
2006	-	-	4.04
2007	-	-	4.04
2008	-	-	4.04
2009	-	-	4.04
2010	15,252	3778	4.04
2015	-	-	4.04 **

Population Using Persons-Per-Connection

Year		Number of Connections *	Persons per Connection	Total Population
10 to 15 Year Baseline Population Calculations				
Year 1	2000		4.04	
Year 2	2001		4.04	
Year 3	2002		4.04	
Year 4	2003		4.04	
Year 5	2004		4.04	
Year 6	2005		4.04	
Year 7	2006		4.04	
Year 8	2007		4.04	
Year 9	2008		4.04	
Year 10	2009		4.04	
5 Year Baseline Population Calculations				
Year 1	2003		4.04	
Year 2	2004		4.04	
Year 3	2005		4.04	
Year 4	2006		4.04	
Year 5	2007		4.04	
2015 Compliance Year Population Calculations				
2015		3965	4.04 **	**16,007**

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QUESTIONS / ISSUES? CONTACT THE WUEDATA HELP DESK

2015 San Bernardino Valley RUWMP

Appendix F

Climate Change Vulnerability Checklist

Changes related to climate change in the IRWM guidelines made between the 2010 and 2012 versions need to be addressed. The new IRWM plan must include a list of prioritized vulnerabilities based on the vulnerability assessment checklist as well as a plan, program, or methodology for further data gathering and analysis of the prioritized vulnerabilities. Below is the vulnerability assessment checklist for the Upper Santa Ana River IRWM planning area.

Water Demand:

Are there major industries that require cooling/processed water in your planning region?

- The Mountain View power plant brings power to more than 685,000 homes. This high energy output requires the plant to utilize municipal effluent as well as ground water for cooling. The facility loses 3,300 gallons of water per minute to evaporation from the cooling towers, but for every pound of water that evaporates approximately 1,000 BTUs of heat are extracted. It also has a water treatment plant on site that recovers 75-80% of water that would normally have been disposed of. This recycling process has kept Redlands waste water fees at some of the lowest levels in the state. Despite the fact that the plant uses thirty percent less energy compared to other plants, it is the highest polluting power plant in the state; producing 1.85 million metric tons of carbon dioxide per year.

Does water use vary by more than 50% seasonally in parts of your region?

- The Inland Empire climate varies greatly from summer to winter, and therefore water demand varies accordingly. There is a greater demand for irrigation needs during the hotter season that drives up the per capita water use.

Are crops in your region climate sensitive? Would shifts in daily heat patterns, such as how long heat lingers before night-time cooling, be prohibitive for some crops?

- Citrus trees are not tolerable of below freezing temperatures. Colder winters with freezing nights have the potential to cause significant damage to citrus crops. In response to higher temperatures, evapotranspiration rates of the plants may increase, requiring more water to be used on warmer days

Do groundwater supplies in your region lack resiliency after drought events?

- Typically groundwater supplies do not lack resiliency because groundwater is replenished and stored in wet years.

Are water use curtailment measures effective in your region?

- Conservation efforts in the area include The Water Conservation Education Program, Weather Based Irrigation Controllers Program, “climate appropriate” plant promotion with Home Depot stores and other stores and nurseries, and the water conservation demonstration garden at California State University San Bernardino. These programs have begun to address the conservation needs of the area without implementing direct curtailment measures. Commercial, industrial, and institutional water reduction plans are also in place.

Are some in stream flow requirements in your region either currently insufficient to support aquatic life, or occasionally unmet?

- The in stream flows are sufficient to support aquatic life because natural flows are augmented by Publically Owned Treatment Works flows that are highly treated.

Water Supply:

Does a portion of the water supply in your region come from snowmelt?

- The water supply in the region does not come from snowmelt.

Does part of your region rely on water diverted from the Delta, imported from the Colorado River or imported from other climate-sensitive systems outside of your region?

- State Water Project water has been made available to East Valley. The water for the region is currently 57% ground water, 24% State Water Project water, 17% surface water, and 2% recycled water. The region does not rely on any water imported from the Colorado River.

Does part of your region rely of coastal aquifers? Has salt intrusion been a problem in the past?

- The region does not rely on coastal aquifers, but salt intrusion could affect the function of the State Water Project, which could ultimately have an impact on water supplies.

Would your region have difficulty in storing carryover supply surpluses from year to year?

- The region would only have issues storing surplus water in times when the basins are already saturated.

Has your region faced a drought in the past during which it failed to meet local water demands?

- The region has not faced a drought in which it was unable to meet local water demands.

Does your region have invasive species management issues at your facilities, along conveyance structures, or in habitat areas?

- The region has two invasive species, the Giant Reed and the Tamarisk Annual Grass. The Giant Reed was introduced in California in the 1820's in an attempt to help control erosion, but has since become an invasive plant. It has increased the fire fuel by 30% in the Santa Ana Basin area and also has the potential to cause major issues during floods. In addition to these issues, the Giant Reed uses 56,200 acre-ft per year in the Santa Ana River, decreasing the amount of water available to the population. Tamarisk was introduced as an ornamental planet, but has become invasive as it absorbs a large amount of water and creates salt deposits. Its seeds are dispersed by wind, have no dormancy requirements, and have a 24 hour germination period, allowing it to spread quickly and easily.

Water Quality:

Are increased wildfires a threat in your region? If so, does your region include reservoirs with fire-susceptible vegetation nearby which could pose a water quality concern from increased erosion?

- Wildfires are a threat in the region, especially during dry summers.

Does part of your region rely on surface water bodies with current or recurrent water quality issues related to eutrophication, such as low dissolved oxygen or algal blooms? Are there other water quality constituents potentially exacerbated by climate change?

- Big Bear Lake has had issues with high nitrogen and nutrient levels that promote algal growth. Although the lake is no longer a main water supply source, its contaminant levels affect recreational activity. The Middle Santa Anna River Watershed has been found to have issues with pathogens and high coliform count.

Are seasonal low flows decreasing for some water bodies in your region? If so, are the reduced flows limiting the water bodies' assimilative capacity?

- Flow levels for the water bodies in the region have been consistent with weather conditions.

Are there beneficial uses designated for some water bodies in your region that cannot always be met due to water quality issues?

- Big Bear Lake is a popular recreational area for swimming, boating and fishing in the San Bernardino Mountains. It was originally created by Bear Valley Mutual Water Company to serve as a storage reservoir in order to provide agricultural water to the customers downstream. Big Bear Lake faces many water quality issues that have the potential to affect its recreational uses. In 1990 Big Bear Lake was added to California's list of impaired water bodies by the Santa Ana Regional Water Quality Control Board. A Total Maximum Daily Load was implemented in 2007 in order to protect the lake's beneficial uses. Various water bodies in the Middle Santa Ana River Watershed were also added to the list of impaired water bodies in 1994 because the fecal coliform objective was exceeded, ultimately affecting the water contact recreation of the area. The table below lists the pollutants affecting the Big Bear Lake Watershed and the Middle Santa Ana Watershed.

Table 7: Pollutants Effecting Water bodies

Santa Ana Region Pollutants	
Water Body	Pollutants
Big Bear Lake Watershed	
Big Bear Lake	Metals, Noxious aquatic plants and Nutrients, Sedimentation/Siltation, and Mercury
Grout Creek	Metals and Nutrients
Knickerbocker Creek	Metals and Pathogens
Rathbone Creek	Nutrients and Sedimentation/Siltation
Summit Creek	Nutrients
Middle Santa Ana River Watershed	
Chino Creek, Reach 1	Pathogens
Chino Creek, Reach 2	High Coliform Count
Cucamonga Creek, Valley Ranch	High Coliform Count
Mill Creek (Prado Area)	Pathogens
Santa Ana River, Reach 3	Pathogens and Nitrate
Prado Park Lake	Pathogens

Does part of your region currently observe water quality shifts during rain events that impact treatment facility operation?

- The region does not observe water quality shifts during rain events that impact water treatment facility operations.

Sea Level Rise:

Has coastal erosion already been observed in your region?

- Coastal erosion has not been observed in the region.

Are there coastal structures, such as levees or breakwaters, in your region?

- There are no coastal structures in the region.

Is there significant coastal infrastructure, such as residences, recreation, water and wastewater treatment, tourism, and transportation at less than six feet above mean sea level in your region?

- There is no infrastructure less than six feet above mean sea level.

Are there climate-sensitive low-lying coastal habitats in your region?

- There are no climate-sensitive low-lying coastal habitats in the region.

Are there areas in your region that currently flood during extreme high tides or storm surges?

- There are no areas in the region that flood during extreme high tides or storm surges do to coastal waters.

Is there land subsidence in the coastal area of your region?

- There is no land subsidence in the coastal area of the region.

Do tidal gauges along the coastal parts of your region show an increase over the past several decades?

- There are no coastal parts in the region.

Flooding:

Does critical infrastructure in your region lie within the 200-year floodplain?

- The 200-year floodplain is not available at this time, but infrastructure such as Crafton Elementary School lies in the 100 year floodplain provided by FEMA for The Zanja as well as many buildings along the Santa Ana.

Does part of your region lie within the Sacramento-San Joaquin Drainage District?

- The region does not lie within the Sacramento-San Joaquin Drainage District.

Does aging critical flood protection infrastructure exist in your region?

- Flood protection in the area has been in place for several decades, but improvements have been made in the last decade. The federal Santa Ana River Mainstream project includes the Seven Oaks Dam, Prado Dam, and other flood control facilities along the Santa Ana River, which provide flood protection to the residents of San Bernardino, Riverside, and Orange Counties. The Seven Oaks Dam was completed in 1999 and the construction of the SAR project began in 1989.

Have flood control facilities (such as impoundment structures) been insufficient in the past?

- Flood control facilities have failed as recently as December 2010, when several creeks and debris basins overflowed and flooded the City of Highland.

Are wildfires a concern in parts of your region?

- Wildfires have always been a concern for the region. An example would be the Old Fire in 2003, which burned 91,281 acres, destroyed 993 homes, and killed 6 people. During this incident The East Valley Water District advised residents in certain areas to boil water for drinking and eating in order to ensure that the water was safe to drink.

Ecosystem and Habitat Vulnerability:

Does your region include inland or coastal aquatic habitats vulnerable to erosion and sedimentation issues?

- The region does not include inland or coastal aquatic habitats vulnerable to erosion.

Does your region include estuarine habitats which rely on seasonal freshwater flow patterns?

- The region does not include estuarine habitats.

Do climate-sensitive fauna or flora populations live in your region?

- Climate sensitive plants live in the region.

Do endangered or threatened species exist in your region? Are changes in species distribution already being observed in parts of your region?

- Endangered species live in the region.

Does the region rely on aquatic or water-dependent habitats for recreation or other economic activities?

- The region does rely on aquatic habitats for recreational purposes, as is the case for Big Bear Lake and Middle Santa Ana.

Are there rivers in your region with quantified environmental flow requirements or known water quality/quantity stressors to aquatic life?

- There are rivers in the region with water quality stressors such as Middle Santa Ana.

Do estuaries, coastal dues, wetlands, marshes, or exposed beaches exist in your region? If so, are coastal storms possible/frequent in your region?

- Exposed coastal areas do not exist in the region.

Does your region include one or more of the habitats described in the Endangered Species Coalition's Top 10 habitats vulnerable to climate change?

- The region does not include any of the habitats described in the Endangered Species Coalition's Top 10 habitats vulnerable to climate change.

Are there areas of fragmented estuarine, aquatic, or wetland wildlife habitat within your region? Are there movement corridors for species to naturally migrate? Are there infrastructure projects planned that might preclude species movement?

- The region is not aware of fragmented wildlife habitat within the region, or infrastructure projects planned that might preclude species movement.

Hydropower:

Is hydropower a source of electricity in your region?

- The hydropower stations located in the area include the Santa Ana No 1 & 2, Mill Creek No 2 & 3, San Gorgonio, and Lytle Creek. These stations are owned and operated by the Southern California Edison Company and produce 12.63 MW of electricity. Below lists the generating capacity of each location.

Hydropower Station Capacity	
Hydropower Station	**Generating Capacity (MW)**
Santa Ana No 1 & 2	6.3
Mill Creek No 1 & 2	3.23
San Gorgonio	2.63
Lytle Creek	0.45
Devil Canyon	276.46
Fontana Sandhill WTP Hydropower Facility	0.31

Are energy needs in your region expected to increase in the future? If so, are there future plans for hydropower generating facilities or conditions for hydropower generation in your region?

- There are currently no future plans for more hydropower generation facilities in the region.

The above checklist demonstrates the areas for which the region is most vulnerable.

2015 San Bernardino Valley RUWMP

Appendix G

Water Conservation Ordinances for Retail Agencies, in order of their Chapters

ORDINANCE NO. 395

AN ORDINANCE OF THE EAST VALLEY WATER DISTRICT RESCINDING ORDINANCE NO. 393 ENTITLED "AN ORDINANCE ESTABLISHING RULES AND REGULATIONS FOR WATER SERVICE, ESTABLISHING A WATER DEPARTMENT, PROVIDING FOR INSTALLATION AND CONNECTION TO DISTRICT WATER MAINS, REGULATING CROSS CONNECTION CONTROL".

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SECTION 2. GENERAL PROVISIONS

2.01 Short Title - This Ordinance may be cited as the "East Valley Water District Water Regulations and Service Ordinance".

2.02 Purpose - This Ordinance is intended to provide rules and regulations applicable to the administration and operational activities of the District. This Ordinance may be amended from time to time by action of the Board of Directors of the East Valley Water District.

2.03 Enabling Statutes - This Ordinance is adopted pursuant to the applicable provisions of Division 12 of the Water Code and Division 5, Chapter 7, Title 5, Division 2 of the Government Code, and further pursuant to the Constitution of the State of California. The District is further authorized by Water Code Section 31027 to prescribe and define by Ordinance those restrictions, prohibitions and exclusions it may determine to be necessary pursuant to the California Constitution Article X, Section 2 and Water Code Sections 31026 and 350 et seq. to restrict the use of District water during threatened or existing water shortages. It is therefore the intent of the Board of Directors to establish by this Ordinance those procedures and policies necessary to the orderly administration of a water conservation program to prohibit waste and to restrict the use of water during a water shortage or emergency.

2.04 Application - This Ordinance shall apply to all water facilities constructed, maintained, and operated by the District.

2.05 Enterprise - The District will furnish and/or make available, a system, plant, works, and undertaking used for and useful in, the delivery of water for the District's service area, including all annexations thereto, lands, easements, rights in land, contract rights and franchises.

2.06 Separability - If any section, subsection, sentence, clause, phrase, or portion of this Ordinance or the application thereof to any person or circumstances are for any reason held to be unconstitutional or invalid by any court of competent

jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance or the application of such provision to other persons or circumstances. The governing body hereby declares that it would have passed this Ordinance or any section, sub-section, sentence, clause or phrase hereof irrespective of the fact that one or more sections, subsections, sentences, clauses or phrases be declared to be unconstitutional.

2.07 Words and Phrases - For the purpose of this Ordinance all words used herein in the present tense shall include the future; all words in the plural number shall include the singular number; and all words in the singular number shall include the plural number.

2.08 Posting - Upon adoption, this Ordinance shall be entered in the minutes of the governing body and certified copies hereof shall be posted in three (3) public places and/or published in a newspaper of general circulation in the District service area within ten (10) days following its passage.

2.09 Means of Enforcement - The District hereby declares that the procedures contained herein are established as a means of enforcement of the terms and conditions of its ordinances, rules and regulations and not as a penalty.

2.10 Notices - Whenever a notice is required to be given under this Ordinance, unless different provisions are specifically made herein, such notice may be made either by personal delivery thereof to the person to be notified or by deposit in the U.S. mail in a sealed envelope, postage prepaid, addressed to such person at his last known business or residence address as the name appears in public records or other records pertaining to the matter to which the notice is directed. Service by mail shall be deemed to have been completed at the time of deposit in the post office.

Proof of giving any notice may be made by the certificate of any officer or employee of the District or by affidavit of any person over the age of eighteen years,

which shows service in conformity with the Ordinance or other provisions of law applicable to the subject matter concerned.

2.11 Effect of Heading - The title, division or section headings contained in this Ordinance shall not be deemed to govern, limit or modify in any manner the scope, meaning or intent of any section or subsection of this Ordinance.

SECTION 3. DEFINITIONS

3.01 Applicant - The person making application hereunder who must be either (a) the owner of the subject premises, (b) the agent or customer authorized in writing to make application hereunder on behalf of the owner of the subject premises or, (c) a licensed plumber or contractor authorized in writing to make application hereunder for the subject premises.

3.02 Approved Backflow Prevention Assembly - A device deterring the reversal of flow of water or mixtures of water and other liquids, gasses, and/or other substances into the distribution pipes of the District's potable supply of water through any Cross-Connection. Said device must have been investigated and approved for use as either an Air-gap separation, Double Check Valve Assembly, or Reduced Pressure Principle Backflow Prevention Device by the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California, or by any other laboratory having equivalent capabilities for both the laboratory evaluation and field evaluation thereof.

3.03 Board - The Board of Directors of the East Valley Water District.

3.04 Commercial - Any service not covered by the residential description. This shall include, but not be limited to, apartments, trailer parks, schools, dry cleaners, laundries and businesses

3.05 Connection - The pipeline and appurtenant facilities such as the curb stop, meter and meter box, all used to extend water service from the main to the premises, the laying thereof and the tapping of the main. Where services are divided

at the curb or property line to serve several customers, each such branch service shall be deemed a separate service.

3.06 Cost - The cost of labor, materials, transportation, supervision, engineering, and all other necessary overhead expenses.

3.07 County - The County of San Bernardino, California.

3.08 Cross Connection - An unprotected actual or potential connection between a potable water system used to supply water for drinking purposes and any source or system containing unapproved water or a substance that is not or cannot be approved a safe, wholesome and potable. By-pass arrangements, jumper connections, removable sections, swivel or changeover devices, or other devices through which backflow could occur, shall be considered to be cross-connections.

3.09 Customer - Any person (as defined) supplied or entitled to be supplied with water service by the District.

3.10 Customer's Service Valve - A valve independent of the District's facilities located in the customer's piping as close to the meter as practicable, the operation of which will control the entire water supply from the meter.

3.11 District - The East Valley Water District, San Bernardino County, California.

3.12 District Engineer - A Registered Civil Engineer of the State of California.

3.13 Engineering Services - The engineering services provided by the District to include technical and procedural guidance, professional consultant services, project coordination and plan checking.

3.14 Financial Officer - The Treasurer appointed by the Board of Directors.

3.15 Fire Hydrant - **Short Side:** The case where the water main and the hydrant are on the same side of the street's centerline. **Long Side:** The case where the water main and the hydrant are on the opposite sides of the street's centerline.

3.16 General Manager - The General Manager of the District.

3.17 Governing Body - The Board of Directors of the East Valley Water District.

3.18 Inspector - The person who shall perform the work of inspecting water facilities under the jurisdiction or control of the District.

3.19 Main - A water line in a street, highway, alley or easement used for public and private fire protection and for the general distribution of water.

3.20 Owner - The person owning in fee title, or in whose name the legal title to the property appears, by deed duly recorded in the County Recorder's office, or the person in possession of the property or buildings under claim of, or exercising acts of ownership over same for himself or, as executor, administrator, guardian or trustee of the owner.

3.21 Permit - Any written authorization required pursuant to this or any other regulation of the District.

3.22 Person - Any human being, individual, firm, company, partnership, association and private, public or municipal corporation, the United States of America, the State of California, a district and any political subdivision, or governmental agency.

3.23 Premises - A lot or parcel of real property under one ownership, except where there are well defined boundaries or partitions such as fences, hedges or other restrictions preventing the common use of the property by several tenants, in which case each portion shall be deemed separate premises. Apartment houses and office buildings may be classified as single premises.

3.24 Private Fire Protection Service - Water service and facilities for building sprinkler systems, hydrants, hose reels and other facilities installed on private property for fire protection and the water available therefor.

3.25 Public Fire Protection Service - The service and facilities of the entire water supply, storage and distribution system of the District, including the fire

hydrants affixed thereto, and the water available for fire protection, excepting house service connections and appurtenances thereto.

3.26 Regular Water Service - Water service and facilities rendered for normal domestic, commercial and industrial purposes on a permanent basis, and the water available therefor.

3.27 Residential - Any single, duplex or triplex family unit not requiring licensing for occupancy and operation.

3.28 Secretary - The Secretary to the Governing Body.

3.29 Temporary Water Service - Water service and facilities rendered for construction work and other uses of limited duration, and the water available therefor.

3.30 Waste - Any unreasonable method or non-beneficial use of water, including, but not limited to, the specific uses prohibited and restricted by this Ordinance as hereinafter set forth.

3.31 Water Department - The Board of Directors of the District performing functions related to the District's water service, together with the General Manager, the District Engineer, the Financial Officer and any other duly authorized representative.

3.32 Water Supply Shortage - Any water shortage caused by drought or any other threatened or existing water shortage, disaster or facility failure, earthquake, loss of electrical power, pipeline breakage, or other condition which results in or threatens to result in the District's inability to meet the water demands of its customers.

3.33 Water User - Any person, firm, partnership, association, corporation or political entity using water obtained from the water system of the District.

3.34 Water - That water supplied by the East Valley Water District.

SECTION 4. WATER DEPARTMENT

4.01 Creation - A Water Department is hereby created comprised of the Directors, the General Manager, the Financial Officer and District Engineer and such other employees and assistants as may be hired therefor.

4.02 General Manager - The General Manager, as provided for in the Water Code Section 30580, shall have full charge and control of the maintenance, operation and construction of the water works and water distribution system of the District.

4.03 District Engineer - The position of District Engineer is hereby created. The District Engineer shall regularly inspect all physical facilities related to the District water system, to see that they are in good repair and proper working order, and to note and report violations of any ordinances or water regulations.

4.04 Violation, Repairs - The District Engineer shall promptly report any violation or disrepair to the General Manager. If the work required is in the nature of an emergency, he/she shall take whatever steps necessary to maintain service to the consumers pending action by the General Manager.

4.05 Supervision - The District Engineer shall supervise all repair or construction work authorized by the Board or General Manager and perform any other duties prescribed by the Board or General Manager.

4.06 Performance of Duties - The foregoing duties of the District Engineer may be performed by the General Manager or by an additional employee or employees as designated by the District Engineer and/or General Manager.

4.07 The Financial Officer - The Financial Officer shall install and maintain a system of auditing and accounting that shall completely and at all times show the financial condition of the District. Furthermore the Financial Officer shall compute, prepare and mail bills as hereinafter prescribed, make and deposit collections, maintain proper books of account, collect, account for, refund deposits, and do whatever else is necessary or directed by the General Manager to set up and maintain

an efficient and economical accounting system and perform any other duties now and hereafter prescribed by the Board of Directors.

SECTION 5. GENERAL RULES

5.01 Standards - The Governing Body may, from time to time, adopt standard requirements for the design, construction, repair and maintenance, or connection to the District's water system.

5.02 Violation Unlawful - Following the effective date of this Ordinance, it shall be unlawful for any person to connect to, construct, install, provide, maintain or use any other means of water facilities from any building in the area serviced with water by said District except by connection to water facilities in the manner as provided for in this Ordinance. Any violation of this Ordinance will be subject to the provisions of this Section at the discretion of the General Manager, Financial Officer, or District Engineer.

5.03 Notice - Wherever, and whenever, practicable under the particular circumstances of the situation, and pursuant to the discretion of the General Manager, Financial Officer, or District Engineer, any person found to be violating any provisions of this or any other ordinance, resolution, rule or regulation of the District shall be served by the Inspector or other authorized person with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. Said time limit shall be not less than two, nor more than seven working days. The offender shall, within the period of time stated in such notice, permanently cease all violations. All persons shall be held strictly responsible for any and all acts of agents or employees done under the provisions of this Ordinance or any other rule or regulation of the District.

5.04 Protection from Damage - No person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface or tamper with any structure,

appurtenances or equipment which is a part of the District's water works. Any person violating this provision shall be subject to the penalties provided by law.

5.05 Investigation Powers - The officers, inspectors, managers, and any duly authorized employees or agents of the District shall carry evidence establishing their position as an authorized representative of the District and, upon exhibiting the proper credentials and identification, shall be permitted to enter in and upon any and all buildings, industrial facilities and properties to which the District is furnishing water, or has been requested to furnish water for the purpose of inspection, re-inspection, observation, measurement, sampling, testing or otherwise performing such duties as may be necessary in the enforcement of the provisions of the ordinances, resolutions, rules and regulations of the District pursuant to the authorization contained in the required application for water service.

5.06 Noncompliance with Regulations - As an alternative method of enforcing the provisions of this or any ordinance, resolution, rule or regulation of the District, the District shall have the power to disconnect the user or subdivision water service from the water mains of the District.

5.07 Liability for Violation - Any person violating any of the provisions of the ordinances, rules or regulations of the District shall become liable to the District for any expense, loss or damage, occasioned by the District by reason of such violation.

5.08 Relief on Application - When any person, by reason of special circumstances, is of the opinion that any provision of the ordinances, rules or regulations of the District is unjust or inequitable as applied to his/her premises, that person may make written application to the Governing Body stating the special circumstances, citing the provision complained of and requesting suspension or modification of that provision as applied to his/her premises. If such application is approved, the Governing Body may, by resolution, suspend or modify the provision

complained of, as applied to such person or premises, to be effective as of the date of the application and continuing during the period of the special circumstances.

5.09 Relief on Own Motion - The Governing Body may, on its own motion, find that by reason of special circumstances, any provisions of its ordinances, rules or regulations should be suspended or modified as applied to a particular person or premises and may, by resolution, order such suspension or modification for such premise or person during the period of such special circumstances or any part thereof.

5.10 Maintenance of Water Pressure and Pressure Conditions - The Board shall not accept any responsibility for the maintenance of pressure and it reserves the right to discontinue service while making emergency repairs, or other work required on the water system as determined by the General Manager and/or the District Engineer. Consumers dependent upon a continuous supply of water should provide emergency storage. All applicants for service connections or water service shall be required to accept such conditions of pressure and service as are provided by the distribution system at the location of the proposed service connection, and to hold the District harmless for any damages arising out of low pressure or high pressure conditions or interruptions of service.

5.11 Tampering with District Property - Except as otherwise specifically authorized by the General Manager, no one, except an employee or representative of the District shall at any time, in any manner, operate the curb cocks or valves, main cocks, gates or valves of the District's system or interfere with meters or their connections, street mains or other parts of the water system.

5.12 Remedies for Violation - Failure of a customer to comply with any part of this Ordinance, or any other ordinance, resolution, rule, or regulation of the District, shall result in the District's discontinuance and/or refusal to provide water service to said customer's premises and in the exercise by the District in its lawful

discretion of any and all other rights and remedies that are available to the District under the law.

5.13 Water System - The District will furnish a system, plant, works and undertakings used for and useful in obtaining, conserving and disposing of water for public and private uses, including all parts of the Enterprise, all appurtenances to it, lands, easements, rights in land, water rights, contract rights, franchises, and other water supply, storage and distribution facilities and equipment.

5.14 Number of Services per Premises - The applicant may apply for as many services as may be reasonably required for their premises provided that the pipeline system for each service be independent of the others and that they not be interconnected.

5.15 Water Waste - No customer shall knowingly permit leaks or waste of water. Where water is wastefully or negligently used on a customer's premises, seriously affecting the general service, the District may discontinue the service if such conditions are not corrected after giving notice of violation as provided in Section 5.03 herein.

5.16 Responsibility for Equipment on Customer Premises - All facilities installed by the District on private property for the purpose of rendering water service shall remain the property of the District and may be maintained, repaired or replaced by the Water Department without consent or interference of the owner or occupant of the property. The property owner shall use reasonable care in the protection of the facilities.

5.17 Damage to Water Facilities - The customer shall be liable for any damage to the service facilities when such damage is from causes originating on the premises by an act of the customer or his tenants, agents, employees, contractors, licensees or permittees, including the breaking or destruction of locks by the customer or others on, or near, a meter, and any damage to a meter that may result

from hot water or steam from a boiler, or heater, on the customer's premises. The District shall be promptly reimbursed for any such damage upon presentation of a bill to the customer.

5.18 Ground Wire Attachments - All individuals or business organizations are forbidden to attach any ground wire, or wires, to any plumbing which is, or may be, connected to a service connection or main belonging to the District. The District will hold the customer liable for any damage to its property occasioned by such ground wire attachments.

5.19 Control Valve on Customer Property - The customer shall provide a valve on his/her side of the service installation as close to the meter location as practicable to control the flow of water to the piping on his/her premises. The customer shall not use the service curb stop to turn water on and off for his/her convenience.

5.20 Unsafe Apparatus - Water service may be refused or discontinued to any premises where apparatus or appliances are in use which might endanger or disturb the service to other customers.

5.21 Cross Connections - Water service may be refused or discontinued to any premises where there exists a cross connection as defined in Section 9 of this Ordinance.

5.22 Fraud or Abuse - Service may be discontinued, if necessary, to protect the District against fraud or abuse.

5.23 Interruption in Service - The District shall not be liable for damage which may result from an interruption in service from a cause beyond the control of the Water Department.

5.24 Ingress and Egress - All duly authorized employees, agents, and representatives of the District shall have the right of ingress and egress to the

customer's premises at reasonable hours for any purpose reasonably connected with the furnishing of water service.

5.25 Installation of Services - Only duly authorized employees, agents, and representatives of the District shall install service connections to the District's water system. All service connections shall comply with the specifications of the District. Meters will be installed in the public right of way, or within an acceptable easement, and shall be owned by the District. No rent or other charge will be paid by the District for a meter or other facilities, including connections. All meters will be sealed by the District at the time of installation and no seal shall be altered or broken except by one of the District's authorized employees or agents.

5.26 Change in Location of Meters - Meters moved for the convenience of the customer will be relocated at the customer's expense. Meters moved to protect the District's property will be moved at District expense.

5.27 Size and Location - The District reserves the right to determine the size of service connections and their location with respect to the boundaries of the premises to be served. Service installations will be made only to property abutting on distribution mains as have been constructed in public streets, alleys or easements or to extensions thereof as herein provided. Services installed in new subdivisions prior to the construction of streets, in advance of street improvements, must be accepted by the applicant in the installed location.

5.28 Curb Cock - Each service connection installed by the District shall be equipped with a curb cock, or wheel valve, on the inlet side of the meter. Such valve, or curb cock, is intended for the exclusive use of the District in controlling the water supply through the service connection pipe. If the curb cock, or wheel valve, is damaged by the customer's use to an extent requiring replacement, such replacement shall be at the customer's expense.

5.29 Access to Meters - The District reserves the right to enter upon the applicant's premises for the purpose of reading, repairing or replacing the water service meter. The applicant shall be solely responsible for the control of all animals which may pose a potential threat to District employees and shall be liable for any injury to District employees resulting from unrestrained animals. Should an applicant for new service fail to properly restrain animals present on his property, the District may, upon written notice, refuse to install or turn on service until such time as the District determines that a threat to its employees no longer exists. When there is an ostensive risk to employees at an established service due to the presence of unrestrained animal(s) or other hazard(s), the employee will not be required to read the meter, etc. The customer will be notified of the situation and the bill will be estimated based upon an average of the most recently recorded six (6) month's consumption until a personal risk by the District's employee is no longer an issue. Upon verification that the premises no longer appears to be a threat to the safety of the employee, the meter will be read in the presence of the customer, or someone of his/her choosing, and the billing will be adjusted accordingly.

SECTION 6. APPLICATION FOR WATER SERVICE

6.01 Application for Water Service - The property owner or his/her agent designated in writing shall make application for regular water service by personally signing an Application for Water Service form provided by the District and pay the necessary fee for connection to the District's facilities as prescribed in the latest Resolution and Schedule of Rates and Charges adopted by the Board of Directors.

6.02 Water Service to Customers other than Property Owners - Water Service to other than property owners shall be made as follows:

6.02.01 Property Owner's Signature - If the Property owner rents the premises to a tenant, the tenant may have water service and other services instituted in the tenant's name, provided that reasonable efforts are made to secure the

property owner's signature on the application for service and the tenant provides the District with a copy of the rental agreement. In any event, the tenant must provide the District with the property owner's name, mailing address and telephone number.

6.02.02 Owner Responsibility - Whether or not a property owner signs the District's application for water service form, the property owner is not relieved of his or her responsibility for unpaid water charges for the subject property as provided in this ordinance and pursuant to California Water Code Section 31701.5, et..seq.

6.03 Payment of Delinquent Charges - As a precondition to receiving water service from the District, the applicant for service shall pay any and all unpaid charges that have accrued on any closed accounts previously held by the applicant with the District as well as pay any and all delinquent charges that have accrued on any open accounts currently held by the applicant with the District.

6.04 Security Deposit - A security deposit for each single family residential unit, commercial or retail unit, or multi-unit complex shall be deposited at the time application for water service is made. The District may, at its sole election, include the required security deposit on the customer's first billing invoice.

6.04.01 Single Family Residential - A security deposit for a single family residential unit may not be required if the person requesting service is a new residential applicant who is determined by the District to be creditworthy. The determination of an applicant's creditworthiness shall be based solely upon criteria developed by the District and may be appealed in the manner set forth in Section 11 herein. However, during the life of the account, the District may, in its sole discretion, require any customer, regardless of whether he or she was previously found to be creditworthy, to post a full security deposit with the District any time there are three (3) delinquencies within any consecutive six (6) month period, or as a precondition to reinstatement of service anytime after being disconnected for nonpayment.

6.04.02 Security Deposit Refund - Refunds of security deposits will be performed in the manner set forth below. Such refunds will be credited to any account held by the customer with the District in lieu of a refund check. Interest on the security deposits shall remain the sole property of the District and will not be included in any refund.

6.04.02.01 Single Family Residential - The District shall refund each security deposit to a residential customer as follows:

a. Where funds have been on deposit for one year in a customer's account and there have been no delinquency payments on any of the customer's accounts with the District during that year. However, the District may, at its sole option, require any customer to post a full security deposit with the District any time there are three (3) delinquencies within any consecutive six (6) month period, or as a precondition to reinstatement of service anytime after being locked off for nonpayment.

b. Within thirty (30) days after the applicant provides written notice to terminate water services, or when a new property owner tenders a full deposit for the same property, in which case the refunded deposit shall first be applied toward the unpaid balances in any account held by the customer with the District before the remaining sum, if any, is refunded to the customer.

6.04.02.02 Commercial, Retail or Industrial - The District shall refund the security deposit for commercial, retail or industrial connections as follows:

a. Where funds have been on deposit for one year in a customer's account and there has been no delinquency payment on any of the customer's accounts with the District during that year and upon the customer's request, one-half of the deposit will be refunded to the customer by means of a credit on the account. However, if the customer is delinquent on any payment thereafter, the District may, at its sole option, charge back the credited amount.

b. Within thirty (30) days after the applicant provides written notice to terminate water services, or when a new property owner tenders a full deposit for the same property, in which case the refunded deposit shall first be applied toward the unpaid balances in any account held by the customer with the District before the remaining sum is refunded to the customer.

6.05 Change in Customer's Equipment - Customers who make any material change in the size, character of, extent of the equipment or operations utilizing water service, or whose change in operations results in a significant increase in the use of water shall immediately give the District written notice of the nature of the change and, if necessary, amend their application.

6.06 Domestic, Commercial and Industrial Service Connections - It shall be unlawful to maintain a connection excepting in conformity with the following:

6.06.01 Multiple Building - Multiple houses or buildings under one ownership and on the same lot or parcel of land may be supplied through the same service connection, provided that the service connection shall be of such size to adequately serve said houses or buildings.

6.06.02 Single Service Connection - Not more than one service connection for domestic or commercial supply shall be installed for one building, except when authorized by the District.

6.06.03 Separate Service Connection - A service connection shall not be used to supply any adjoining property, or property across a street, alley or easement. Each service connection shall serve only one property or individual parcel.

6.06.04 Divided Property - When property provided with a service connection is divided, the service connection shall be considered as belonging to the lot or parcel of land which it directly enters.

6.07 Service Connection Maintenance - The service connection extending

from the water main to the meter, meter box and curb cock or wheel valve, shall be maintained by the District. All pipes and fixtures extending or lying beyond the meter box shall be installed and maintained by the owner of the property.

6.08 Damage through Leaking Pipes and Fixtures - When requested to turn on the water supply to a house or property, the District will make a reasonable attempt to ascertain if water is running on the inside of the building. If such is found to be the case, the water will be left shut off at the curb cock or the private shutoff. The District's jurisdiction and responsibility ends at the customer's side of the meter box and the Board will in no case be liable for damages occasioned by water running from open or faulty fixtures, or from broken or damaged pipes beyond the meter box.

6.09 Damage to Meters - The District reserves the right to set and maintain a meter on any service connection. The water customer shall be held liable for any damage to the meter due to customer's negligence or carelessness.

6.10 Main Extension Required - The District may provide for all main extensions upon application for service and payment of required charges. Customer may elect to extend mains according to agreements between the customer and the District providing the work meets District standards.

6.10.01 Application - Any owner of one or more lots, parcels, or a sub-divider of a tract of land desiring the extension of one or more water mains to serve such property, shall make written application therefor to the District. Said application shall contain the legal description of the property to be served, tract number, and any additional information which may be required by the District, and shall be accompanied by a map showing the location of the proposed connections.

6.10.02 Investigation - Upon receipt of the application requesting the District to install facilities, the District shall make an investigation and survey of the proposed extension and estimate the cost thereof.

6.10.03 Dead-end Lines - No dead-end lines shall be permitted, except at the discretion of the General Manager, and in cases where circulation lines are necessary they shall be designed and installed by the District as part of the main extension.

6.10.04 Specifications and Construction - The size, type and quality of materials and location of the lines shall be specified and approved by the District.

6.10.05 Property of District - Upon completion of such installation as approved by the District, the facilities shall be dedicated to and become property of the District.

6.10.06 Connections - The applicant shall, at his cost, provide all connections to buildings and private water systems, as herein provided.

SECTION 7. TEMPORARY SERVICE

7.01 Duration of Service - Temporary service connections shall be disconnected and terminated within six months after installation unless an extension of time is granted in writing by the General Manager, Financial Officer, or District Engineer.

7.02 Security Deposit - The applicant shall deposit, in advance, the estimated cost of the temporary service. Upon discontinuance of service, the actual cost shall be determined and an adjustment made as an additional charge, refund or credit.

7.03 Installation and Operation - All facilities for the temporary service to the customer shall be made and operated in accordance with District instructions. The District may, at its discretion, restrict or terminate the service at any time.

7.04 Responsibility for Meters and Installations - The customer shall use all possible care to prevent damage to the meter, or to any other loaned facilities of the District, which are involved in furnishing the temporary service from the time they are installed until they are removed. If the meter or other facilities are damaged, the

cost of making repairs shall be paid by the customer. The customer shall give notice to the District in writing at least forty eight (48) hours prior to the time the customer or other person is through with the meter, or meters, and the installation.

7.05 Supply from Fire Hydrant - An applicant for temporary use of water from a fire hydrant must apply for a temporary water service and pay a hydrant meter deposit. The applicant shall also pay for water used in accordance with the meter readings, at the rates prescribed by the Board.

7.06 Unauthorized Use of Hydrants - Tampering with any fire hydrant for the unauthorized use of water therefrom or for any other purpose is subject to a fine, per occurrence, as may be set by the Board.

7.07 Meter Availability - As prescribed by the District, the applicant shall make the hydrant meter available for reading on a monthly basis for actual water usage. If the hydrant meter is not available for the monthly reading as prescribed by the District, a supplementary fee of $100 will be charged for each month the meter is not read to cover the expense required for corrections to billing records.

7.08 Pools and Tanks - When an abnormally large quantity of water is desired for filling a swimming pool or for other purposes, arrangements must be made with the District prior to taking such water. Permission to take water in unusual quantities will be given only if it can be safely delivered through the District's facilities and if other consumers are not inconvenienced thereby.

7.09 Responsibility for Equipment - The customer shall, at his own risk and expense, furnish, install and keep in good and safe condition all equipment that may be required for receiving, controlling, applying and utilizing water, and the District shall not be responsible for any loss or damage caused by the improper installation of such equipment, or the negligence or wrongful act of the customer or any of his tenants, agents, employees, contractors, licensees or permitees in installing, maintaining, operating or interfering with such equipment. The District shall not be

responsible for damage to property caused by faucets, valves and other equipment which are open when water is turned on at the meter, either originally or after a temporary shutdown.

SECTION 8. FIRE PROTECTION

8.01 Public Fire Protection - The following pertains to the use of District facilities for public fire protection:

8.01.01 Use of Fire Hydrants - Fire Hydrants are for use by the District or by organized fire protection agencies pursuant to contract with the District. Other parties desiring to use fire hydrants for any purpose must obtain prior written permission from the Water Department and shall operate the hydrant in accordance with instructions issued by the Water Department. Unauthorized use of hydrants will be prosecuted according to law.

8.01.02 Moving of Fire Hydrants - When a fire hydrant has been installed in the location specified by the proper authority, the District has fulfilled its obligation. If a property owner or other party desires a change in the size, type or location of the hydrant, they shall bear all costs of such changes without refund. Any change in the location of a fire hydrant must be approved by the proper authority.

8.02 Private Fire Protection Service - The following pertains to the use of District facilities for private fire protection systems:

8.02.01 Payment of Cost - The applicant for private fire protection service shall pay the total actual cost of installation of the service from the distribution main to the service location including the cost of a detector check meter or other suitable and equivalent device, valve and meter box, said installation will become the property of the District.

8.02.02 No Connection to Other Systems - Unless authorized and under special circumstances, there shall be no connection between the fire protection system and any other water distribution system on the premises.

8.02.03 Use - There shall be no water used through the fire protection service except to extinguish fires and for testing the fire fighting equipment.

8.02.04 Charges for Water Used - Any consumption recorded on the meter will be charged as provided in District Resolutions, except that no charge will be made for water used to extinguish fires reported to the fire department.

8.02.05 Monthly Rates - The monthly rates for private fire protection shall be established by Resolution of the Board of Directors.

8.02.06 Water for Fire Storage Tanks - Occasionally water may be obtained from a private fire service for filling a tank connected with the fire service, but only if written permission is secured in advance from the District and an approved means of measurement is available.

8.02.07 Violation of Agreement - If water is used from a private fire service in violation of the agreement or this Ordinance, the District may, at its option, discontinue and remove the service.

8.02.08 Valve - When a fire service connection is installed, the valve governing same will be closed and sealed and remain so until a written order is received from the owner of the premises to have the water turned on.

8.02.09 Meter - If the District does not require a meter, and if water is used through a fire service connection for any other purpose than extinguishing fires, the District shall have the right to place a meter on the fire service connection at the owners expense and assess the appropriate capacity fees, or shut off the entire water supply from such premises.

8.02.10 Additional Service - The District shall have the right to take a domestic, commercial or industrial service connection from the fire service connection at the curb to supply the same premises as those to which the fire service connection belongs. The Board shall also have the right to determine the proportion

of the installation costs properly chargeable to each service connection, if such segregation of costs shall become necessary.

8.02.11 Check Valve - The Board reserves the right to install on all fire service connections a check valve of a type approved by the National Board of Fire Underwriters and to equip the same with a by-pass meter at the expense of the owner of the property.

SECTION 9. CROSS CONNECTION CONTROL

9.01 Purpose - The purpose and intent of this Section:

a. To comply with the requirements imposed upon the District pursuant to Sections 7583-7605 of the California Code of Regulations ("Title 17") and all other applicable regulations regarding Cross-Connection Control.

b. To protect the public potable water supply of this District from the possibility of contamination or pollution by isolating within the customer's internal distribution system(s), or the customer's private water system(s), such contaminants or pollutants which could backflow into the District's public water system(s); and

c. To promote the elimination or control of existing cross-connections, actual or potential, between the customer's potable water system(s) and non-potable water system(s), plumbing fixtures and industrial systems; and

d. To provide for the maintenance of a continuing Cross-Connection Control Program which will systematically and effectively minimize the potential for contamination or pollution of the potable water system.

9.02 Application - The provisions of Title 17 and all other regulations regarding Cross-Connections that are adopted by the State of California Department of Health Services pursuant to California Water Code Sections 100205, 100275, and 116375(c), all as the same may be amended from time to time, are hereby adopted by the District, incorporated herein by this reference, and made a part hereof as though set forth in full.

9.03 Definitions - In addition to the definitions in Title 17, the following terms are defined for the purpose of this chapter:

9.03.01 Approved Water Supply - The term "Approved Water Supply" shall mean a water supply whose potability is regulated by the Department of Health Services.

9.03.02 Auxiliary Water Supply - Any water supply, other than the District's, which is either on or available to the property will be considered as an auxiliary water supply. These auxiliary waters may include water from another public potable water supply or from any natural source(s) such as a well, river, stream or used water. These waters may be contaminated, polluted or constitute an unacceptable water source over which the District does not have sanitary control.

9.03.03 Backflow - The term "backflow" shall mean the undesirable reversal of flow of water or mixtures of water and other liquids, gasses or substances into the distribution pipes of the District's potable supply of water from any source or sources.

9.03.04 Backpressure - The term "backpressure" shall mean any elevation of pressure in the downstream piping system above the supply pressure at the point of consideration which would cause, or tend to cause, a reversal of the normal direction of flow.

9.03.05 Backsiphonage - The term "backsiphonage" shall mean a form of backflow due to a reduction in system pressure which causes a sub-atmospheric pressure to exist at a point in the water system.

9.03.06 Backflow Preventer - An assembly or means designed to prevent a reverse flow condition created by a difference in water pressures.

9.03.07 Backflow Prevention Devices - The actual types of devices that may be required and are acceptable for use in the District are as follows:

a. **Air Gap** - The term "Air Gap" shall mean a physical separation.

between the free flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel.

b. **Reduced Pressure Principle Backflow Prevention (RPP) Assembly** - The term "RPP Assembly" shall mean an assembly containing two independently acting approved check valves together with a hydraulically operating, mechanically independent, pressure differential relief valve located between the check valves. The unit shall include properly located resilient seated test cocks and tightly closing resilient seated shutoff valves at each end of the assembly.

c. **Double Check Valve Backflow Prevention (DC) Assembly** - The term "DC Assembly" shall mean an assembly composed of two independently acting approved check valves including tightly closing resilient seated shutoff valves attached at each end of the assembly and fitted with properly located resilient seated test cocks.

9.03.08 Contamination - The term "contamination" shall mean an Impairment of the quality of the water which creates an actual hazard to the public health through poisoning or through the spread of disease by bacteria, virus, sewage, industrial fluids, or other toxic substances.

9.03.09 Cross-Connections, Controlled - A connection between a potable and non-potable water system with an approved backflow prevention assembly properly installed and maintained so that it will continuously afford the proper protection.

9.03.10 Cross-Connection Control by Containment - The term "cross-connection control by containment (service protection)" shall mean the appropriate type or method of backflow protection at the service connection.

9.03.11 Degree of Hazard - The term "degree of hazard" shall mean either a contamination (health), plumbing, pollutional (non-health) or system hazard. Listed in order of severity, each is defined as follows:

a. **Health Hazard** - The term "health hazard" shall mean an actual or potential threat of contamination of a physical or toxic nature to the District's water system or the consumer's potable water system that would be a danger to health.

b. **Plumbing Hazard** - The term "plumbing hazard" shall mean an internal or plumbing type cross-connection in a consumer's potable water system that may be either a pollutional or contamination type hazard. This includes, but is not limited to, cross-connections to toilets, sinks, lavatories, wash basins, swimming pool plumbing systems, and lawn sprinkler systems. If permitted to exist, "plumbing hazard" must be properly protected by an appropriate type of backflow prevention assembly.

c. **Pollutional Hazard** - The term "pollutional hazard" shall mean the actual, or potential, threat to the physical properties of the water system or the potability of the system but which would not constitute a health or system hazard, as defined. The potable water system would be degraded, depending on the degree or intensity of pollution, to the point where it becomes a nuisance, aesthetically objectionable, or cause minor damage to the system or its appurtenances.

d. **System Hazard** - The term "system hazard" shall mean an actual, or potential, threat of severe danger to the physical properties of the District's or consumer's potable water system which could have a delayed effect on the quality of the potable water in the system.

9.03.12 Industrial Fluids - The term "industrial fluids" shall mean any fluid or solution which may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration which would constitute a health, system, pollutional, or plumbing hazard if introduced into an approved water supply system

9.03.13 Pollution - The term "pollution" shall mean an impairment

of the quality of the water to a degree which does not create a hazard to the public's health, but which does adversely affect the aesthetic qualities of such waters for domestic work.

9.03.14 Potential - The term "potential" shall mean something perceived that can develop into or become actual.

9.03.15 Service Connection - The term "service connection" shall mean the downstream end of the water meter. This is the point of delivery to the customer's water system where the District loses jurisdiction and sanitary control of the water.

9.03.16 Water, Potable - The term "potable water" shall mean any public/private water supply that has been investigated and approved for human consumption.

9.03.17 Water, Non-Potable - The term "non potable water" shall mean a water supply that has not been approved for human consumption.

9.03.18 Water, Used - The term "used water" shall mean any water supplied by the District from a public potable water system to a customer's water system after it has passed through the service connection and is no longer under the control of the District.

9.04 Determination - The District shall conduct surveys to identify Water User Premises where Cross-Connections are likely to occur and evaluate the degree to potential health hazard to the Water which may be created as a result of conditions existing on a Water User's Premises. At a minimum, the evaluation shall consider the factors identified in Section 7585 of the California Code of Regulations. However, notwithstanding anything herein to the contrary, the District shall not be legally responsible for the abatement of any Cross-Connection which may be found to exist within a Water User's Premises.

9.05 Notice - Upon determination by the District that a Cross-Connection exists within the scope of this Section, the District shall give written notice to the affected Customer to install an Approved Backflow Prevention Assembly of a type and quality, and at a specific location, deemed appropriate by the District. The Customer shall immediately cause such device to be installed at his or her expense, and in the manner prescribed by the District, which thirty (30) days of the issuance of said notice.

9.06 Installation - The location of any Approved Backflow Prevention Assembly installed pursuant to this Section shall be at the Customer's point of connection to the district's Water, or within the Customer's Premises, or both, as determined by the District in the exercise of its discretion. If an approved Backflow Prevention Assembly is required on the Customer's connection to the District's Water, it shall be located at or near the property line of the Premises or immediately outside the building being served, but, in all cases, at a place deemed acceptable to the District that is before the first branch line leading off the service line.

9.06.01 Typical Installations - Conditions where an approved backflow prevention assembly is required on each service connection shall include, but not be limited to, the following:

a. In the case of any property having an auxiliary water supply, or one that is being fed by another outside water source, the public water system shall be protected against backflow from the premises by installing an approved Air Gap or RPP device.

b. In the case of any property on which toxic chemicals, pollutants, industrial fluids, or any other objectionable substances are handled, or stored, in such a fashion as to create an actual or potential hazard to the District's system, the public water system shall be protected against backflow from the premises by installing an approved Air Gap or RPP device.

c. In the case of any property having internal cross-connections that cannot be permanently corrected or protected against, or intricate plumbing and piping arrangements or where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross-connections exist. The public water system shall be protected against backflow from the property by installing an approved RPP device.

d. In the case of any property being served by two or more water services, water and fire services, water and irrigation services, or any combination thereof, the public water system shall be protected against backflow from the premises by installing an approved RPP device on each service connection.

e. In the case of any property having solar heating systems of a heat exchanger type that utilize a recirculating pump, air conditioning units with chemical injection pots, or coolers with recirculating pumps, the public water system shall be protected against backflow from the premises by installing an approved RPP device.

f. In the case of any agricultural property, dairy, poultry farm, or any other farm, or hobby type operation, where fecal bacteria has the potential to contaminate the water supply, or operations injecting chemicals into the on-site water lines, the public water system shall be protected against backflow from the property by installing, at a minimum, an approved RPP device.

g. In the case of any property on which there is water or a substance that would be objectionable but not hazardous to health if introduced into the public water system, the public water system shall be protected against backflow from the premises by installing an approved double check valve.

h. In the case of any single family or multi-family residential property where known health hazards exist, the public water system shall be protected against backflow from the premises by installing an approved RPP device.

9.06.02 Typical Facilities - Typical facilities where the District requires the installation of approved backflow prevention assemblies:

Apartments - 8 or more units	- RPP
Bottling plants	- RPP
Buildings- Commercial, Industrial	- RPP
Buildings- Hotels, Motels	- RPP
Buildings, multi-storied (three or more floor levels)	- RPP
Car wash facilities	- RPP
Cleaners	- RPP
Commercial buildings	- RPP
Cooling towers	- RPP
Fire systems (not interconnected, interconnected)	- RPP, DC
Hospitals- Medical buildings, Mortuaries, Autopsy Facilities, Nursing and Convalescent Homes, and Clinics	- RPP
Irrigation systems- Premises having separate systems: Parks, Playgrounds, Cemeteries, Golf Courses, Schools, Estates, and Ranches	- RPP
Laundries and Dye works	- RPP
Mobile home parks	- RPP
Multiple rental buildings - that are master metered	- RPP
Plating plants	- RPP
Sand and Gravel Plants	- RPP
Schools	- RPP
Sewage lift stations	- RPP
Sewage treatment plants	- AG, RPP
Sprinkling systems (chemically entrained)	- RPP

Steam facilities - **RPP**

Public Swimming Pools, and Pools at Apartments, Condominiums, Home OwnerAssociations, City Parks, Trailer Parks, and Mobile Home Parks - **RPP**

9.07 Inspection, Testing and Maintenance - The Customer shall cause a field test to be performed by a licensed plumbing contractor certified to test and repair Approved Backflow Prevention Assemblies at the time of installation and at least once per year thereafter. In those instances deemed necessary by the District, testing of Approved Backflow Prevention Assemblies may be required at more frequent intervals, In the event that an Approved Backflow Prevention Assembly is found to be defective, the Customer shall cause the necessary repairs and/or replacement thereof to be made. The Customer shall have an acceptance test performed after such repair and/or replacement to ensure proper operation of the Approved Backflow Prevention Assembly. All costs associated with the inspection, testing, repair, and maintenance of Approved Backflow Prevention Assemblies shall be borne by the Customer. The results of each test and records of all inspection, replacement, and repairs performed on an Approved Backflow Prevention Assembly by the Customer shall be maintained by the Customer and reported to the District in a manner deemed acceptable to the District.

9.08 Enforcement - The District may discontinue or refuse to supply water and/ or sewer service to any Premises that is not in strict compliance with the terms of this Section, or if it is found that an Approved Backflow Prevention Device has been removed or bypassed, or if unprotected Cross-Connections otherwise exist on the Premises. The District may also disconnect water and/or sewer service to any Premises if the health and safety of any Person is immediately threatened by a Cross-Connection. The District may refuse to restore such service to the Premises until the

Cross-Connection is remedied and an Approved Backflow Prevention Device is installed and operated in accordance with the Section.

9.09 Administration - The District shall appoint at least one (1) person trained in Cross-connection control to administer the provisions of this section.

SECTION 10. CUSTOMER BILLING PROCEDURES

10.01 Charges - Water charges shall commence when a water service connection is installed and the meter is set. The customer requesting service and whose name is on the water service account will be responsible for all water charges incurred by such service. The District may transfer to the account, any delinquent and/or unpaid charges from other closed or open accounts which are held by the customer and/or property owner within the District.

10.02 Tiered Water Use - The District charges for potable water use in three separate pricing tiers. Tier 1 is an estimate of indoor water use. Tier 2 is an estimate of efficient outdoor use. Tier 1 and 2 are considered a customer's water budget. Tier 3 represents water use greater than 100% of the customer's individualized water budget.

10.03 Water Budgets - A water budget is defined as the quantity of water required for an efficient level of water use by an individual customer site. The District's water budget calculation accounts for indoor, outdoor, and business process needs where applicable. Water budgets are determined by the individual needs of the customer using site-specific factors including, but not limited to, persons per household, irrigated area, weather (expressed as Evapotranspiration rate), plant factor, and days of service. Water budgets are calculated differently for residential, dedicated irrigation (landscape), and commercial mixed-use (indoor and outdoor) water service accounts. Water budgets are considered the combination of Tier 1 and/or Tier 2 water use in all customer classes subject to water budget rates. Customer classes are: Residential, Multi-Family, Irrigation, and Non-Residential.

10.04 Evapotranspiration (ET) Rate - Evapotranspiration is a measure of water transpired through plant tissue and evaporated from the soil in the planted area over a period of time. The unit of measure is expressed in inches of ET. ET measurements are obtained from weather station(s) situated in the District's service area; each station provides the data to be applied for specific zones within the District. The weather stations are calibrated on a monthly basis by a certified CIMIS (California Irrigation Management Information System) professional. Weather data is gathered on a daily basis and accumulated for each billing period.

10.05 Monthly Plant Factor - The monthly plant factor is used to more clearly define the needs of plant material. The District's monthly plant factor comes from the University of California - Riverside's research on the water needs of cool-season turf grass. The plant factors (shown in Row A of the table below), when averaged over the entire calendar year, match the annual ET Adjustment factors listed in the State of California Model Water Efficient Landscape Ordinance (AB 1881). Monthly Plant factors for special landscapes are shown in Row B of the table. Special landscapes are served by a dedicated irrigation meter and include: registered historical sites, cemeteries, parks, golf courses, sport complexes/ball fields, and school yards.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average
A.	0.61	0.64	0.75	1.04	0.95	0.88	0.94	0.86	0.74	0.75	0.69	0.60	0.8
B.	0.76	0.80	0.93	1.30	1.20	1.10	1.20	1.10	0.92	0.93	0.86	0.75	1

10.06 Residential Indoor Water Budget - A residential indoor water budget is calculated by multiplying the number of persons per household by 60 gallons for every day by the number of dwelling units by the drought factor in a billing period. For example, if there are 4 persons in a single-unit residence, the daily water budget

would be 240 gallons (4 persons x 1 unit x 1 drought factor x 60 gallons). If there are 28 days in a billing period the total indoor water budget would be 6,720 gallons (240 gallon/day x 28 days = 6,720 gallons) or 8.98 billing units (6,720 gallons ÷ 748 gallons per billing unit).

10.07 Residential Outdoor Water Budget - A residential daily outdoor water budget is calculated by multiplying the irrigated square footage associated with the water service account by the monthly Evapotranspiration rate adjusted by the monthly plant factor by the drought factor, multiplying by the conversion factor of 0.62 (square feet to gallons), and then dividing by 748 to arrive at the daily water budget in billing units. (Irrigable Square Footage x Monthly Evapotranspiration Rate x Monthly Plant Factor x drought factor x 0.62 ÷ 748 = Monthly Outdoor Budget in billing units.

10.08 Dedicated Landscape (Irrigation) Water Budget - Water budgets for dedicated irrigation accounts are calculated using the same methodology that is used for Residential Outdoor Water Budgets (described above). Dedicated Landscape accounts receive no Tier 1 allocation.

10.09 Non-Residential Mixed Use Water Budgets - Non-Residential mixed-use water budgets are based on historic use. The District calculates an average water demand for each billing period based on the water demand for the same billing periods of the prior two years. The commercial water budget may be adjusted, at the District's discretion, to accommodate changes in business processes or to allow for business growth.

10.10 Water Budget Drought Factor - Water budgets can be adjusted in times of threatened water supply availability in order to reduce water allocations for customers through the use of the drought factor. When drought factors are implemented, indoor and/or outdoor water budgets can be reduced by a designated

percentage, causing Tier 1 and/or Tier 2 allocations to be reduced, and Tier 3 'Inefficient Usage' charges to become effective at lower consumption levels.
Drought factors can also be adjusted upward to reflect improved water supplies but not above 100%. Changes in drought factors will be established by Resolution of the District Board of Directors.

10.11 Water Budget Adjustments - Water budgets can also be adjusted to reflect a significant change in a customer's unique efficient water needs. Adjustment forms are available for customers on the District's website or at the District Headquarters. Rules pertaining to applicable water budget adjustments are outlined on the water budget adjustment form.

10.12 Leak Credit - In cases where a pipe break or sprinkler malfunction leads to water use in excess of an individual water budget during one or more billing periods, the District will remove the inefficient use rate increment (difference between Tier 3 and Tier 2 rates) for up to a maximum of two concurrent billing periods ending in the billing period in which a verified repair or corrective measure was conducted. In addition, all of the following conditions must be satisfied for a Leak Credit to be issued:

- The customers water use was in excess of their water budget at the time of the repair;
- The customer has completed a leak credit form with the required documentation showing a repair was performed;
- The customer has returned to in-budget water use in the billing period immediately following the billing period during which the repair was completed;
- The customer has not applied for a leak credit within the last 12 consecutive billing periods.

The District will remove the tier 3 incremental charge by recalculating the impacted water bill(s) for all of the customer's water use, including water use as a result of the leak or malfunction, at the applicable Tier 2 pricing. A leak credit form may be obtained on the District website, or by visiting the District Administrative Offices.

10.13 Liens for Unpaid Bills - All unpaid bills will be made a lien against the property pursuant to these rules, regulations and California Water Code Section 31701.5 et.seq. Interest at the legal rate may accrue and be applied on all delinquent bills. The property owner remains responsible for all charges owed to the District whether or not the property owner actually lives on the premises or signs the application for water service.

10.14 Owner Liability - The property owner remains responsible for all charges owed to the District whether or not the property owner actually lives on the premises or signs the application for water service.

10.15 Meter Reading, Billing Period, and Due Date - The billing will be based on the periodic meter readings which will normally range between 26 and 32 days. If a meter fails to register during any period, or is known to register inaccurately, the customer shall be charged based on estimated usage. The billings for water service are mailed approximately, five days after the meter readings. Current charges are due when mailed and become past due if not paid on or before the due date. The due date shall be 20 days after the billing date. All billings are considered delivered upon mailing and the District is not responsible for non-receipt or non-delivery once mailed. Any payment envelope received by the District without a payment enclosed, or with an unsigned check, shall be considered non-payment. Checks received on payment of account and later returned by the bank unpaid shall also be considered as non-payment, and a returned check charge will be assessed. Accents with one or more returned checks may be required to make future payments by cash, money order, or charge card only.

10.16 Reactivation - If payment is not made, as stipulated above, and charges remain unpaid on the shut-off date stated on the delinquent billing notice, water service shall be discontinued, a disconnection charge assessed, and a deposit required. If an account has been disconnected for non-payment, the original bill, delinquent and disconnection charges, and a deposit must be paid before service will be reestablished. Payment for charges on an account that has been disconnected must be made in cash, money order, or charge card.

10.17 Past Due Accounts - Rates and charges which are not paid on or before the due dates shall be subject to interest charges. Interest will be calculated at a rate of one and one-half percent (1 1/2 %) on all amounts that remain unpaid at the end of each billing cycle. The District may secure unpaid charges by filing liens on real property, as provided by law or by any other method available to the District. In the event that legal action is brought to collect unpaid charges, the District shall be entitled to the payment of all costs, including attorney's fees. Defendant shall pay all costs associated with litigation rendered in favor of the District.

10.18 Billing of Separate Meters not Combined - Separate bills will be rendered for each meter installation. The District may, for its own convenience, consider each register of compound meters as a separate service and bill each as provided for herein. For its own convenience, the District may combine multiple services on one bill.

10.19 Opening and Closing Bills - Opening and closing bills for less than the normal billing period shall consist of charges for actual water consumption and a proration of the availability charge.

10.20 Delinquency Notice and Disconnection for Non-Payment - A delinquency notice shall be mailed to customers whose accounts are delinquent, warning that service is subject to disconnection unless payment is received within fifteen (15) calendar days from the date of mailing of the delinquent notice. The

delinquency notice shall indicate the amount due, including delinquent charges, and the total amount which must be paid. Notice of any delinquency in a tenant's account shall also be sent to the owner of the property.

10.21 Removal of Delinquency - At the end of each calendar year, the District shall remove one delinquency from the record of each account that has one or more delinquencies.

10.22 Suit - All unpaid rates, charges and penalties herein provided may be collected by suit.

10.23 Costs - Defendant shall pay all costs of suit in any judgment rendered in favor of the District, including reasonable attorney's fees.

10.24 Discontinuing Service - Customers desiring to discontinue service should so notify the District in writing three (3) business days prior to vacating the premises. Tenants shall be liable for on-going charges whether or not any water is used, up to the time of requested discontinuance of service. Owners shall be liable for on-going charges between tenancy, and in the event of sale, up to the date title to the property is transferred to a new owner. Owners shall also be responsible for charges incurred by a tenant, but that remain unpaid after the tenant has vacated the property. Upon notice, the District will seal off the meter and take a closing reading.

SECTION 11. COMPLAINTS AND DISPUTED BILLS

11.01 Right to Meet - The customer has the right to meet with the Financial Officer or General Manager to present any evidence supporting a complaint with regard to water service, District rules, regulations, resolutions or ordinances, or to dispute the accuracy of a bill for service or other charges.

11.02 Arrangement of Meeting - To arrange such a meeting, the customer shall contact the District office, either in writing or by telephone during normal business hours.

11.03 Presentation of Evidence - The customer may be accompanied by a friend, attorney, or other representative to meet with the Financial Officer or General Manager and may present any evidence they may have to support their position.

11.04 Unresolved Disputes - If the customer is unable to resolve his dispute with the Financial Officer or General Manager, he/she may submit the complaint in writing along with a full and detailed explanation to the Board of Directors for resolution.

11.05 Appearances Before the Board of Directors - The customer may appear before the Board of Directors at the next regularly scheduled Board meeting by notifying the District Secretary, in writing, prior to the Board meeting of the date he/she wishes to attend and what the dispute regards. The customer may then present the complaint and any evidence in support of his/her position and ask for a decision by the Board.

11.06 Delays on Action - The Board shall act promptly to resolve the dispute, but may delay a resolution of the dispute to the time of its next regular meeting in order to investigate the dispute or receive special reports related to the dispute.

11.07 Further Delays - Any further delays must be freely and willingly agreed to by the customer.

11.08 Decision of the Board - The decision of the Board of Directors shall be final. Should the Board not render a decision within sixty (60) days of application to the Board, this failure to act shall be deemed a denial of the requested action, unless both parties have agreed to extend the resolution period.

11.09 Discontinuance of Service - No water or other service shall be discontinued pending the final resolution of a dispute.

11.10 Adjustment for Fast Meter Errors - If a meter tested at the request of a customer is found to be more than five percent (5%) fast, the excess charges for the

time service was rendered the customer, or excess charges for a period of six months, whichever shall be the lesser, shall be refunded to the customer.

11.11 Adjustment for Slow Meter Errors - If a meter tested at the request of a customer is found to be more than ten percent (10%) slow and shows evidence of tampering, the District may bill the customer for the amount of the undercharge based upon corrected meter readings for the period, not exceeding six months, that the meter was in use.

11.12 Non-Registering Meters - If a meter is found to be not registering, the charges for service shall be based on the estimated consumption. Such estimates shall be made from previous consumption for a comparable period, or by such other method as is determined by the District, and its decision shall be final.

SECTION 12. DISCONNECTION FOR NONPAYMENT

12.01 Disconnection for Non-Payment - Water service shall be discontinued if payment for water service is not made within fifteen (15) calendar days of the date of mailing the delinquent notice. At least forty-eight (48) hours prior to termination, the District will make a reasonable attempt to notify the resident of the affected property by delivering, or causing to be delivered, a final disconnect notice to the property. At no time shall the District discontinue water service at a time when the District offices are closed.

12.01.01 Tenant Accounts - If water and other services to an account held in a tenant's name are discontinued for non-payment, the account can be transferred, at the discretion of the District, to the owner's name prior to reconnection of service. The account will remain in the owner's name as long as the tenant occupies the premises.

12.02 Complaint Procedures for Disconnection - Service disconnection for non-payment of bills or for violation of any of the District's rules, regulations,

ordinances or resolutions is subject to the complaint procedures specified in Section 11 herein.

12.03 Refusal or Neglect to Pay Debt - Any amount due is a debt to the District and any person, firm or corporation failing, neglecting, or refusing to pay this debt may be subject to a civil action for the amount due in a court of competent jurisdiction.

12.04 Lien Against Property for Non-Payment - Any unpaid debt will be deemed a lien against the real property to which service is rendered as specified herein and California Water Code Section 31701.5 et.seq.

12.05 Service Charges for Violations - If water service is discontinued for violation of any of the District's rules, regulations, resolutions or ordinances, service shall not be re-instituted until the violations have been corrected and all applicable service charges and fees as provided for herein are paid in full by cash , money order, or cashier's check.

12.06 Partial Payments - A partial payment of a delinquent account may be accepted and credited to a customer's account, but such partial payment shall not be cause for removing the account from a delinquent status and shall not preclude the meter from being turned off for delinquency.

12.07 Authorization for Continuance of Service for Delinquent Accounts - The General Manager or his designee may authorize continuation of service to a delinquent account if financial arrangements satisfactory to the District have been established.

SECTION 13. ADDING DELINQUENT CHARGE TO TAX ROLL

13.01 Report of Delinquent and Unpaid Charges - A report of delinquent and unpaid charges for water and other services which remain unpaid and delinquent for sixty (60) days or more on July 1st of each year shall be prepared and submitted to

the Board for consideration as tax liens. The unpaid delinquent charges listed in said report for each parcel of property shall be fixed at the amount listed in said report.

13.02 Adoption and Filing of Report - The Secretary shall file with the County Assessor of the County of San Bernardino and the Board of Supervisors of the County of San Bernardino, in the time and manner specified by the County Assessors and Board of Supervisors, a copy of such written report with a statement endorsed thereon over the signature of the Secretary, that such a report has been adopted and approved by the Board of Directors and that the County Assessor shall enter the amount of such charges against the respective lots or parcels of land as they appear on the current assessment roll.

13.03 Collection of Delinquent and Unpaid Charges - The amount of any charges for water and/or other services included in the report prepared and submitted pursuant to Sections 13.01 and 13.02 above shall be added to and become a part of the annual taxes next levied upon the property upon which the water for which the charges are unpaid was used, and upon the property subject to the charges for any other District services, and shall constitute a lien on that property as of the same time and in the same manner as does the tax lien securing such annual taxes as provided in Section 12.04 above.

SECTION 14. CHARGES AND DEPOSITS

14.01 Adoption - The amount of all charges and deposits described herein shall be adopted by Board resolution.

14.02 Consumption Charge - The consumption charge is the charge per hundred cubic feet for all water registered by the water service meter.

14.03 Delinquency Charges - A delinquent charge shall be added to each delinquent account at the time any amount becomes delinquent, provided that no delinquent charge shall be made on any account which at the time has no delinquencies of record. When a delinquent charge is made, such charge shall be

added to the delinquent account as of the date the account becomes delinquent and the charge shall become an inseparable part of the amount due as of that time.

14.04 Disconnect Notice Charge - The disconnect notice charge is the charge which covers reasonable District costs to notify customers that their water service is subject to impending termination.

14.05 Disconnect/Reconnect Charge - The disconnect/reconnect charge is the charge which covers the reasonable District costs for disconnection and reconnection of service connections which are in violation of the provisions contained herein.

14.06 Fire Hydrant Installation Charge - The charge for installation of fire hydrants as may be required.

14.07 Fire Service Connection Charge - The charge for installation of fire services as may be required.

14.08 Fire Service Standby Charge - The fire service standby charge is the monthly standby charge per inch diameter of the District fire service meter. Water use through this service is limited to emergency fire requirements only.

14.09 Inspection Charge - Where a customer service connection or facility requires inspection by District personnel, the customer shall be charged for such inspection.

14.10 Meter Test Charge - The meter test charge is the charge which covers the District costs for removing, bench testing, and reinstalling the water meter to be tested.

14.11 Security Deposit - The Security deposit insures payment of minimum District charges. Upon discontinuance of service the security deposit shall be applied to reduce any outstanding charges on any accounts held by the customer with the District. The amount of deposit shall be established by the Board of Directors in the resolution on fees. The security deposit shall be refunded to the customer as provided in Section 6.04.02 herein.

14.12 Special Facility Charge - A special facility charge shall be for the development of a limited service area whenever special facilities including, but not limited to, booster stations, hydropneumatic stations and pressure regulators are required. The charge to be made to a developer or owner of land that is considered by the District to be within a limited service area shall be based upon the developer's or landowner's proportionate share of the cost of the installation of such special facility. Such proportionate share to be borne by the developer or landowner shall be based on the percentage of such development to the entire limited service area to be served by the special facilities and the difference between the cost of facilities to serve the same number of acres or area under normal conditions and the cost of facilities to serve the acreage or area under special conditions at a higher cost.

14.13 Water System Charge - The system charge is the monthly availability charge applicable to all metered services, and shall apply whether or not premises served by the meter are occupied.

14.14 Unauthorized Use of Water Charge - The unauthorized use of water charge shall be charged to any person, organization or agency for each unauthorized use of District water, or for tampering in any manner with any meter belonging to the District, in which tampering shall affect the accuracy of such meter. Where the unauthorized use of water or tampering results in the District's action to remove the meter, there shall be a charge for the removal and re-installation.

14.15 Front Footage Charge - The front footage charge is a one-time reimbursement to the District for previously constructed water mains adjacent to all sides of an unimproved property to be served.

14.16 Water Main Extension Charge - The water main extension charge is for the construction of a water main extending to the far side of the property to be served. This charge shall be based on the prevailing rates of time and material per

District approved plans. The customer shall be responsible to provide the plans and for all applicable Engineering Services charges described in Section 14.18.

14.17 Water Service Connection Charge - The water service connection charge is the charge for the type and size of water service connection desired. Such regular charge shall be paid in advance by the applicant. The water service connection charge shall consist of an installation charge and a capacity charge. Where there is no regular charge, the District reserves the right to require the applicant to deposit an amount equal to the estimated cost of such service connection.

14.17.01 Installation Charge - The installation charge shall represent the District's cost to furnish and install the specified service.

14.17.02 Capacity Charge - The capacity charge is a fee for that incremental portion of the entire water system and District facilities that will be used by a new service.

14.18 Water System Design Charge - A non-refundable water system design charge shall be required for all main extensions, service connection and/or special facilities requiring the preparation of engineering plans and drawings.

14.19 Engineering Services Charge - The Engineering Services charge is a fee for the District's time and effort spent on assisting customers who have a requirement to construct water main extensions, or other water facilities, that must meet District needs and conform to District standards. This fee includes time and effort the District spends on plan checking, plan and easement development, and all other related work. Prior to submission of any documents requiring work by the District, a non-refundable minimum charge in the amount of 7.5% of the engineer's estimated cost for the project shall be submitted to the District. The work will be accomplished on a time and effort basis. Should the District use more funds than the original charge, the additional billed costs must be paid prior to allowing water service to the project.

14.20 Construction Water Charge - The construction water charge is a temporary flat rate water charge. It is only available during the construction phase of a new building for services 1" in diameter or less. It is available for a period not exceeding six months.

14.21 Fire Flow Test Charge - The fire flow test charge is a flat rate to cover the District's time and effort for testing parts of the water system to obtain fire flow test data and calculate results as requested.

14.22 Valve Deposit - The valve deposit is a refundable charge that is used to insure all valve cans and caps are constructed to final grade before a water system construction project is complete. The District will accept a guarantee bond in lieu of a cash deposit. The fee will be returned or the bond released when valve cans and caps are constructed to final grade by the developer's contractor and verified by the District.

14.23 Service Initiation Charge - The service initiation charge is a non refundable charge which covers the reasonable District costs for initiating water service.

14.24 Returned Check Charge - A returned check charge is a charge which covers the reasonable administrative cost and banking charges for processing a returned check.

14.25 Temporary Service Charge - A temporary service is available through the use of a fire hydrant. A customer deposit for the temporary service will be required. All other applicable service charges shall apply.

14.26 Charges and Deposits - All rates, charges, fees, penalties, fines, deposits, and other methods of assessment are set by the District's Board of Directors. The current rates and charges are set forth in Exhibit A to this current rate resolution and may be revised from time to time pursuant to the District's procedures and applicable law. The General Manager/CEO, or appointed designee, may approve

adjustment to any charges, late penalties, past due account fees or service deposits pursuant to the District's procedures and applicable law.

SECTION 15. WATER CONSERVATION

15.01 Waste or Nuisance Water and Other Substances - It is unlawful for any person, firm or corporation to deposit, drain, wash, or allow to run or divert water, mud or sand into, or upon, any public road, highway, street, alley, drainage ditch, storm drain, flood control channel owned or controlled by any public agency within the District. When a written application is filed with the District, and approved by the General Manager, a permit may be granted with terms and conditions and applicable fees as it may deem appropriate to impose to such person. For purposes of enforcement of this section, the owner of the meter, or property, which is the source of the "waste or nuisance water and other substances" as defined herein will be considered the responsible party. Any violations cited hereunder, and defined as being detrimental to public health, safety or welfare, will be borne by the responsible party.

15.02 Conservation Measures - Stage No.1 Normal Conditions: Voluntary Conservation Measures - Normal conditions shall be in effect when the District is able to meet all the water demands of its customers in the immediate future. During normal conditions all water users should continue to use water wisely, to prevent the waste or unreasonable use of water, and to reduce water consumption to that necessary for ordinary domestic and commercial purposes.

15.03 Stage No. 2 - Threatened Water Supply Shortage - In the event of a threatened water supply shortage which could affect the District's ability to provide water for ordinary domestic and commercial uses, the Board of Directors shall hold a public hearing at which consumers of the water supply shall have the opportunity to protest and to present their respective needs to the District. The Board may then, by

resolution, declare a water shortage condition to prevail, and the following conservation measures shall be in effect:

15.03.01 Exterior Landscape Plans - Exterior landscape plans for all new development shall provide for timed irrigation, shall consider the use of drought resistance varieties of flora, and shall only utilize drip or micro-spray irrigation. Such plans shall be presented to and approved by the District prior to issuance of a water service letter.

15.03.02 Excessive Irrigation and Related Waste - No property within the East Valley Water District service area shall cause or permit the use of water for irrigation of landscaping or other outdoor vegetation, plantings, lawns or other growth, to exceed the amount required to provide reasonable irrigation of same, and shall not cause or permit any unreasonable or excessive waste of water from said irrigation activities or from watering devices or systems. The free flow of water away from an irrigated site shall be presumptively considered excessive irrigation and waste as defined in Section 3 herein.

15.03.03 Agricultural Irrigation - Persons receiving water from the District who are engaged in commercial agricultural practices, whether for the purpose of crop production or growing of ornamental plants shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. Upon the request of the General Manager, these persons may be required to prepare a plan describing their irrigation practices and equipment, including but not limited to, an estimate of the efficiency of the use of water on their properties.

15.03.04 Commercial Facilities - Commercial and industrial facilities shall, upon request of the General Manager, provide the District with a plan to conserve water at their facilities. The District will provide these facilities with information regarding the average monthly water use by the facility for the last two year period, or the State of California approved conservation base year. The facility

will be expected to provide the District with a plan to conserve or reduce the amount of water used by that percentage deemed by the Board of Directors to be necessary under the circumstances. After review and approval by the General Manager, the water conservation plan shall be considered subject to inspection and enforcement by the District.

15.03.05 Parks, Golf Courses, Swimming Pools, and School Grounds - Public and private parks, golf courses, swimming pools and school grounds which use water provided by the District shall use water for irrigation and pool filling between the hours of 8:00 p.m. and 6:00 a.m.

15.03.06 Medians and Bordering Parkways - Medians and bordering parkways located within the right-of-way are prohibited from using potable water to irrigate turf or other high water use plant material as identified by the Water Use Classifications of Landscaping Species (WUCOLS) Guide. Bordering parkways are considered the strips of non-functional ornamental turf adjacent to the street. The continued irrigation and preservation of trees is encouraged.

15.03.07 Domestic Irrigation - Upon notice and public hearing, the District may determine that the irrigation of exterior vegetation shall be conducted only during specified hours and/or days, and may impose other restrictions on the use of water for such irrigation. The irrigation of exterior vegetation at other than these times shall be considered to be a waste of water.

15.03.08 Swimming Pools - All residential, public and recreational swimming pools, of all size, shall use evaporation resistant covers and shall re-circulate water. Any swimming pool which does not have a cover installed during periods of non-use shall be considered a waste of water.

15.03.09 **Decorative Features** - Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.

15.03.10 Run-off and Wash-down - No water provided by the District shall be used for the purposes of wash-down of impervious areas, without specific written authorization of the General Manager. Any water used on premises that is allowed to escape the premises and run off into gutters or storm drains shall be considered a waste of water.

15.03.11 Vehicle Washing - The washing of cars, trucks or other vehicles is not permitted, except with a hose equipped with an automatic shut-off device, or a commercial facility so designated on the District's billing records.

15.03.12 Drinking Water Provided by Restaurants - Restaurants are requested not to provide drinking water to patrons except by request.

15.03.13 Hotel and Motel - Hotels and motels must offer their guests the option to not have their linens and towels laundered daily, and must prominently display this option in each room.

15.03.14 General Manager Emergency Authority - The Board of Directors appoints the General Manager/CEO the authority, to implement and enforce measures necessary to remain in compliance with emergency statewide mandatory conservation measures. Actions taken by the General Manager/CEO in accordance with State regulations outside of those listed in this Ordinance must be reported to the Board at the next regularly scheduled meeting.

15.04 Stage No.3 - Water Shortage Emergency: Mandatory Conservation Measures - In the event of a water shortage emergency in which the District may be prevented from meeting the water demands of its customers, the Board of Directors shall, if possible, given the time and circumstances, immediately hold a public hearing at which customers of the District shall have the opportunity to protest and to present their respective needs to the Board. No public hearing shall be required in the event of a breakage or failure of a pump, pipeline, or conduit causing an immediate emergency. The General Manager is empowered to declare a water shortage

emergency, subject to the ratification of the Board of Directors within 72 hours of such declaration, and the following rules and regulations shall be in effect immediately following such declarations:

15.04.01 Prohibition - Watering of parks, school grounds, golf courses, lawn water, landscape irrigation, washing down of driveways, parking lots or other impervious surfaces, washing of vehicles, except when done by commercial car wash establishments using only recycled or reclaimed water, filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes are prohibited.

15.04.02 Construction Meters - No new construction meter permits shall be issued by the District. All existing construction meters shall be removed and/or locked.

15.04.03 Commercial Nurseries and Livestock - Commercial nurseries shall discontinue all watering and irrigation. Watering of livestock is permitted as necessary.

15.05 Implementation and Termination of Mandatory Compliance Stages - The General Manager of the District shall monitor the supply and demand for water on a daily basis to determine the level of conservation required by the implementation or termination of the Water Conservation Plan Stages and shall notify the Board of Directors of the necessity for the implementation, or termination, of each stage. Each declaration of the Board of Directors implementing, or terminating, a water conservation stage shall be published at least once in a newspaper of general circulation, and shall be posted at the District offices. Each declaration shall remain in effect until the Board of Directors otherwise declares, as provided herein.

15.06 Exceptions - Application for Exception Permits - The General Manager may grant permits for uses of water otherwise prohibited under the provisions of this Ordinance if he finds and determines that restrictions herein would either:

15.06.01 Hardship - Cause an unnecessary and undue hardship to the water user or the public; or

15.06.02 Emergency - Cause an emergency condition affecting the health, sanitation, fire protection or safety of the water use or of the public.

15.06.03 Exemptions Granted - Such exceptions may be granted only upon written application therefor. Upon granting such exception permit, the General Manager may impose any conditions he determines to be just and proper.

15.07 Enforcement, Inspection - Authorized employees of the District, after proper identification may, during reasonable hours, inspect any facility having a water conservation plan, and may enter onto private property for the purpose of observing the operation of any water conservation device, irrigation equipment or water facility. Employees of the District may also observe the use of water or irrigation equipment within the District from public rights-of-way.

15.08 Criminal Penalties for Violation - Water Code Section 31029 makes any violation of this Ordinance a misdemeanor and upon conviction thereof, the violator shall be punished by imprisonment, fine or by both fine and imprisonment as may be allowed by law.

15.09 Civil Penalties for Violation - In addition to criminal penalties, violators of the mandatory provisions of this Ordinance shall be subject to civil action initiated by the District as follows:

15.09.01 First Violation: For a first violation, the District shall issue a written notice of violation to the water user violating the provisions of this Ordinance. The notice shall be given pursuant to the requirements of Section 15.10 below.

15.09.02 Second Violation: $100.00 Surcharge - For a second violation of this Ordinance within a 12 month period, or failure to comply with the notice of violation within 30 days after notice of imposition, a surcharge of $100.00 is hereby imposed for the meter through which the wasted water was supplied.

15.09.03 Third Violation: $300.00 Surcharge - For a third violation of this ordinance within a 12 month period, or for continued failure to comply within 30 days after notice of an imposition of second violation sanctions, a one month penalty surcharge in the amount of $300.00 is hereby imposed for the meter through which the wasted water was supplied.

15.09.04 Fourth Violation: $500.00 Surcharge - For a fourth violation of this ordinance within a 12 month period, or for continued failure to comply within 30 days after notice of an imposition of third violation sanctions, a one month penalty surcharge in the amount of $500.00 is hereby imposed for the meter through which the wasted water was supplied.

15.09.05 Fifth Violation: $500.00 Surcharge and/or Installation of a Flow Restrictor - For a fifth violation of this ordinance within a 12 month period, or for continued failure to comply within 30 days after notice of an imposition of fourth violation sanctions, a one month penalty surcharge in the amount of $300.00 is hereby imposed for the meter through which the wasted water was supplied. In addition to the surcharge, the District may, at its discretion, install a flow-restricting device at such meter with a one-eighth inch (1/8") orifice for services up to one and one half (1-1/2") inch size, and comparatively sized restrictors for larger services, on the service of the customer at the premises at which the violation occurred for a period of not less than forty-eight (48) hours. The charge to the customer for installing a flow-restricting device shall be based upon the size of the meter and the actual cost of installation but shall not be less than that provided in the District's Rules and Regulations. The charge for removal of the flow-restricting device and restoration of normal service shall be as provided in the District's Rules and Regulations.

15.09.04 Subsequent Violations: Discontinuance of Service - For any subsequent violation of this Ordinance, while in Stage No. 3, within the twenty-four (24) calendar months after a first violation as provided in Section 15.09.01 hereof, the

penalty surcharge provided in Section 15.09.05 hereof shall be imposed and the District may discontinue water service to that customer at the premises or to the meter where the violation occurred. The charge for reconnection and restoration of normal service shall be as provided in the Rules and Regulations of the District. Such restoration of service shall not be made until the General Manager of the District as determined that the water user has provided reasonable assurances that future violations of this Ordinance by such user will not occur.

15.10 Notice - First Violation - For a first violation, written notice shall be given to the customer and/or property owner personally or by regular mail.

15.10.01 Subsequent Violations - If the penalty assessed is a surcharge for a second, third, fourth, fifth, or subsequent violation, notice may be given by regular mail.

15.10.02 Violations Involving Installation of Flow-Restrictors or Discontinuance of Water Service - If the penalty assessed is, or includes, the installation of a flow restrictor or the discontinuance of water service to the customer for any period of time, notice of the violation shall be given in the following manner:

a. Personal Service - By giving written notice thereof to the occupant and/or property owner personally; or if the occupant and/or property owner is absent from his/her place of residence and from his/her assumed place of business, by leaving a copy with some person of suitable age and discretion at either place, and sending a copy through the United States mail addressed to the occupant and/or owner at his/her place of business or residence; or

b. Posting - If such place of residence and business cannot be ascertained, or a person of suitable age or discretion cannot be located, then by affixing a copy in a conspicuous place on the property where the failure to comply is occurring and also by delivering a copy to a person there residing, if such person can

be found, and also sending a copy through the United States mail addressed to the occupant at the place where the property is situated and the owner if different.

15.10.03 Form of Notice - All notices provided for in this Section shall contain, in addition to the facts of the violation, a statement of the possible penalties for each violation and a statement informing the occupant/owner of his/her right to hearing on the violation.

15.11 Hearing - Any customer or property owner against whom a penalty is levied pursuant to this ordinance shall have a right to a hearing, in the first instance by the General Manager, with the right of appeal to the Conservation Commission, and ultimately to the Board of Directors, on the merits of the alleged violation upon the written request of that customer within fifteen (15) days of the date of alleged violation to the District Clerk. At the next regularly scheduled commission meeting, the customer may then appear and present any evidence in support of his position and ask for a decision by the Conservation Commission. Customers may then appeal the Conservation Commission's decision at the next regularly scheduled Board Meeting.

15.11.01 - **Conservation Commission**- While Stage No. 2 or Stage No. 3 of this plan are activated, the District may establish a Conservation Commission consisting of three (3) District customers. The Conservation Commission is authorized to heal appeal requests for Water Supply Shortage violations and make recommendations on their enforcement to the Board of Directors.

15.12 Delays on Action - The Conservation Commission and Board shall act promptly to resolve the dispute, but may delay a resolution of the dispute to the time of its next regular meeting in order to investigate the dispute or receive special reports related to the dispute.

15.13 Decision of the Board - The decision of the Board of Directors shall be final. Should the Board not render a decision within sixty (60) days of application to

the Board, the failure to act shall be deemed a denial of the requested action, unless both parties have agreed to extend the resolution period.

SECTION 16. EFFECTIVE DATE

This Ordinance shall take effect as of the 1st day of June 2015.

Adopted this 27th day of May 2015

ROLL CALL:
Ayes: Carrillo, Coats, Coleman, Morales, Shelton
Noes: None
Absent: None
Abstain: None

James Morales, Jr., Board President

ATTEST:
John J. Mura, Secretary

SECTION FOUR

WATER SHORTAGE CONTINGENCY PLAN

Urban Water Shortage Contingency Analysis

This Contingency Analysis has been prepared in accordance with the guidelines in the California Water Code Section 10632 (a through I), established by the Department of Water Resources.

The City's municipal code Chapter 13.04 along with Ordinance 443 outline the stages of action to be implemented during a water shortage. The purpose is to provide water conservation measures in order to minimize the effect of a water shortage on the citizens of, and the economic well-being of the community. The municipal code adopts provisions that will significantly reduce the wasteful and inefficient consumption of water, thereby extending the available water resources required for the domestic, sanitation, and fire protection needs of the citizens served by the City while reducing the hardship on the City and the general public to the greatest extent possible.

The City's water production during the recent droughts has been sufficient to supply customer demands. The City has not had to implement Stages 2 or 3 of Ordinance 443. This is largely due to the City's construction of adequate water production facilities to meet adverse conditions. By continuing this philosophy, the City will be able to meet future demands, except under some extreme conditions where they may be forced, for a temporary period of time, to exercise the mandatory provisions of the City's Municipal Code.

Priorities for use of available water, based on California Water Code Chapter 3 and community input, are:

Health & Safety – Interior residential and fire fighting
Commercial & Governmental -- Maintain jobs and economic base
Existing Landscaping -- Especially trees and shrubs
New Demand -- Projects without permits when shortage is declared

4.1 Stages of Action

(California Water Code Section 10632 (a))

In Ordinance 443, the City has developed a three-stage action plan that includes voluntary and mandatory stages. The stages of action to be undertaken by the City in response to water supply shortages are described below along with an outline of specific water supply conditions which are applicable to each stage and the various restrictions and prohibitions included in the ordinance.

Supply Shortage Triggering Levels

The director of public services of the City shall monitor the supply and demand for water on a daily basis to determine the level of conservation required by the implementation or termination of the water conservation plan stages and shall notify the City Council of the necessity for the implementation or termination of each stage. Each declaration of the City Council implementing or terminating a water conservation stage shall be published at least once in a newspaper of general circulation, and shall be posted at the City's offices. Each declaration shall remain in effect until the City Council otherwise declares, as provided in this section. (Ord. 443 § 1 (part), 1991)

Exceptions may be granted by the director of public services if he finds and determines that the restrictions would cause hardship or cause an emergency condition.

In order to minimize the social and economic impact of water shortages, the City will manage water supplies prudently. This Plan is designed to provide a supply during a severe or extended water shortage as nearly normal as possible. The water shortage action plan triggering levels were established by the City Council to ensure that the above policy statements are implemented. These were shown in the Worst Case Water Supply Availability.

As the shortages become evident to the City Manager, he invokes the appropriate Stage, unless the City Council votes otherwise. Shortages may trigger a Stage at any time.

STAGE 1 - Normal Conditions Voluntary conservation measures
STAGE 2 - Threatened Water Supply Shortage - 25% Reduction in Supply
STAGE 3 - Water Shortage Emergency
Mandatory Conservation Measures - 50% Reduction in Supply

Table 4-1
Water Supply Shortage Stages and Conditions
Rationing Stages

Stage No.	Water Supply Conditions	% Shortage
Stage 1	Normal	Normal
Stage 2	Threatened Water Supply Shortage	25% Reduction in Supply
Stage 3	Water Shortage Emergency	50% Reduction in Supply

Stage 1 - Normal Conditions - Voluntary Conservation Measures
Normal conditions shall be in effect when the City is able to meet all the water demands of its customers in the immediate future. During normal conditions all water users should continue to use water wisely, to prevent the waste or unreasonable use of water, and to reduce water consumption to that necessary for ordinary domestic and commercial purposes. (Ord. 443 § 1 (part), 1991)

Water rules and regulations in the City of Loma Linda are stipulated by Resolution No. 2241 (Adopted July 23, 2002), shown in the Appendix, hereby repealing resolution 1987. All revenues from water services become City revenues, solely for the purpose of operating, maintaining and expanding the water system and facilities.

Salient features of the water rate Resolution No. 2241 are: (1) a bi-monthly water usage charge based on meter size and minimum consumption, also its location (either inside or outside the City limits), (2) a quantity charge which increases substantially for larger blocks of usage. In general, the City of Loma Linda's rate schedule per Resolution No. 2241 is comprehensive, conservation structured and reflects the policy of direct payment per services rendered.

Resolution No. 2241 - Rate Schedule (Effective August 1, 2002)
Bi-Monthly Rates per CCF (Hundred Cubic Feet = 748 Gallons)

Table 4-2
Minimum Bi-Monthly Charge by Meter Sizes

Meter Size	Inside The City	Outside The City
5/8" x 3/4"	$18.40	$21.26
1"	$33.67	$38.73
1 ½"	$69.32	$79.72
2"	$161.41	$185.62
3"	$330.87	$375.21
4"	$502.42	$654.28
6"	$678.56	$780.34
8"	$766.62	$881.61
10"	$854.71	$982.92

Table 4-3
Water Rate Schedule

Water Usage	Inside The City	Outside The City
From 0 to 1,000 cu. ft.	$ .873	$ 1.004
From 1,001 to 40,000 cu. ft.	1.163	1.337
From 40,001 to 80,000 cu. ft.	1.279	1.471
80,001 cu. ft. and over	1.397	1.607

Stage 2 - Threatened Water Supply Shortage

In the event of a threatened water supply shortage which could affect the City's ability to provide water for ordinary domestic and commercial uses, the City Council shall hold a public hearing at which consumers of the water supply shall have the opportunity to protest and to present their respective needs to the City. The City Council may then, by resolution, declare a water shortage condition to prevail, and the following conservation measures shall be in effect.

Exterior Landscape Plans - Landscape plans for all new commercial and industrial developments shall provide for timed irrigation and shall consider the use of drought resistant plants. Such plans shall be presented and approved by the City prior to issuance of a water service letter.

Excessive Irrigation and Related Waste - No customer of the City or other person acting on behalf of or under the direction of a customer shall cause or permit the use of water for irrigation of landscaping or other outdoor vegetation, plantings, lawns or other growth, to exceed the amount required to provide reasonable or excessive waste of water from such irrigation activities or from watering devices or systems. The free flow of water away from an irrigated site shall be presumptively considered excessive irrigation and waste as defined.

Agricultural Irrigation - Persons receiving water from the City who are engaged in commercial agricultural practices, whether for the purpose of crop production or growing of ornamental plants shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. Upon the request of the director of public services, these persons may be required to prepare a plan describing their irrigation practices and equipment, including but not limited to, an estimate of the efficiency of the use of water on their properties.

Commercial Facilities - Commercial and industrial facilities shall, upon request of the director of public services, provide the City with a plan to conserve water at their facilities. The City will provide these facilities with information regarding the average monthly water use by the facility for the last two-year period. The facility will be expected to provide the City with a plan to conserve or reduce the amount of water used by that percentage deemed by the City Council to be necessary under the circumstances. After review and approval by the director of public services, the water conservation plan shall be considered subject to inspection and enforcement by the City.

Parks, Golf Courses, Swimming Pools and School Grounds - Public and private parks, golf courses, swimming pools and school grounds which use water provided by the City shall use water for irrigation and pool filling between the hours of six p.m. and six a.m.

Domestic Irrigation - Upon notice and public hearing, the City may determine that the irrigation of exterior vegetation shall be conducted only during specified hours and/or days, and may impose other restrictions on the use of water for such irrigation. The irrigation of exterior vegetation at other than these times shall be considered to be a waste of water.

Swimming Pool - All residential, public and recreational swimming pools, of all sizes, shall use evaporation resistant covers and shall re-circulate water. Any swimming pool which does not have a cover installed during periods of non-use shall be considered a waste of water.

Runoff and Wash down - No water provided by the City shall be used for the purposes of Wash down of impervious areas without specific written authorization of the director of public services. Any water used on a premises that is allowed to escape the premises and run off into gutters or storm drains shall be considered a waste of water.

Vehicle Washing - The washing of cars, trucks or other vehicles is not permitted, except with a hose equipped with an automatic shut-off device, or at a commercial facility designated and so designated on the City's billing records.

Drinking Water Provided by Restaurants - Restaurants are requested not to provide drinking water to patrons except by request. (Ord. 443 § 1 (part), 1991)

Stage 3 - Water Shortage Emergency - Mandatory Conservation Measures

In the event of a water shortage emergency in which the City may be prevented from meeting the water demands of its customers, the City Council shall, if possible given the time and circumstances, immediately hold a public hearing at which customers of the City shall have the opportunity to protest and to present their respective needs to the City Council. No public hearing shall be required in the event of a breakage or failure of a pump, pipeline, or conduit causing an immediate emergency. The director of public services is empowered to declare a water shortage emergency, subject to the ratification of the City Council within seventy-two hours of such declaration, and the following rules and regulations shall be in effect immediately following such declarations:

Prohibition - Watering of parks, school grounds, golf courses, lawn watering, landscape irrigation, Wash down of driveways, parking lots or other impervious surfaces, washing of vehicles, except when done by commercial car wash establishments using only recycled or reclaimed water, filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes are prohibited.

Restaurants - Restaurants shall not serve drinking water to patrons except by request.

Construction Meters - No new construction meter permits shall be issued by the City. All existing construction meters shall be removed and/or locked.

Commercial Nurseries and Livestock - Commercial nurseries shall discontinue all watering and irrigation. Watering of livestock is permitted as necessary. (Ord. 443 § 1 (part), 1991)

4.2 Estimate of Minimum Supply for Next Three Years
(California Water Code Section 10632 (b))

The City receives water supplies from City owned and operated groundwater wells which derives its water from the Bunker Hill ground water basin. The location of Loma Linda's existing and projected source wells are all within the portion of the Bunker Hill Basin which is the last part of the basin that would experience water loss. The Basin contains over 5,000,000 acre feet of water and has sufficient supply for many consecutive drought years without any natural recharge. Ground water pumping within this basin has been partially controlled by a court judgement, which determined that the safe yield for the Bunker Hill Basin to be 232,100 acre-feet per year. It is believed that this control on pumping, combined with State Project Water deliveries and annual rainfall is sufficient to replenish the basin storage level for all potential future demands.

During recent droughts, water levels in neighboring basins have declined over 300 feet while levels in the City's area of the Bunker Hill Basin only dropped 60 feet, for the same time period. Due to the relative stability of the groundwater level in the lower portion of the Bunker Hill Basin, other local water purveyors are shifting their main source of supply to the Bunker Hill Basin to offset production levels in times of drought.

The following table provides an estimate of the worst case water supply available from the City's wells for the next three years. The supply is based on 16 hours per day of pumping and 240 days. Should the City required additional supply they have the option of pumping more hours or more days.

Table 4-4
Worst Case Water Supply Availability
Three-Year Estimated Minimum Water Supply (AF/Yr)

Source	Normal Supply Year (1996)	Year 1 (2006)	Year 2 (2007)	Year 3 (2008)
Bunker Hill Groundwater Wells	4,953	7,466	7,602	9,723

The normal supply year of 1996 shown above is based on the actual production figures for that year. The available supply for years 1, 2 and 3 includes the production from existing City wells in addition to the planned supply projects that will commence during this time frame. As can be seen from Table 4-4 the worst case water supply will be sufficient to meet the projected demands for the City's service area.

4.3 Catastrophic Supply Interruption Plan
(California Water Code Section 10632 (c))

Extended multi-week supply shortages due to natural disasters or accidents which damage all water sources are unlikely, but would be severe if more than one of the City's wells were out of service. The City's storage reservoirs hold 14.9 million gallons, which is sufficient treated water to meet the health and safety requirements (50) gpc for 23,000 people for 12 days. This assumes zero non-residential use.

In the event of a power shortage, the City has two portable backup generators at their disposal that they can utilize to provide supply from one well and boosting within the distribution system.

The City also has interconnections with two local water purveyors for emergency supplies. Those are the City of San Bernardino and the City of Redlands. The City also has an interconnect with the Loma Linda University water system as an emergency connection. There is no formal agreement for the exchange of water between the City and the University; however, the connection is metered to monitor any exchange of water between the two entities.

4.4 Prohibitions, Penalties, and Consumption Reduction Methods
(California Water Code 10632 (d-f))

Consumption limits in the progressively restrictive stages are imposed on different uses. These are based on percentage reductions in water allotments, and restrictions on specific uses. The individual customer allotments will be based on the previous year's use. This gives the City a basis for reviewing appeals. The specific percentage reductions at each stage are listed in Table 4-1. The City has established block rate schedules for each stage of drought to encourage compliance with the restrictions.

Mandatory Prohibitions on Water Use
Mandatory provisions to reduce water use during the different Stages are summarized earlier in this chapter. Provisions of Ordinance No.443, Section 16 Water Conservation, prohibit the watering of parks, school grounds, golf courses, lawn watering, landscape irrigation, wash-down of driveways, parking lots or other impervious surfaces, washing of vehicles, except when done by commercial car wash establishments using only recycled or reclaimed water, filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes.

Penalties & Charges for Excessive Use
Penalties and charges for excessive use are the heart of Ordinance 443 and the strongest incentive for conservation among the users. The City of Loma Linda's current rate structure as summarized in Table-4-3, Water Rate Schedule, as adopted July 23, 2002 per Resolution No. 2241 is included in the Appendix.

The Water Department Manager has classified each customer. Each customer is made aware of their classification. New customers and connections will be notified at the time service commences. In a disaster, prior notice of allotment may not be possible; notice will be provided by other means. Any customer may appeal the Water Department Supervisor's classification on the basis of use or the percentage on the basis of incorrect calculation. Appeals shall be processed as set forth in Ordinance 443.

Service may be terminated to any customer who knowingly and willfully violates any provision of the Water Shortage Plan and Ordinance 443.

First Violation - The first time a customer exceeds the required percentage reduction, a written warning is sent to the customer and/or property owner personally or by regular mail.

Second Violation - For a second violation of this ordinance within a 12-month period or failure to comply with the notice of violation within the period stated, a surcharge of $100 is imposed for the meter through which the wasted water was supplied.

Third Violation - For a third violation within a 12-month period, or for continued failure to comply within 30 days after notice of an imposition of second violation sanctions, a one month penalty surcharge in the amount of $200 is imposed. In addition to the surcharge, the City may, at its discretion, install a flow-restricting device at the meter. The charge to the customer for installing a flow-restricting device is based on the size of meter and the actual cost of installation but shall not be less than that provided in the City's rules and regulations. The charge for removal of the flow restricting device and restoration of normal service shall be as provided in the City's rules and regulations.

Subsequent Violations -For any subsequent violation of this ordinance within the twenty-four (24) calender months after a first violation, the penalty surcharge provided shall be imposed and the City may discontinue water service to that customer at the premises or to the meter where the violation occurred. The charge for re-connection and restoration of normal service shall be as provided in the rules and regulations of the City. Such restoration of service shall not be made until the director of public services of the City has determined that the water user has provided reasonable assurances that future violations by such user will not occur.

4.5 Analysis of Revenue Impacts on Reduced Sales During Shortages (California Water Code Section 10632 (g))

Revenues will be impacted when, reduced water sales during the various stages as set forth in the City's Water Shortage Contingency Plan, are initiated. In order to minimize the financial impact this would have on the City, the monthly fixed revenues (monthly meter charges) need to cover the majority of the fixed costs of the City's water system during such an event.

The fixed costs are incurred by the City regardless of how much or when it delivers water to the customer. These costs generally include administration, personnel, billing, testing, maintenance, meter maintenance, pipeline and facility replacements.

Expenditures during periods of drought may be impacted by additional staffing or advertising costs. Expenses such as capital improvements should be deferred during this reduction in sales when feasible. The City, which produces all of the water consumed by its customers, will not have the added cost of a more expensive purchased water source.

In order to mitigate the financial impacts of a water shortage, the City maintains excess funds in the Water Enterprise Fund (Fund). This Fund is used for all operations associated with the running of the water system. Part of the Fund can be used to stabilize rates during periods of water shortage or disasters affecting the water supply. The City has a current balance of $2.1 million dollars in the Fund.

Even with the additional monies in the Fund, rate increases may be necessary during a prolonged water shortage. The City may wish to increase the fixed monthly meter service charge to cover the shortfall in revenue resulting from the decrease in water sales during a water shortage. The additional revenues would also help to cover any increased operating and water expenses that occur.

The experiences of California water purveyors during the 1990-91 drought shortage demonstrated that actual water use reductions by customers are usually larger that those requested by the supplier. During the 1990-91 drought shortage it was also politically difficult for many agencies to adopt the rate increases necessitated by a 20 to 50 percent reduction in sales.

After an extended water shortage, water revenues are expected to fall below pre-shortage levels. The water use is projected at 90% of the pre-shortage use, which could result in a reduction of revenue during the twelve month period after the end of a water supply shortage.

As described in Table 4-1, a water supply shortage calls for a reduction in water consumption, mandatory conservation measures and prohibited water uses. When a water shortage emergency is declared, the supply shortage will trigger the appropriate rationing stage and appropriate charges and penalties.

The City is currently undergoing a rate review. The review will analyze the existing rate structure, and formulate changes that would allow the City to meet their fixed annual expenditures with fixed revenue. The monthly meter charge is a fixed revenue that the City will receive regardless of the amount of water consumed. An increase in fixed revenue will help to offset any loss of revenue seen during a reduction in consumption due to the implementation of any of the stages of action outlined in Ordinance 443.

4.6 Draft Ordinance and Use Monitoring Procedure
(California Water Code Section 10632 (h-I))

Implementation of the Plan - In the event of a threatened water supply shortage which could affect the City's ability to provide water for ordinary domestic and commercial uses, the City Council shall hold a public hearing at which consumers of the water supply shall have the opportunity to protest and to present their respective needs to the City. The City Counsel may then, by resolution, declare a water shortage condition to prevail.

Water Use Monitoring Procedures - The director of public services of the City shall monitor the supply and demand for water on a daily basis to determine the level of conservation required by the implementation or termination of the water conservation plan stages and shall notify the City Council of the necessity for the implementation or termination of each stage. Each declaration of the City Council implementing or terminating a water conservation stage shall be published at least once in a newspaper of general circulation, and shall be posted at the City's offices. Each declaration shall remain in effect until the City Council otherwise declares, as provided in this section.

Stage 1 - Normal Condition - Monitoring Procedure
In normal water supply conditions, production figures are recorded daily. Totals are reported daily on a continuous computerized monitoring system to the Water Department Supervisor. Totals are reported monthly to the City Administrator and incorporated into the water supply report to the Utilities Commission.

Stage 2 - Threatened Water Supply Shortage - Monitoring Procedure
During a Stage 2 water shortage, daily production figures are reported to the Supervisor. The Supervisor compares the daily production to the target daily production to verify that the reduction goal is being met. Reports are forwarded to the City Administrator on an as-needed basis, continuously if appropriate. Monthly reports are sent to the Utility Commission. If reduction goals are not met, the Administrator will notify the City Council so that corrective action can be taken.

Stage 3 - Water Shortage Emergency - Monitoring Procedure
During a Stage 3 water shortage, the procedure listed above will be followed.

Disaster Shortage
During a disaster shortage, the City Administrator will report continuously to the City Council and inform the San Bernardino County Office of Emergency Services. Special Council meetings can be convened should authorization for special action be needed.

A coordinated response to water supply shortages is necessary for uniformity in developing, implementing and enforcing Drought Contingency Plans. The City's primary source of water is groundwater wells within the Bunker Hill Basin. SBVMWD's primary function is to plan and develop a long-range water supply for water agencies within this Basin.

Chapter 13.04 WATER DEPARTMENT

Note

* Prior ordinance history: Ords. 1, 294, 286 and 333.

13.04.010 Short title.

This chapter shall be known and may be cited as the "utility services division (water) of the community services department" of the city. (Ord. 443 § 1, 1991)

13.04.020 Definitions.

As used in this chapter:

A. Words and Phrases. For the purpose of this chapter, all words used in the present tense shall include the future; all words in the plural number shall include the singular number; and all words in the singular number shall include the plural number.

B. "City council" means the city council of the city of Loma Linda, California. All decisions of the city manager and city staff may be appealed to the city council pursuant to Section 2.08.030.

C. "City staff" means the employees and contract representatives of the city who are appointed to administer and operate the water system of the city.

D. "Connection" means the pipe line and appurtenant facilities such as the curb stop, meter and meter box, all used to extend water service from the main to premises, the laying thereof and the tapping of the main. Where services are divided at the curb or property line to serve several customers, each such branch service shall be deemed a separate service.

E. "Cost" means the cost of labor, material, transportation, supervision, engineering, and all other necessary overhead expense.

F. "Cross-connection" means any physical connection between the piping system from the division's service and that of any other water supply that is not, or cannot be, approved as safe and potable for human consumption, whereby water from the unapproved source may be forced or drawn into the utility services division (water) distribution mains.

G. "Main" means a water pipe line in a street, highway, alley, or easement used for public and private fire protection and for general distribution of water.

H. "Owner" means the person owning the fee, or the person in whose name the legal title to the property appears, by deed duly recorded in the county recorder's office, or the person in possession of the property or buildings under claim of, or exercising acts of ownership over same for himself, or as executor, administrator, guardian or trustee of the owner.

I. "Person" means an individual or a company, association, copartnership or public or private corporation.

J. "Premises" means a lot or parcel of real property under one ownership, except where there are well-defined boundaries or partitions such as fences, hedges, or other restrictions preventing the common use of the

property by the several tenants, in which case each portion shall be deemed separate premises. Apartment houses and office buildings may be classified as single premises.

K. "Private fire protection service" means water service and facilities for building sprinkler systems, hydrants, hose reels and other facilities installed on private property for fire protection and the water available therefor.

L. "Public fire protection service" means the service and facilities of the entire water supply, storage and distribution system of the division, including the fire hydrants affixed thereto, and the water available for fire protection, excepting house service connections and appurtenances thereto.

M. "Regular water service" means water service and facilities rendered for normal domestic, commercial and industrial purposes on a permanent basis, and the water available therefor.

N. "Temporary water service" means water service and facilities rendered for construction work and other uses of limited duration, and the water available therefor.

O. "Utility services division (water)" means division operated under the jurisdiction of the city council represented by appropriate employees or agents. (Ord. 443 § 1, 1991)

13.04.030 Notice—To customers.

Notices to customers by the division will normally be given in writing and either delivered or mailed to him at his last known address. Where conditions warrant, and in emergencies, the utility services division (water) may resort to notification either by telephone or messenger. (Ord. 443 § 1, 1991)

13.04.040 Notice—From customers.

Notices from customers to the utility services division (water) may be given by the customer or his authorized representative in writing, in person or by mail at the division's office. (Ord. 443 § 1, 1991)

13.04.050 Authority of public services director.

The public services director shall have full charge and control of the maintenance, operation and construction of the water works and water distribution system of the district. The public services director shall regularly inspect all physical facilities related to the city water system, to see that they are in good repair and proper working order, and to note and report violations of any ordinances or water regulations. (Ord. 443 § 1, 1991)

13.04.060 Supervisory employees designated.

The supervisory employees of the utility services division (water) shall consist of public services director and a utility services superintendent. (Ord. 443 § 1, 1991)

13.04.070 Administrative powers and duties.

Regular inspection of all physical facilities belonging and related to the city water system to ensure they are in good repair and proper working order and to note violations of any water regulations. The public services director or his designee shall have charge of other employees working under his direct supervision, particularly relating to the repair and maintenance of the water system and the reading of customer meters. He shall report and be responsible to the city manager in all matters pertaining to the operation of the utility

services division (water). In the event of an emergency requiring immediate action, he shall take whatever steps are necessary to maintain customer service pending further action by the city manager, if any. Supervision of all repair or construction work authorized by the city council and any other duties prescribed elsewhere in this chapter or which shall, after the effective date of the ordinance codified in this chapter, be prescribed by the rules and regulations of the city council are the responsibility of the public services director or his designee. (Ord. 443 § 1, 1991)

13.04.080 Delegation of utility services.

In the absence of the public services director, the duties set forth may be performed by another employee who may be designated by the public services director to perform such duties. (Ord. 443 § 1, 1991)

13.04.090 Department to furnish system.

The city will furnish a system, plant, and works used for and useful in obtaining, conserving and disposing of water for public and private uses, including all appurtenances to it, and lands, easements, rights in land, water rights, contract rights, franchises, and other water supply, storage and distribution facilities and equipment, including but not limited to private and public developed projects both on-site and off-site. (Ord. 443 § 1, 1991)

13.04.100 Acceptance of conditions required.

All applicants for service connections or water service shall be required to accept such conditions of pressure and services as are provided by the distributing system at the location of the proposed service connection, and to hold the city harmless for any damages arising out of low pressure or high pressure conditions or interruptions in service. (Ord. 443 § 1, 1991)

13.04.110 Department not responsible for pressure.

The city shall not accept any responsibility for the maintenance of pressure, and it reserves the right to discontinue service while making emergency repairs, etc. Consumers dependent upon a continuous supply of water should provide their own emergency storage. (Ord. 443 § 1, 1991)

13.04.120 Valve operation restricted to department.

No one except an employee or representative of the utility services division (water) shall at any time in any manner operate the curb cocks or valves, except for repair on private property or to avoid property damage, main cocks, gates or valves of the city's water system or interfere with meters or their connections, street mains or other parts of the water system. (Ord. 443 § 1, 1991)

13.04.130 Service discontinuance authorized for noncompliance.

For the failure of the customer or his agent to comply with all or any part of this chapter and any ordinance, resolution, or order fixing rates and charges of the city's utility service division (water), the customer's service shall be discontinued, and water shall not be supplied such customer until he shall have complied with the rule or regulation which he has violated or paid the rates or charges made against him for services rendered. This section shall be in addition to any other remedies authorized by law. (Ord. 443 § 1, 1991)

13.04.140 Division right to determine connection size and location.

The utility services division (water) reserves the right to determine the size of service connections and their location with respect to the boundaries of the premises to be served. The laying of consumer's pipe line to the curb should not be done until the location of the service connection has been approved by the utility services division (water) superintendent. (Ord. 443 § 1, 1991)

13.04.150 Curb cock or valve required.

Every service connection installed by the utility services division (water) shall be equipped with a curb cock or ball valve on the inlet side of the meter. Such valve or curb cock is intended for the exclusive use of the utility services division (water) in controlling the water supply through the service connection pipe. If the curb cock or valve is damaged by the consumer's use to an extent requiring replacement, such replacement shall be at the consumer's expense. (Ord. 443 § 1, 1991)

13.04.160 Service connection regulations.

Domestic, commercial and industrial service connections shall conform with the following rules and any deviation therefrom shall be deemed unlawful:

A. Separate Building. Each house or building under separate ownership must be provided with a separate service connection. Two or more houses under one ownership and on the same lot or parcel of land may be supplied through the same service connection; provided, that for each house under a separate roof which shall face a street, an additional minimum water charge will be applied to the single meter serving the house or a separate service connection may be provided for each building. The city reserves the right to limit the number of houses or the area of land under one ownership to be supplied by one service connection.

B. Single Connection. Not more than one service connection for domestic or commercial water supply shall be installed for one building, except under special conditions approved by the public services director.

C. Different Owners. A service connection shall not be used to supply adjoining property of a different owner or to supply property of the same owner across a street or an alley.

D. Divided Property. When property provided with a service connection is divided, each service connection shall be considered as belonging to the lot or parcel of land which it directly enters.

E. Service Connections. The service connections extending from the water main to the property line and including the meter, meter box and curb cock or ball valve, shall be maintained by the utility services division (water). All pipes and fixtures extending or lying beyond the meter or seven feet from main whichever is closer shall be installed and maintained by the owner of the property. (Ord. 443 § 1, 1991)

13.04.170 Main extension—Regulations.

The following rules are established for making main extensions:

A. Any owner of one or more lots or parcels, or a subdivider of a tract of land, desiring the extension of one or more water mains, to serve such property, shall make a written application therefor to the utility services division (water), such application to contain the legal description of the property to be served and tract number thereof, and any additional information which may be required by the city, and be accompanied by a map showing the location of the proposed connections.

B. Upon receipt of the application, the utility services division (water) shall make an investigation and survey of the proposed extension and shall report the findings to the city council, including the estimated cost of any extensions involving the utility services division (water).

C. The city council shall thereupon consider the application and report of the utility services division (water) and after such consideration reject or approve the same.

D. All extensions of mains, fire hydrants, laterals and connections provided for in accordance with this chapter and approved by the city council shall by agreement become and remain the property of the city. When a contractor or subdivider installs water mains, fire hydrants, laterals and connections in any subdivisions at his own expense, but under the supervision of the utility services division (water), such installations, upon completion and before water service is provided shall be transferred to the ownership of the city by appropriate grant deed and bill of sale.

E. No dead-end lines shall be permitted, except with the approval of the utility services superintendent, and in cases where circulation lines are necessary they shall be designed and approved by the utility services division (water) in advance of installation before becoming a part of the city system.

F. The city will provide all main pipe line extensions in existing streets to properties along dedicated roads and streets upon application for water service and if in their opinion such water service is economically feasible and to the advantage of the city system in serving the requirements of the area. The cost of such extension of water mains shall be at the expense of the applicant or group of applicants to be shared by them. If an applicant could be served adequately by a certain size pipe line to provide for future expansion of water services in the area, the city may agree to share the cost of the pipe lines on terms agreeable to both parties concerned. In the event that a larger pipe line is installed at partial cost to the city, the city may require future water users in the area who apply for new connections to reimburse the utility services division (water) for such main line extension cost until the full amount of the cost has been recovered.

G. If the property owners or subdividers initiating the pipe line extension are required to defray the entire cost of any main line extension under these regulations, and they wish to put up the entire cost of the project, the city may agree to reimburse such property owners or subdividers over a period of years by requiring all new connections in that area to pay a proportionate amount of the cost to the city, which money shall then be paid to the original investors until the full amount has been paid. (Ord. 443 § 1, 1991)

13.04.180 Independent pipe line systems required when.

The applicant may apply for as many services as may be reasonably required for his premises provided that the pipe line system for each service be independent of the others and that they not be interconnected. (Ord. 443 § 1, 1991)

13.04.190 Wasting water prohibited—Service discontinuance authorized when.

No customer shall knowingly permit leaks or waste water. Where water is wastefully or negligently used on a customer’s premises, seriously affecting the general service, the utility services division (water) may discontinue the service if such conditions are not corrected within five days after giving the customer written notice. (Ord. 443 § 1, 1991)

13.04.200 Facilities department property—Obstruction removal authorized.

All facilities installed by the city on private property for the purpose of rendering water service shall remain the property of the city and may be maintained, repaired or replaced by the utility services division (water) without the consent or interference of the owner or occupant of the property. The owner shall use

reasonable care in the protection of the facilities. No payment shall be made for placing or maintaining the facilities on private property. Shrubbery or plants must not be planted adjacent to fire hydrants or water meters. If property owners do not cooperate in this, the city shall have the right to remove such obstructions at the expense of the property owner after giving notice of such intention. (Ord. 443 § 1, 1991)

13.04.210 Customer liability for facilities damage.

The customer shall be liable for any damage to the service facilities when such damage is from causes originating on the premises by an act of the customer or his tenants, agents, employees, contractors, licensees, or permitees, including the breaking or destruction of locks by the customer or others on or near a meter, and any damage to a meter that may result from hot water or steam from a boiler or heater on the customer's premises. The city shall be reimbursed by the customer for any such damage promptly on presentation of a bill for same. (Ord. 443 § 1, 1991)

13.04.220 Attaching ground wires prohibited.

All individuals or business organizations are forbidden to attach any ground wire or wires to any plumbing which is or may be connected to a service connection or main belonging to the city. The city shall hold the customer liable for any damage to its property occasioned by such ground wire attachments. (Ord. 443 § 1, 1991)

13.04.230 Customer required to provide valve.

The customer shall provide a valve on his side of the service installation, as close to the meter location as practicable, to control the flow of water to the pipe lines on his premises. The customer shall not use the service curb valve to turn meter on and off for his convenience. (Ord. 443 § 1, 1991)

13.04.240 Department right-of-entry.

Representatives from the utility services division (water) shall have the right of ingress and egress to the customer's premises at reasonable hours for any purpose reasonably connected with the furnishing of water service. (Ord. 443 § 1, 1991)

13.04.250 Unauthorized connection to avoid charges.

A customer, subdivider or their employees or agents shall not make illegal and unauthorized connections to the water system with or without a meter, thus avoiding the record of payment of water charges. (Ord. 443 § 1, 1991)

13.04.260 Meters—Installation—Sealing.

Meters will be installed on or near property lines and shall be owned by the city and installed and removed at its expense. No rent or other remuneration will be paid by the city for a meter or other facilities including connections belonging to individuals. All meters will be sealed by the utility services division (water) at the time of installation, and no seal shall be altered or broken except by one of the utility services division (water) authorized employees or agents. (Ord. 443 § 1, 1991)

13.04.270 Meters—Relocation charges.

Meters moved for the convenience of the customer will be relocated at the customer's expense. Meters moved to protect the city's property will be moved at its expense. If the lateral distance which the customer desires to have the meter moved exceeds eight feet, he will be required to pay for new service at the desired location. (Ord. 443 § 1, 1991)

13.04.280 Service discontinuance authorized for cross-connection.

Water service may be refused or discontinued to any premises where there exists a cross-connection in violation of state or federal laws. (Ord. 443 § 1, 1991)

13.04.290 Service discontinuance—Fraud or abuse.

Service may be discontinued if necessary to protect the city against fraud or abuse. (Ord. 443 § 1, 1991)

13.04.300 Service discontinuance—Noncompliance.

Service may be discontinued for noncompliance with this chapter or any other ordinance or regulation relating to the water service. (Ord. 443 § 1, 1991)

13.04.310 Water service application—Form.

A property owner or his agent may make application for regular water service on a form provided by the utility services division (water). Such application shall signify the customer's willingness and intention to comply with this chapter and other ordinances or regulation relating to the regular water service and to make payment for the water service received. (Ord. 443 § 1, 1991)

13.04.320 Water service application—Payment of past service required.

An application for water service will not be honored unless payment in full has been made for water service previously rendered to the applicant within the boundaries of the division. (Ord. 443 § 1, 1991)

13.04.330 Connection charges—Installation by authorized personnel.

A. Where a regular charge has been fixed for the type of service connection desired, such regular charges shall be paid in advance by the applicant. Where there is no regular fixed charge, the city reserves the right to require the applicant to deposit an amount equal to the estimated cost of such service connection. The current schedule of regular service connection charges is in resolution form.

B. Only duly authorized employees or agents of the utility services division (water) will be authorized to install service connections. (Ord. 443 § 1, 1991)

13.04.340 Service installation—Main abutment required.

Regular water services will be installed at the location desired by the applicant, of the size determined by the utility services division (water). Service installation will be made only to property abutting on distribution mains as have been constructed in public streets, alleys or easements, or to extensions thereof as provided in

this chapter. Service installed in new subdivisions prior to the construction of streets or in advance of street improvements must be accepted by the applicant in the installed location. (Ord. 443 § 1, 1991)

13.04.350 Service requirements changes—Notice required.

Customers making any material change in the size, character or extent of the equipment or operations utilizing water services, or whose change in operations results in a large increase in the consumption of water, shall immediately give the utility services division (water) written notice of the nature of the change and, if necessary, amend or change their original application. (Ord. 443 § 1, 1991)

13.04.360 Subdivision system application—Required.

A person or persons desiring to provide a water system within a tract of land which he proposes to subdivide, shall make written application therefor. (Ord. 443 § 1, 1991)

13.04.370 Subdivision system application—Contents.

The application shall state the number of the tract, the name of the subdivision, and its location. It shall be accompanied by a copy of the final map and of the plans, profiles and specifications for the street work therein. (Ord. 443 § 1, 1991)

13.04.380 Subdivision system—Compliance required.

If approved by the city council, it shall be required that the subdivider shall meet all specifications set forth by the American Water Works Association and city standards and specifications as to adequate size, type and quality of materials used and the location of main lines, valves, connections, fire hydrants, etc., and comply with all requirements of the State Health Department and the department of public safety (fire division). (Ord. 443 § 1, 1991)

13.04.390 Subdivision system—Subdivider responsibility—Division inspection.

The utility services division (water) will not undertake on its own initiative to provide or construct any main extension pipe lines in a subdivision or for the extension of main lines from existing pipe lines to the subdivision area. Such subdivision main lines and service required, together with any extension of existing pipe lines to such area, shall be the responsibility of and at the expense of the subdivider. He shall provide and arrange for the construction of all main lines, valves, connections and hydrants with laterals to the inside of curb. Upon completion of the construction project, the system shall be inspected by utility services and if approved, the subdivider shall be required to obtain final approval of the city engineer. Upon such approval, the subdivider shall be required to transfer his ownership in the mains, valves, fire hydrants, laterals, connections, etc., to the city before any regular water service shall be supplied to the subdivided tract or area. (Ord. 443 § 1, 1991)

13.04.400 Subdivision system—Division payment for larger main installation.

If the city council shall require a subdivider or other person to install a larger size main pipe line than that which would normally be required or necessary to serve the interests of the subdivider or others, by consent and written agreement between the subdivider or others and the city council, the utility services division (water) may agree to pay for the difference in cost between the small size main pipe line and the large one

which is deemed necessary and desirable for future expansion of the system. All final agreements must be approved and ratified by the city council. (Ord. 443 § 1, 1991)

13.04.410 Department right to set meter—Consumer liability for negligence.

The utility services division (water) reserves the right to set and maintain a meter on any service connection. The water consumer shall be held liable, however, for any damage to the meter due to customer's negligence or carelessness and in particular, for damage caused by hot water or steam from the premises. (Ord. 443 § 1, 1991)

13.04.420 Guarantee deposit required when.

All water customers who are renters, subdividers or builders subject to frequent change of customers shall be required to make a guarantee deposit set by resolution per connection returnable or applicable to the last or closing bill. (Ord. 443 § 1, 1991)

13.04.430 Temporary service—Connection discontinuance.

Temporary service connections shall be discontinued and terminated within six months after installation unless an extension of time is granted in writing by the utility services division (water). (Ord. 443 § 1, 1991)

13.04.440 Temporary service—Cost deposit required—Connection charges.

The applicant shall deposit, in advance, the estimated cost of installing and removing the facilities required to furnish the service exclusive of the cost of salvageable material. Upon discontinuance of service, the actual cost shall be determined and an adjustment made as an additional charge, refund or credit. If service is supplied through a fire hydrant, the applicant will be charged as per resolution. (Ord. 443 § 1, 1991)

13.04.450 Temporary service—Facilities operation.

All facilities for temporary service to the customer connection shall be made by the utility services division (water) and shall be operated in accordance with its instructions. (Ord. 443 § 1, 1991)

13.04.460 Temporary service—Meter responsibility.

The customer shall use all possible care to prevent damage to the meter or to any other loaned facilities of the utility services division (water) which are involved in furnishing the temporary service from the time they are installed until they are removed, or until forty-eight hours' notice in writing has been given to the utility services division (water) that the contractor or other person is through with the meter or meters and the installation. If the meter or other facilities are lost or damaged, the cost of the meter or cost of making repairs shall be paid by the customer. (Ord. 443 § 1, 1991)

13.04.470 Temporary service—Hydrant use regulations.

An applicant for temporary use of water from a fire hydrant must secure a permit therefor from the utility services division (water) and pay the regular fee charged for the installation and removal of a meter to be installed on the hydrant, provide himself with a hydrant wrench necessary to operate such hydrant, and pay for

the water used in accordance with the meter readings, at the rates prescribed by resolution. (Ord. 443 § 1, 1991)

13.04.480 Tampering with hydrant prohibited.

Tampering with any fire hydrant for the unauthorized use of water therefrom, or for any other purpose, is punishable by law. (Ord. 443 § 1, 1991)

13.04.490 Temporary service—Advance payment or credit references required.

The applicant shall pay the estimated cost of water service in advance or shall be otherwise required to establish acceptable credit references. (Ord. 443 § 1, 1991)

13.04.500 Arrangements for large quantities of water required.

When an abnormally large quantity of water is desired for filling a swimming pool or for other purposes, arrangements must be made with the utility services division (water) prior to taking such water. Permission to take water in unusual quantities will be given only if it can be safely delivered through the city's facilities and if other consumers are not inconvenienced thereby. (Ord. 443 § 1, 1991)

13.04.510 Equipment maintenance required.

The customer shall, at his own risk and expense, furnish, install and keep in good and safe condition all equipment that may be required for receiving, controlling, applying and utilizing water, and the city shall not be responsible for any loss or damage caused by the improper installation of such equipment, or the negligence or wrongful act of the customer or of any of his tenants, agents, employees, or contractors, licensees or permittees in installing, maintaining, operating or interfering with such equipment. The city shall not be responsible for and will not consider refunds or credits for the loss or wastage of water occasioned by the breakage, leakage or damage to pipe lines on customer's property which is beyond the customer's water meter. The city also shall not be responsible for damage to property caused by faucets, valves and other equipment that are open when water is turned on at the customer's meter, either originally or when turned on after a temporary shutoff. (Ord. 443 § 1, 1991)

13.04.520 Collection by suit—Defendant payment of costs.

Defendant shall pay all costs of suit in any judgment rendered in favor of the city. (Ord. 443 § 1, 1991)

13.04.530 Hydrants—Authorized use only permitted.

Fire hydrants are for use by the utility services division (water) or by the department of public safety (fire division). Other parties desiring to use fire hydrants for any purpose must first obtain written permission from the utility services division (water) prior to use and shall operate the hydrant in accordance with instructions issued by the utility services division (water). Unauthorized use of hydrants will be prosecuted according to law. (Ord. 443 § 1, 1991)

13.04.540 Hydrants—Maintenance charge.

A charge, to be determined by contract between the utility services division (water) and organized fire protection agencies will be imposed for hydrant maintenance and water used for public fire protection. (Ord. 443 § 1, 1991)

13.04.550 Hydrants—Change in location.

When a fire hydrant has been installed in the location specified by proper authority, the city has fulfilled its obligation. If a property owner or other party desires a change in the size, type or location of the hydrant, he shall bear all costs of such changes without refund. Any change in the location of a fire hydrant must have the approval of the proper authority. (Ord. 443 § 1, 1991)

13.04.560 Private fire protection—Applicant to pay installation cost.

The applicant for private fire protection service shall pay the total actual cost of installation of the service from the distribution main to the customer's premises, including the cost of an approved double detector check device as per City Standard W-11. Customer shall be responsible for maintenance and testing of such device and meter at cost. (Ord. 443 § 1, 1991)

13.04.570 Private fire protection—Connection with other systems prohibited.

There shall be no connections between this fire protection system and any other water distribution system on the premises. (Ord. 443 § 1, 1991)

13.04.580 Private fire protection—Fire extinguishing and testing purposes only authorized.

There shall be no water used through the fire protection service except to extinguish fires and for testing the firefighting equipment. (Ord. 443 § 1, 1991)

13.04.590 Private fire protection—Charges double when—Exception.

Any consumption recorded on the meter will be charged for at double the regular service rates, except that no charge will be made for water used to extinguish fires where such fires have been reported to the department of public safety (fire division). (Ord. 443 § 1, 1991)

13.04.600 Private fire protection—Rate determination.

The monthly rates for private fire protection shall be established by the utility services division (water) upon receipt of application. (Ord. 443 § 1, 1991)

13.04.610 Private fire protection—Tank filling authorized when.

Occasionally water may be obtained from a private fire service for filling a tank connected with a fire service, but only if permission is secured from the utility services division (water) in advance and an approved means of measurement is available. The regular water rates will be applied. (Ord. 443 § 1, 1991)

13.04.620 Private fire protection—Service discontinuance authorized when.

If water is used from a private service in violation of the agreement or of this chapter, the city may, at its option, discontinue and remove the service. (Ord. 443 § 1, 1991)

13.04.630 Private fire protection—Department nonresponsibility for damage.

The city assumes no responsibility for loss or damage due to lack of water or pressure, either high or low, and merely agrees to furnish such quantities and pressures as are available in its general distribution system. The service is subject to shutdowns and variations required by the operation of the system. (Ord. 443 § 1, 1991)

13.04.640 Private fire protection—Other service connections authorized.

The city shall have the right to take a domestic, commercial or industrial service connection from the fire service connection at the curb to supply the same premises as those to which the fire service connection belongs. The city shall also have the right to determine the proportion of the installation costs properly chargeable to each service connection, if such segregation of costs shall become necessary. (Ord. 443 § 1, 1991)

13.04.650 Private fire protection—Check valve installation authorized.

The city reserves the right to install on all fire service connections a double detector check as per City Standard W-11, at the expense of the owner of the property. (Ord. 443 § 1, 1991)

13.04.660 Backflow protective device—Installation required when.

The customer must comply with state and federal laws governing the separation of dual water systems or installations of backflow protective devices to protect the public water supply from the range of cross-connections. Backflow protective devices must be installed as per city standard and shall be open to test and inspection by the utility services division (water). Plans for the installation of backflow protection devices must be approved by the utility services division (water) prior to installation. (Ord. 443 § 1, 1991)

13.04.670 Pressure relief valves required when.

As a protection to the customer’s plumbing system, a suitable pressure relief valve must be installed and maintained by him, at his expense, when check-valves or other protective devices are used. The relief valve shall be installed between the check-valve and the water heater. (Ord. 443 § 1, 1991)

13.04.680 Backflow protective device—Required on supply lines when.

Whenever backflow protection has been found necessary on a water supply line entering a customer’s premises, then any and all water supply lines from the utility services division (water) mains entering such premises, buildings, or structures shall be protected by an approved backflow device, regardless of the use of the additional water supply lines. (Ord. 443 § 1, 1991)

13.04.690 Backflow protective device—Inspection and testing.

The double check valve or other approved backflow protection devices shall be inspected and tested in accordance with the California Administrative Code Title 17 by the utility services division (water) or a certified tester. The devices shall be serviced, overhauled, or replaced whenever they are found defective, and all costs of repair and maintenance shall be borne by the customer. (Ord. 443 § 1, 1991)

13.04.700 Service discontinuance authorized for check valve installation defected.

The service of water to any premises may be immediately discontinued by the utility services division (water) if any defect is found in the check valve installations or other protective devices, or if it is found that dangerous unprotected cross-connections exist. Service will not be restored until such defects are corrected. (Ord. 443 § 1, 1991)

13.04.710 Department nonliability for service interruption damage.

The city shall not be liable for damage which may result from an interruption in service from a cause beyond the control of the utility services division (water). (Ord. 443 § 1, 1991)

13.04.720 Billing—Period.

The regular billing period will be monthly or bimonthly at the option of the utility services division (water). (Ord. 443 § 1, 1991)

13.04.730 Meters—Reading.

Meters will be read as nearly as possible on the same day of each month, as near the end of each month as practicable and reasonably possible. (Ord. 443 § 1, 1991)

13.04.740 Opening and closing bill proration.

Opening and closing bills for less than the normal billing period shall be prorated both as to minimum charges and quantity by blocks of one hundred cubic feet. If the total period for which service is rendered is less than one month, the bill shall not be less than the monthly minimum charge applicable. Closing bills may be estimated by the utility services division (water) for the final period as an expediency to permit the customer to pay the closing bill at the time service is discontinued. (Ord. 443 § 1, 1991)

13.04.750 Charges due when.

Water charges are due and payable within twenty days of billing date to the property owner or his tenant or agency as designated in the application, and delinquent twenty days after the date indicated on the bill. Service may be discontinued without further notice if payment is not made by the delinquent date. (Ord. 443 § 1, 1991)

13.04.760 Billing—Payment due notice required.

Bills for metered water services shall be rendered at the end of each billing period. Flat rate service shall be billed in advance. Bills shall be payable on presentation. On each bill for water service rendered by the utility

services division (water) shall be printed substantially as follows: “Payment is due within twenty (20) days of billing date. Service may be turned off if account is unpaid.” (Ord. 443 § 1, 1991)

13.04.770 Billing—Separate bills required—Exception.

Separate bills will be rendered for each meter installation except where the utility services division (water) has, for its own convenience, installed two or more meters in place of one meter. Where such installations are made the meter readings will be combined for billing purposes. (Ord. 443 § 1, 1991)

13.04.780 Payment guarantee required for turn on.

The water charge begins when a service connection is installed and the meter is set, unless the water is ordered to be left shut off when the service connection is ordered to be installed. Before water is turned on by the utility services division (water) for any purpose whatever, the property owner or tenant must sign a form in which he guarantees payment of future water bills for the service required. The person signing the guarantee form or meter set form will be held liable for water used until the utility services division (water) is notified in writing to discontinue service or to transfer the account to another owner or tenant. (Ord. 443 § 1, 1991)

13.04.790 Unauthorized water use—Consumer liability.

A person taking possession of premises and using water from an active service connection without having made application to the utility services division (water) for meter service shall be held liable for the water delivered from the date of the recorded meter reading, and if the meter is found inoperative, the quantity consumed will be estimated. If proper allocation for water service is not made upon notification to do so by the utility services division (water), and if accumulated bills for service are not paid immediately, the service may be discontinued by the utility services division (water) without further notice. (Ord. 443 § 1, 1991)

13.04.800 Department nonliability for wasted water.

When turning on the water supply as requested, and the house or property is vacant, the utility services division (water) will endeavor to ascertain if water is running on the inside of the building. If such is found to be the case, the water will be left shut off at the curb cock on the inlet side of the meter. The utility services division (water) jurisdiction and responsibility ends at the property line for all purposes, and the utility services division (water) will in no case be liable for loss of wasted water or for damages occasioned by water running from open or faulty fixtures, or from broken, leaking or damaged pipes inside of the property line of the customer. (Ord. 443 § 1, 1991)

13.04.810 Desired discontinuance—Notification required.

Customers desiring to discontinue service should so notify the utility services division (water) two days prior to vacating the premises. Unless discontinuance of service is ordered, the customer shall be liable for regular charges whether or not any water is used. (Ord. 443 § 1, 1991)

13.04.820 Collection by suit—Authorized when.

All unpaid rates and charges and penalties provided in this chapter may be collected by suit. (Ord. 443 § 1, 1991)

13.04.830 Service rates.

Each and all premises which are served by a connection to the water system of the city shall be charged and the owner thereof shall pay a water service usage charge based upon a schedule for such charges fixed by resolution duly adopted by the city council. (Ord. 443 § 1, 1991)

13.04.840 Administrative decision appeal—City council action final.

All ruling of the city council shall be final. All administrative decisions of the staff concerning city policies, rules or regulations shall be appealed, if at all, to the city council within ten days subsequent to written notice of such administrative decision; otherwise, the decision shall be deemed final. (Ord. 443 § 1, 1991)

13.04.850 Meter testing—Required when—Procedure.

All meters will be tested prior to installation, and no meter will be installed which registers more than two percent fast. If a customer desires to have the meter serving his premises tested, he shall first deposit the fees required and may be present when the meter is tested in the meter shop of the utility services division (water). Should the meter register more than two percent fast, the deposit will be refunded, but should the meter register less than two percent fast, the deposit will be retained by the utility services division (water). (Ord. 443 § 1, 1991)

13.04.860 Meter testing—Refund authorized when.

If a meter tested at the request of a customer is found to be more than two percent fast, the excess charges for the time service was rendered the customer requesting the test, or for a period of six months, whichever shall be the lesser, shall be refunded to the customer. (Ord. 443 § 1, 1991)

13.04.870 Meter testing—Additional billing authorized when.

If a meter tested at the request of a customer is found to be more than five percent slow, the utility services division (water) may bill the customer for the amount of the undercharge based upon corrected meter readings for the period, not exceeding six months, that the meter was in use. (Ord. 443 § 1, 1991)

13.04.880 Charge estimate when meter not registering.

If a meter is found to be not registering, the charges for service shall be at the minimum monthly rate or based on the estimated consumption, whichever is greater. Such estimates shall be made from previous consumption records for a comparable period or by such other method as is determined by the utility services division (water) and its decision shall be final. (Ord. 443 § 1, 1991)

13.04.890 Service discontinuance authorized for nonpayment.

Service may be discontinued for nonpayment of bills on or before the twentieth day following the date of billing. (Ord. 443 § 1, 1991)

13.04.900 Failure to receive bill no relief of liability.

Failure to receive a bill for service rendered does not relieve consumer of liability. Any amount due shall be deemed a debt to the city, and any person, firm or corporation failing, neglecting or refusing to pay such indebtedness shall be liable to an action in the name of the city in any court of competent jurisdiction for the amount thereof. (Ord. 443 § 1, 1991)

13.04.910 Reconnection charge—Meter removal charge.

A reconnection charge, plus penalties as per resolution shall be made and collected prior to renewing service following a discontinuance of water service due to nonpayment of bill, and an additional charge shall be made whenever it is deemed necessary to remove the meter from the premises. (Ord. 443 § 1, 1991)

13.04.920 Delinquent charge penalty.

Rates and charges which are not paid on or before the day of delinquency shall be subject to a penalty of ten percent and thereafter shall be subject to a further penalty of two percent per month on the first day of each month following. (Ord. 443 § 1, 1991)

13.04.930 Security deposit charge.

The security deposit is the charge which insures payment of minimum utility service division (water) charges. Upon discontinuance of service the security deposit shall be applied to reduce any unpaid charges outstanding on the customer's account. The amount of deposit required shall be established by the city council in the resolution on fees. The security deposit shall be refunded to the customer as provided in this section. (Ord. 443 § 1, 1991)

13.04.940 Waste or nuisance water and other substances.

It is unlawful for any person, firm or corporation to deposit, drain, wash, allow to run or divert into or upon any public road, highway, street or alley, drainage ditch, storm drain or flood control channel owned by or controlled by any public agency within the city, any water, mud, or sand; except that, upon written application of any person filed with the city and approved by the director of public services, the city may, upon such terms and conditions as it may deem advisable to impose, including the charging of a fee therefor, grant a permit to such person to do any of the acts prohibited by this section, provided the same shall not be detrimental to the public health, safety or welfare. For purposes of enforcement of this section, the owner of the meter or property which is the source of the waste or nuisance water or other substance as defined in this section is considered the party responsible for any violations cited under this section. (Ord. 443 § 1, 1991)

13.04.950 Conservation measures—Stage No. 1 normal conditions—Voluntary conservation measures.

Normal conditions shall be in effect when the city is able to meet all the water demands of its customers in the immediate future. During normal conditions all water users should continue to use water wisely, to prevent the waste or unreasonable use of water, and to reduce water consumption to that necessary for ordinary domestic and commercial purposes. (Ord. 443 § 1, 1991)

13.04.960 Stage No. 2—Threatened water supply shortage.

In the event of a threatened water supply shortage which could affect the city's ability to provide water for ordinary domestic and commercial uses, the city council shall hold a public hearing at which consumers of the water supply shall have the opportunity to protest and to present their respective needs to the city. The city council may then, by resolution, declare a water shortage condition to prevail, and the following conservation measures shall be in effect.

A. Exterior Landscape Plans. Exterior landscape plans for all new commercial and industrial development shall provide for timed irrigation and shall consider the use of drought resistant varieties of flora. Such plans shall be presented and approved by the city prior to issuance of a water service letter.

B. Excessive Irrigation and Related Waste. No customer of the city or other person acting on behalf of or under the direction of a customer shall cause or permit the use of water for irrigation of landscaping or other outdoor vegetation, plantings, lawns or other growth, to exceed the amount required to provide reasonable or excessive waste of water from such irrigation activities or from watering devices or systems. The free flow of water away from an irrigated site shall be presumptively considered excessive irrigation and waste as defined.

C. Agricultural Irrigation. Persons receiving water from the city who are engaged in commercial agricultural practices, whether for the purpose of crop production or growing of ornamental plants shall provide, maintain and use irrigation equipment and practices which are the most efficient possible. Upon the request of the director of public services, these persons may be required to prepare a plan describing their irrigation practices and equipment, including but not limited to, an estimate of the efficiency of the use of water on their properties.

D. Commercial Facilities. Commercial and industrial facilities shall, upon request of the director of public services, provide the city with a plan to conserve water at their facilities. The city will provide these facilities with information regarding the average monthly water use by the facility for the last two-year period. The facility will be expected to provide the city with a plan to conserve or reduce the amount of water used by that percentage deemed by the city council to be necessary under the circumstances. After review and approval by the director of public services, the water conservation plan shall be considered subject to inspection and enforcement by the city.

E. Parks, Golf Courses, Swimming Pools and School Grounds. Public and private parks, golf courses, swimming pools and school grounds which use water provided by the city shall use water for irrigation and pool filling between the hours of six p.m. and six a.m.

F. Domestic Irrigation. Upon notice and public hearing, the city may determine that the irrigation of exterior vegetation shall be conducted only during specified hours and/or days, and may impose other restrictions on the use of water for such irrigation. The irrigation of exterior vegetation at other than these times shall be considered to be a waste of water.

G. Swimming Pool. All residential, public and recreational swimming pools, of all sizes, shall use evaporation resistant covers and shall recirculate water. Any swimming pool which does not have a cover installed during periods of nonuse shall be considered a waste of water.

H. Runoff and Washdown. No water provided by the city shall be used for the purposes of washdown of impervious areas without specific written authorization of the director of public services. Any water used on a premises that is allowed to escape the premises and run off into gutters or storm drains shall be considered a waste of water.

I. Vehicle Washing. The washing of cars, trucks or other vehicles is not permitted, except with a hose equipped with an automatic shut-off device, or at a commercial facility designated and so designated on the city's billing records.

J. Drinking Water Provided by Restaurants. Restaurants are requested not to provide drinking water to patrons except by request. (Ord. 443 § 1, 1991)

13.04.970 Stage No. 3—Water shortage emergency—Mandatory conservation measures.

In the event of a water shortage emergency in which the city may be prevented from meeting the water demands of its customers, the city council shall, if possible given the time and circumstances, immediately hold a public hearing at which customers of the city shall have the opportunity to protest and to present their respective needs to the city council. No public hearing shall be required in the event of a breakage or failure of a pump, pipeline, or conduit causing an immediate emergency. The director of public services is empowered to declare a water shortage emergency, subject to the ratification of the city council within seventy-two hours of such declaration, and the following rules and regulations shall be in effect immediately following such declarations:

A. Prohibition. Watering of parks, school grounds, golf courses, lawn watering, landscape irrigation, washdown of driveways, parking lots or other impervious surfaces, washing of vehicles, except when done by commercial car wash establishments using only recycled or reclaimed water, filling or adding water to swimming pools, wading pools, spas, ornamental ponds, fountains and artificial lakes are prohibited.

B. Restaurants. Restaurants shall not serve drinking water to patrons except by request.

C. Construction Meters. No new construction meter permits shall be issued by the city. All existing construction meters shall be removed and/or locked.

D. Commercial Nurseries and Livestock. Commercial nurseries shall discontinue all watering and irrigation. Watering of livestock is permitted as necessary. (Ord. 443 § 1, 1991)

13.04.980 Mandatory compliance—Implementation and termination.

The director of public services of the city shall monitor the supply and demand for water on a daily basis to determine the level of conservation required by the implementation or termination of the water conservation plan stages and shall notify the city council of the necessity for the implementation or termination of each stage. Each declaration of the city council implementing or terminating a water conservation stage shall be published at least once in a newspaper of general circulation, and shall be posted at the city offices. Each declaration shall remain in effect until the city council otherwise declares, as provided in this section. (Ord. 443 § 1, 1991)

13.04.990 Mandatory compliance—Exception permits.

The director of public services may grant permits for uses of water otherwise prohibited under the provisions of this chapter if he finds and determines that restrictions herein would either:

A. Hardship. Cause an unnecessary and undue hardship to the water user or the public; or

B. Emergency. Cause an emergency condition affecting the health, sanitation, fire protection or safety of the water use or of the public. (Ord. 443 § 1, 1991)

13.04.1000 Exception granted.

Such exceptions may be granted only upon written application therefor. Upon granting such exception permit, the director of public services may impose any conditions he determines to be just and proper. (Ord. 443 § 1, 1991)

13.04.1010 Enforcement, inspection.

Authorized employees of the city, after proper identification may, during reasonable hours, inspect any facility having a water conservation plan, and may enter onto private property for the purpose of observing the operation of any water conservation device, irrigation equipment or water facility. Employees of the city may also observe the use of water or irrigation equipment within the city from public rights-of-way and as alleged violations are reported to the city. (Ord. 443 § 1, 1991)

13.04.1020 Civil penalties for violation.

Violators of the mandatory provisions of this chapter shall be subject to civil action initiated by the city as follows:

A. First Violation. For a first violation, the city shall issue a written notice of violation to the water user violating the provisions of this chapter. The notice shall be given pursuant to the requirements listed in Sections 13.04.970 and 13.04.980.

B. Second Violation. For a second violation of this chapter within a twelve-month period or for failure to comply with the notice of violation within the period stated, a surcharge of one hundred dollars is imposed for the meter through which the wasted water was supplied.

C. Third Violation. For a third violation of this chapter within a twelve-month period, or for continued failure to comply within thirty days after notice of an imposition of second violation sanctions, a one-month penalty surcharge in the amount of two hundred dollars is imposed for the meter through which the wasted water was supplied. In addition to the surcharge, the city may, at its discretion, install a flow-restricting device at such meter with a one-eighth inch orifice for services up to one and one-half inch size, and comparatively sized restrictors for larger services, on the service of the customer at the premises at which the violation occurred for a period of not less than forty-eight hours. The charge to the customer for installing a flow-restricting device shall be based upon the size of the meter and the actual cost of installation but shall not be less than that provided in the city's rules and regulations. The charge for removal of the flow-restricting device and restoration of normal service shall be as provided in the city's rules and regulations.

D. Subsequent Violations—Discontinuance of Service. For any subsequent violation of this chapter within the twenty-four calendar months after a first violation as provided in this section, the penalty surcharge shall be imposed and the city may discontinue water service to that customer at the premises or to the meter where the violation occurred. The charge for reconnection and restoration of normal service shall be as provided in the rules and regulations of the city. Such restoration of service shall not be made until the director of public services of the city has determined that the water user has provided reasonable assurances that future violations of this chapter by such user will not occur. (Ord. 443 § 1, 1991)

13.04.1030 Notification of violation.

A. First Violation. For a first violation, written notice shall be given to the customer and/or property owner personally or by regular mail.

B. Subsequent Violation. If the penalty assessed is a surcharge for a second or third violation, notice may be given by regular mail.

C. Penalties Involving Installation of Flow-restrictors or Discontinuance of Water Service. If the penalty assessed is, or includes, the installation of a flow restrictor or the discontinuance of water service to the customer for any period of time, notice of the violation shall be given in the following manner:

1. Personal Service. By giving written notice thereof to the occupant and/or property owner personally, or if the occupant and/or property owner is absent from his/her place of residence and from his/her assumed place of business, by leaving a copy with some person of suitable age and discretion at either place, and

sending a copy through the United States mail addressed to the occupant and/or owner of his/her place of business or residence; or

2. Posting. If such place of residence and business cannot be ascertained, or a person of suitable age or discretion cannot be located, then by affixing a copy in a conspicuous place on the property where the failure to comply is occurring and also by delivering a copy to a person there residing, if such person can be found, and also sending a copy through the United States mail addressed to the occupant at the place where the property is situated and to the owner if different. (Ord. 443 § 1, 1991)

13.04.1040 Form of notice.

All notices provided for in Section 13.04.1030 shall contain, in addition to the facts of the violation, a statement of the possible penalties for each violation and a statement informing the occupant/owner of his/her right to a hearing on the violation. (Ord. 443 § 1, 1991)

13.04.1050 Hearing.

Any customer or property owner against whom a penalty is levied pursuant to this chapter shall have a right to a hearing, in the first instance by the director of public services, with the right of appeal to the city council, on the merits of the alleged violation upon the written request of that customer within fifteen days of the date of alleged violation. At the next regularly scheduled meeting, the customer may then appear and present any evidence in support of his position and ask for a decision by the city council. (Ord. 443 § 1, 1991)

13.04.1060 Delays on action.

The city council shall act promptly to resolve the dispute, but may delay a resolution of the dispute to the time of its next regular meeting in order to investigate the dispute or receive special reports related to the dispute. (Ord. 443 § 1, 1991)

13.04.1070 Decision of the city council.

The decision of the city council shall be final. Should the city council not render a decision within sixty days of application to the city council, this failure to act shall be deemed a denial of the requested action, unless both parties have agreed to extend the resolution period. (Ord. 443 § 1, 1991)

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Chapter 13.32 WATER-EFFICIENT LANDSCAPE

13.32.010 Purpose.

A. The State Legislature has found that:

1. The limited supply of state waters are subject to ever increasing demands;
2. California's economic prosperity depends on adequate supplies of water;
3. State Policy promotes conservation and efficient use of water;
4. Landscapes provide recreation areas, clean the air and water, prevent erosion, offer fire protection and replace ecosystems displaced by development; and
5. Landscape design, installation and maintenance can and should be water efficient.

B. Consistent with the legislative findings, the purpose of this chapter is to:

1. Promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible;
2. Establish a structure for designing, installing and maintaining water-efficient landscapes in new projects; and
3. Establish provisions for water management practices and water waste prevention for established landscapes. (Ord. 488 § 1, 1992)

13.32.020 Definitions.

The words used in this chapter have the meaning set forth below:

"Anti-drain valve" or "check valve" means a value located under a sprinkler head to hold water in the system so it minimizes drainage from the lower elevation sprinkler heads.

"Application rate" means the depth of water applied to a given area, usually measured in inches per hour.

"Applied water" means the portion of water supplied by the irrigation system to the landscape.

"As-builts" means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.

"Automatic controller" means a mechanical or solid state timer, capable of operating valve stations to set the days and length of time of a water application.

"Backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

"Conversion factor (0.62)" means a number that converts the maximum applied water allowance from acre-inches per acre per year to gallons per square foot per year. The conversion factor is calculated as follows:

(325,829 gallons/43,560 square feet)/12 inches = (0.62)

325,829 gallons = one acre foot

43,560 square feet = one acre

12 inches = one foot

To convert gallons per year to 100-cubic-feet per year, another common billing unit for water, divide gallons per year by 748. (748 gallons = 100 cubic feet.)

"Ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

"Effective precipitation" or "usable rainfall" means the portion of total precipitation that is used by the plants. Precipitation is not a reliable source of water, but can contribute to some degree toward the water needs of the landscape.

"Emitter" means drip irrigation fittings that deliver water slowly from the system to the soil.

"Established landscape" means the point at which plants in the landscape have developed roots into the soil adjacent to the root ball.

"Established period" means the first year after installing the plant in the landscape.

"Estimated applied water use" means the portion of the estimated total water use is derived from applied water. The estimated applied water use shall not exceed the maximum applied water allowance. The estimated applied water use may be the sum of the water recommended through the irrigation schedule.

"Estimated total water use" means the annual total amount of water estimated to be needed to keep the plants in the landscaped area healthy. It is based upon such factors as the local evapotranspiration rate, the size of the landscaped area, the types of plants and the efficiency of the irrigation system.

"ET adjustment factor" means a factor of 0.8, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape.

A combined plant mix with a site-wide average of 0.5 is the basis of the plant factor portion of this calculation. The irrigation efficiency for purposes of the ET adjustment factor is 0.625, therefore, the ET adjustment factor (0.8) = (0.5/0.625).

"Evapotranspiration" means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time.

"Flow rate" means the rate at which water flows through pipes and valves (gallons per minute or cubic feet per second).

"Hydrozone" means a portion of the landscaped area having plants with similar water needs that are served by a valve or set or valves with the same schedule. A hydrozone may be irrigated or non-irrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a non-irrigated hydrozone.

"Infiltration rate" means the rate of water entry into the soil expressed as a depth of water per unit of time (inches per hour).

"Irrigation efficiency" means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum irrigation efficiency for purposes of this chapter is 0.625. Greater irrigation efficiency can be expected from well designed and maintained systems.

"Landscape irrigation audit" means a process to perform site inspections, evaluate irrigation systems and develop efficient irrigation schedules.

"Landscaped area" means the entire parcel less the building footprint, driveways, non-irrigated portions of parking lots, hardscapes — such as decks and patios and other non-porous areas. Water features are included in the calculation of the landscaped area. Areas dedicated to edible plants, such as orchards or vegetable gardens are not included.

"Lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve.

"Main line" means the pressurized pipeline that delivers water from the water source to the valve or outlet.

"Maximum applied water allowance" means, for design purposes, the upper limit of annual applied water for the established landscaped area. It is based upon the area's reference evapotranspiration, the ET adjustment factor, and the size of the landscaped area. The estimated applied water use shall not exceed the maximum applied water allowances.

"Mined-land reclamation projects" means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975.

“Mulch” means any material such as leaves, bark, straw or other materials left loose and applied to the soil surface to reduce evaporation.

“Operating pressure” means the pressure at which a system of sprinklers is designed to operate, usually indicated at the base of a sprinkler.

“Overspray” means the water which is delivered beyond the landscaped area, wetting pavements, walks, structures or other non-landscaped areas.

“Plant factor” means a factor that when multiplied by reference evapotranspiration, estimates the amount of water used by plants. For purposes of this chapter, the average plant factor or low water using plants ranges from 0 to 0.3, for average water using plants the range is 0.4 to 0.6, and for high water using plants the range is 0.7 to 1.0.

“Rain sensing device” means a system which automatically shuts off the irrigation system when it rains.

“Record drawing” or “as-builts” means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.

“Recreational area” means areas of active play or recreation such as sports fields, school yards, picnic grounds or other areas with intense foot traffic.

“Recycled water,” “reclaimed water,” or “treated sewage effluent water” means treated or recycled waste water of a quality suitable for nonpotable uses such as landscape irrigation; not intended for human consumption.

“Reference evapotranspiration” or “ETo” means a standard measurement of environmental parameters which affect the water use of plants. ETo is given in inches per day, month, or year, and is an estimate of the evapotranspiration of a large field of four-inch to seven-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the maximum applied water allowances so that regional differences in climate can be accommodated.

“Rehabilitated landscape” means any re-landscaping project that requires a permit.

“Run off” means water which is not absorbed by the soil or landscape to which it is applied and flows from the area. For example, run off may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a severe slope.

“Soil moisture sensing device” means a device that measures the amount of water in the soil.

“Soil texture” means the classification of soil based on the percentage of sand, silt, and clay in the soil.

“Sprinkler head” means a device which sprays water through a nozzle.

“Static water pressure” means the pipeline or municipal water supply pressure when water is not flowing.

“Station” means an area served by one valve or by a set of valves that operate simultaneously.

“Turf” means a surface layer of earth containing mowed grass with its roots. Annual bluegrass, Kentucky bluegrass, perennial ryegrass, red fescue, and tall fescue are cool-season grasses. Bermudagrass, kikuyugrass, seashore paspalum, St. Augustinegrass, zoysiagrass, and buffalo grass are warm-season grasses.

“Usable rainfall” means the portion of total precipitation that is used by the plants. Precipitation is not a reliable source of water, but can contribute to some degree toward the water needs of the landscape.

“Valve” means a device used to control the flow of water in the irrigation system.

“Water conservation concept statement” means a one-page checklist and a narrative summary of the project as shown in Exhibit “A” set out following this chapter. (Ord. 488 § 1, 1992)

13.32.030 Provisions for new or rehabilitated landscapes.

A. APPLICABILITY.

1. Except as provided in Section 13.32.030(A)(3), this section shall apply to:

a. All new and rehabilitated landscaping for public agency projects and private development projects that requires a permit; and

b. Developer-installed landscaping in landscape maintenance district areas of single-family and multi-family projects.

2. Projects subject to this section shall conform to the provisions in this chapter.

3. This section shall not apply to:

a. Homeowner-provided landscaping at single-family and multi-family projects;

b. Cemeteries;

c. Registered historical sites;

d. Ecological restoration projects that do not require a permanent irrigation system; or

e. Mined-land reclamation projects that do not require a permanent irrigation system; or

f. Any project with a landscaped area less than twenty- five thousand square feet.

B. LANDSCAPE DOCUMENTATION PACKAGE.

1. A copy of the landscape documentation package conforming to this chapter shall be submitted to the city or county. No permit shall be issued until the city or county reviews and approves the landscape documentation package.

2. A copy of the approved landscape documentation package shall be provided to the property owner or site manager along with the record drawings and any other information normally forwarded to the property owner or site manager.

3. A copy of the water conservation concept statement and the certificate of substantial completion shall be sent by the project manager to the local retail water purveyor.

4. Each landscape documentation package shall include the following elements, which are described herein:

a. Water conservation concept statement;

b. Calculation of the maximum applied water allowance;

c. Calculation of the estimated applied water use;

d. Calculation of the estimated total water use;

e. Landscape design plan;

f. Irrigation design plan;

g. Irrigation schedule;

h. Maintenance schedule;

i. Landscape irrigation audit schedule;

j. Grading design plan;

k. Soil analysis;

l. Certificate of substantial completion (to be submitted after installation of the project.)

5. If effective precipitation is included in the calculation of the estimated total water use, then an effective precipitation disclosure statement from the landscape professional and the property owner shall be submitted with the landscape documentation package.

C. ELEMENTS OF LANDSCAPE DOCUMENTATION PACKAGE.

1. Water Conservation Concept Statement. Each landscape documentation package shall include a cover sheet, referred to as the water conservation concept statement similar to the following example. It serves as a check list to verify that the elements of the landscape documentation package have been completed and has a narrative summary of the project.

2. The Maximum Applied Water Allowance.

a. A project's maximum applied water allowance shall be calculated using the following formula:

MAWA	= (ETo) (o.8) (LA) (o.62) where:
MAWA	= Max. applied water allowance (gallons per year)
ETo	= Reference evapotranspiration (inches per year)
0.8	= ET adjustment factor
LA	= Landscaped area (square feet)
0.62	= Conversion factor (to gallons per square foot)

b. Two example calculations of the maximum applied water allowance

i. Project Site One: Landscaped area of 50,000 sq. ft. in Fresno

MAWA	= (ETo) (.8) (LA) (.62)
	= (51 inches) (.8) (50,000 square feet) (.62)
	Maximum applied water allowance = 1,264,800 gallons per year (or 1,691 hundred-cubic-feet per year: 1,264,800/748 = 1,691)

ii. Project Site Two: Landscaped area of 50,000 sq. ft. in San Francisco

MAWA	= (ETo) (.8) (LA) (.62)
	= (35 inches) (.8) (50,000 square feet) (.62)
	Maximum Applied Water Allowance = 868,000 gallons per year (or 1,160 hundred-cubic-feet per year)

c. Portions of landscaped areas in public and private projects such as parks, playgrounds, sports fields, golf courses, or school yards where turf provides a playing surface or serves other recreational purposes may require water in addition to the maximum applied water allowance. A statement shall be included with the landscape design plan, designating areas to be used for such purposes and specifying any needed amount of additional water above the maximum applied water allowance.

3. Estimated Applied Water Use.

a. The estimated applied water use shall not exceed the maximum applied water allowance.

b. A calculation of the estimated applied water use shall be submitted with the landscape documentation package. It may be calculated by summing the amount of water recommended in the irrigation schedule.

4. Estimated Total Water Use.

a. A calculation of the estimated total water use shall be submitted with the landscape documentation package. The estimated total water use may be calculated by summing the amount of water recommended in the irrigation schedule and adding any amount of water expected from effective precipitation (not to exceed twenty-five percent of the local annual mean precipitation) or may be calculated from a formula such as the following:

The estimated total water use for the entire landscaped area equals the sum of the estimated water use of all hydrozones in that landscaped area:

EWU (hydrozone)	=	$\frac{\text{(ETo) (PF) (HA) (.62)}}{\text{(IE)}}$
EWU (hydrozone)	=	Estimated water use (gallons per year)
ETo	=	Reference evapotranspiration (inches per year)
PF	=	Plant factor
HA	=	Hydrozone area (square feet)
(.62)	=	Conversion factor
IE	=	Irrigation efficiency

b. If the estimated total water use is greater than the estimated applied water use due to precipitation being included as a source of water, an effective precipitation disclosure statement such as the one in the section entitled "Effective Precipitation" shall be included in the landscape documentation package.

5. Landscape Design Plan. A landscape design plan meeting the following requirements shall be submitted as part of the landscape documentation package:

a. Plant Selection and Grouping.

i. Any plants may be used in the landscape, providing the estimated applied water use recommended does not exceed the maximum applied water allowance and that the plants meet the specifications set forth in subsections (a)(ii), (a)(iii), and (a)(iv) immediately following.

ii. Plants having similar water use shall be grouped together in distinct hydrozones.

iii. Plans shall be selected appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the site. Protection and preservation of native species and natural areas is encouraged. The planting of trees is encouraged wherever it is consistent with the other provisions of this chapter.

iv. Fire prevention needs shall be addressed in areas that are fire prone. Information about fire prone areas and appropriate landscaping for fire safety is available from local fire departments or the California Department of Forestry.

b. Water Features.

i. Recirculating water shall be used for decorative water.

ii. Pool and spa covers are encouraged.

c. Landscape Design Plan Specifications. The landscape design plan shall be drawn on project base sheets at a scale that accurately and clearly identifies:

i. Designation of hydrozones;

ii. Landscape materials, trees, shrubs, groundcover, turf, and other vegetation. Planting symbols shall be clearly drawn and plants labeled by botanical name, common name, container size, spacing, and quantities of each group of plants indicated;

iii. Property lines and street names;

iv. Streets, driveways, walkways, and other paved areas;

v. Pools, ponds, water features, fences and retaining walls;

vi. Existing and proposed buildings and structures including elevation if applicable;

vii. Natural features including but not limited to rock outcroppings, existing trees, shrubs that will remain;

viii. Tree staking, plant installation, soil preparation details, and any other applicable planting and installation details;

ix. A calculation of the total landscaped area;

x. Designation of recreational areas.

6. Irrigation Design Plan. An irrigation design plan meeting the following conditions shall be submitted as part of the landscape documentation package:

a. Irrigation Design Criteria.

i. Runoff and Overspray. Soil types and infiltration rate shall be considered when designing irrigation systems. All irrigation systems shall be designed to avoid runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways or structures. Proper irrigation equipment and schedules, including features such as repeat cycles, shall be used to closely match application rates to infiltration rates therefore minimizing runoff.

Special attention shall be given to avoid runoff on slopes and to avoid overspray in planting areas with a width less than ten feet, and in median strips. No overhead sprinkler irrigation systems shall be installed in median strips less than ten feet wide.

ii. Irrigation Efficiency. For the purpose of determining the maximum water allowance, irrigation efficiency is assumed to be 0.625. Irrigation systems shall be designed, maintained, and managed to meet or exceed 0.625 efficiency.

iii. Equipment.

(A) Water Meters. Separate landscape water meters shall be installed for all projects except for single family homes or any projects except for single-family homes or any project with a landscaped area of less than five thousand square feet.

(B) Controllers. Automatic control systems shall be required for all irrigation systems and must be able to accommodate all aspects of the design.

(C) Valves. Plants which require different amounts of water shall be irrigated by separate valves. If one valve is used for a given area, only plants with similar water use shall be used in that area. Anti-drain (check) valves shall be installed in strategic points to minimize or prevent low-head drainage.

(D) Sprinkler Heads. Heads and emitters shall have consistent application rates within each control valve circuit. Sprinkler heads shall be selected for proper area coverage, application rate, operating pressure, adjustment capability, and ease of maintenance.

(E) Rain Sensing Override Devices. Rain sensing override devices shall be required on all irrigation systems.

(F) Soil Moisture Sensing Devices. It is recommended that soil moisture sensing devices be considered where appropriate.

b. Recycled Water.

i. The installation of recycled water irrigation systems (dual distribution systems) shall be required to allow for the current and future use of recycled water, unless a written exemption has been granted as described in the following subsection (b)(ii).

ii. Irrigation systems shall make use of recycled water unless a written exemption has been granted by the local water agency, stating that recycled water meeting all health standards is not available and will not be available in the foreseeable future.

iii. The recycled water irrigation systems shall be designed and operated in accordance with all local and state codes.

c. Irrigation Design Plan Specifications. Irrigation systems shall be designed to be consistent with hydrozones. The irrigation design plan shall be drawn on project base sheets. It should be separate from, but use the same format as, the landscape design plan. The scale shall be the same as that used for the landscape design plan.

The irrigation design plan shall accurately and clearly identify:

i. Location and size of separate water meters for the landscape;

ii. Location, type and size of all components of the irrigation system, including automatic controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, and backflow prevention devices;

iii. Static water pressure at the point of connection to the public water supply;

iv. Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (psi) for each station;

v. Recycled water irrigation systems as specified in this chapter.

7. Irrigation Schedules. Irrigation schedules satisfying the following conditions shall be submitted as part of the landscape documentation package:

a. An annual irrigation program with monthly irrigation schedules shall be required for the plant establishment period, for the established landscape, and for any temporarily irrigated areas.

b. The irrigation schedule shall:

i. Include run time (in minutes per cycle), suggested number of cycles per day, and frequency of irrigation for each station; and

ii. Provide the amount of applied water (in hundred cubic feet, gallons or whatever billing units the local water supplier uses) recommended on a monthly and annual basis.

c. The total amount of water for the project shall include water designated in the estimated total water use calculation plus water needed for any water features, which shall be considered as a high water using hydrozone.

d. Recreational areas designated in the landscape de-sign plan shall be highlighted and the irrigation schedule shall indicate if any additional water is needed above the maximum applied water allowance because of high plant factors (but not due to irrigation inefficiency).

e. Whenever possible, irrigation scheduling shall incorporate the use of evapotranspiration data such as those from the California Irrigation Management Information System (CIMIS) weather stations to apply the appropriate levels of water for different climates.

f. Whenever possible, landscape irrigation shall be between two a.m. and ten a.m. to avoid irrigating during times of high wind or high temperature.

8. Maintenance Schedules. A regular maintenance schedule satisfying the following conditions shall be submitted as part of the landscape documentation package:

a. Landscapes shall be maintained to ensure water efficiency. A regular maintenance schedule shall include but not be limited to checking, adjusting, and repairing irrigation equipment; resetting the automatic controller; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning, and weeding in all landscaped areas.

b. Whenever possible, repair of irrigation equipment shall be done with the originally specified materials or their equivalents.

9. Landscape Irrigation Audit Schedules. A schedule of landscape irrigation audits, for all but single-family residences, satisfying the following conditions shall be submitted to the city or county as part of the landscape documentation package:

a. At a minimum, audits shall be in accordance with the state of California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook, the entire document, which is incorporated by reference. (See Landscape Irrigation Auditor Handbook (June 1990) Version 5.5 [formerly Master Auditor Training].)

b. The schedule shall provide for landscape irrigation audits to be conducted by certified landscape irrigation auditors at least once every five years.

10. Grading Design Plan. Grading design plans satisfying the following conditions shall be submitted as part of the landscape documentation package:

a. A grading design plan shall be drawn on project base sheets. It should be separate from but use the same format as the landscape design plan.

b. The grading design plan shall indicate finished configurations and elevations of the landscaped area, including the height of graded slopes, drainage patterns, pad elevations, and finish grade.

11. Soils.

a. A soil analysis satisfying the following conditions shall be submitted as part of the landscape documentation package:

i. Determination of soil texture, indicating the percentage of organic matter;

ii. An approximate soil infiltration rate (either measured or derived form soil texture/infiltration rate tables). A range of infiltration rates should be noted where appropriate;

iii. Measure of pH, and total soluble salts.

b. A mulch of at least three inches shall be applied to all planting areas except turf.

12. Certification.

a. Upon completing the installation of the landscaping and the irrigation system, an irrigation audit shall be conducted by a certified landscape irrigation auditor prior to the final field observation. (See Landscape Irrigation Auditor Handbook as referenced in Section 13.32.040.)

b. A licensed landscape architect or contractor, certified irrigation designer, or other licensed professional in a related field shall conduct a final field observation and shall provide a certificate of substantial completion to the city or county. The certificate shall specifically indicate that plants were installed as specified, that the irrigation system was installed as designed, and that an irrigation audit has been performed, along with a list of any observed deficiencies.

c. Certification shall be accomplished by completing a certificate of substantial completion and delivering it to the city or county, to the retail water supplier, and to the owner of record. A sample of such a form, which shall be provided by the city or county is set out in Exhibit "B" following this chapter.

D. PUBLIC EDUCATION—PUBLICATIONS. Local agencies shall provide information to owners of all new, single-family residential homes regarding the design, installation, and maintenance of water efficient landscapes.

Information about the efficient use of landscape water shall be provided to water users throughout the community. (Ord. 488 § 1, 1992)

13.32.040 Provisions for existing landscapes.

A. Water Management. All existing landscaped areas to which the city or county provides water that are one acre or more shall have a landscape irrigation audit at least every five years. At a minimum, the audit shall be in accordance with the California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook, the entire document which is hereby incorporated by reference. (See Landscape Irrigation Auditor Handbook, Dept. of Water Resources, Water Conservation Office (June 1990) Version 5.5.)

1. If the project's water bills indicate that they are using less than or equal to the maximum applied water allowance for that project site, an audit shall not be required.

2. Recognition of projects that stay within the maximum applied water allowance is encouraged.

B. Water Waste Prevention. Cities and counties shall prevent water waste resulting from inefficient landscape irrigation by prohibiting runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways or structures. Penalties for violation of these prohibitions shall be established locally. (Ord. 488 § 1, 1992)

13.32.050 Effective precipitation.

SAMPLE CERTIFICATE OF SUBSTANTIAL COMPLETION

If effective precipitation is included in the calculation of the estimated total water use, an effective precipitation disclosure statement (similar to the sample Exhibit "C" set out following this chapter) shall be completed, signed, and submitted with the landscape documentation package. No more than twenty-five percent of the local annual mean precipitation shall be considered effective precipitation in the calculation of the estimated total water use. (Ord. 488 § 1, 1992)

EXHIBIT "A" SAMPLE WATER CONSERVATION CONCEPT STATEMENT

Project Site: Project Number:

Project Location:

Landscape Architect/Irrigation Designer/Contractor:

Included in this project submittal package are:

(Check to indicate completion)

___ 1. Maximum Applied Water Allowance:

___ gallons or cubic feet/year

___ 2. Estimated Applied Water Use:

___ gallons or cubic feet/year

*__ 2.(a) Estimated Amount of Water Expected from Effective Precipitation:

___ gallons or cubic feet/year

___ 3. Estimated Total Water Use:

___ gallons or cubic feet/year

Note: * If the design assumes that a part of the Estimated Total Water Use will be provided by precipitation, the Effective Precipitation Disclosure Statement in Section 704 shall be completed and submitted. The Estimated Amount of Water Expected from Effective Precipitation shall not exceed 25 percent of the local annual mean precipitation (average rainfall).

___ 4. Landscape Design Plan

___ 5. Irrigation Design Plan

___ 6. Irrigation Schedule

___ 7. Maintenance Schedule

___ 8. Landscape Irrigation Audit Schedule
___ 9. Grading Design Plan
___ 10. Soil Analysis

Description of Project

(Briefly describe the planning and design actions that are intended to achieve conservation and efficiency in water use.)

Date:_____ Prepared By:_____

EXHIBIT "B" SAMPLE CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Site/Number:_____
Project Location:_____

Preliminary Project Documentation Submitted (Check indicating submittal)

___ 1. Maximum Applied Water Allowance:
___ (gallons or cubic feet per year)
___ 2. Estimated Applied Water Use:
___ (gallons or cubic feet/year)
___ *2a. Estimated Amount of Water Expected from Effective Precipitation:
___ (gallons of cubic feet/year)
___ 3. Estimated Total Water Use:
___ (gallons of cubic feet/year)

NOTE: *If the design assumes that a part of the Estimated Total Water Use will be provided by precipitation, the Effective Precipitation Disclosure Statement shall be completed and submitted. The estimated Amount of Water Expected from Effective Precipitation shall not exceed 25 percent of the local annual mean precipitation (average rainfall).

___ 4. Landscape Design Plan
___ 5. Irrigation Design Plan
___ 6. Irrigation Schedules
___ 7. Maintenance Schedule
___ 8. Landscape Irrigation Audit Schedule
___ 9. Grading Design Plan
___ 10. Soil Analysis

Post-Installation Inspection: (Check indicating substantial completion)

___ A. Plants installed as specified
___ B. Irrigation system installed as designed
B. ___ dual distribution system for recycled water
B. ___ minimal run off or overspray
___ C. Landscape irrigation Audit performed

___ Project submittal package and a copy of this certification has been provided to owner/manager and local water agency.

Comments:

I/we certify that work has been installed in accordance with the contract documents.

Contractor Signature

Date License Number

I/we certify that based upon periodic site observations, the work has been substantially completed in accordance with the Water Efficient Landscape Ordinance and that the landscape planting and irrigation installation conform with the approved plans and specifications.

Landscape Architect Signature

or Irrigation Designer/Consultant

or Licensed or Certified Professional in a Related Field

Date State License Number

I/we certify that I/we have received all of the contract documents and that it is our responsibility to see that the project is maintained in accordance with the contract documents.

Owner Signature

Date

EXHIBIT "C" SAMPLE EFFECTIVE PRECIPITATION DISCLOSURE STATEMENT

I certify that I have informed the project owner and developer that this project depends on _____ (gallons or cubic feet) of effective precipitation per year. This represents _____ percent of the local mean precipitation of _____ inches per year.

I have based my assumptions about the amount of precipitation that is effective upon:

I certify that I have informed the project owner and developer that in times of drought, there may not be enough water available to keep the entire landscape alive.

Licensed or Certified Landscape Professional

I certify that I have been informed by the licensed or certified landscape professional that this project depends upon _____ (gallons or cubic feet) of effective precipitation per year. This represents _____ percent of the local mean precipitation of _____ inches per year.

I certify that I have been informed that in times of drought, there may not be enough water available to keep the entire landscape alive.

Owner Developer

EXHIBIT "D" REFERENCE EVAPOTRANSPIRATION

(In inches—Historical Data, extrapolated from 12-month Normal Year ETo Maps and U.C. publication 21426)

SAN BERNARDINO COUNTY

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann ETo.
Baker	2.7	3.9	6.1	8.3	10.4	11.8	12.2	11.0	8.9	6.1	3.3	2.1	86.6
Barstow	2.6	3.6	5.7	7.9	10.1	11.6	12.0	10.4	8.6	5.7	3.3	2.1	83.6
Chino	2.1	2.9	3.9	4.5	5.7	6.5	7.3	7.1	5.9	4.2	2.6	2.0	54.6
Crestline	1.5	1.9	3.3	4.4	5.5	6.6	7.8	7.1	5.4	3.5	2.2	1.6	50.8
Needles	3.2	4.2	6.6	8.9	11.0	12.4	12.8	11.0	8.9	6.6	4.0	2.7	92.1
Lucerne Valley	2.2	2.9	5.1	6.5	9.2	11.0	11.4	9.9	7.4	5.0	3.0	1.8	75.3

San Bernardino	2.0	2.7	3.8	4.6	5.7	6.9	7.9	7.4	5.9	4.2	2.6	2.0	55.6
29 Palms	2.6	3.6	5.9	7.9	10.1	11.2	11.2	10.3	8.6	5.9	3.4	2.2	82.9
Victorville	2.3	3.1	4.9	6.7	9.3	10.0	11.2	9.8	7.4	5.1	2.8	1.8	74.6

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Chapter 13.06
WATER CONSERVATION PLAN

13.06.010: TITLE:

This chapter establishes the *CITY OF REDLANDS WATER CONSERVATION PLAN.* (Ord. 2151 § 1, 1991)

13.06.020: INTENT:

The city council of the city of Redlands declares that the public health, safety and general welfare requires that water resources available to the city be put to maximum beneficial use, that the waste or unreasonable use of water be prevented, and that the conservation of such water must occur to protect the people and property of the city of Redlands. (Ord. 2151 § 1, 1991)

13.06.030: PURPOSE AND SCOPE:

A. The purpose of this chapter is to reduce the nonessential use of water to conserve city water supplies, thereby minimizing the effect of a shortage of water supplies on city users. The water conservation plan here established is to:

1. Protect the health, safety, and welfare of the citizens and property owners of the city;

2. Assure the maximum beneficial use of city water supplies; and

3. Attempt to provide sufficient water supplies to meet the basic needs of human consumption, sanitation and fire protection.

B. This chapter shall remain in effect until the city council declares by ordinance that the provisions of this chapter are no longer applicable to existing water supply conditions and the supply of water available for distribution within the city's service area has been replenished or augmented. (Ord. 2151 § 1, 1991)

13.06.040: AUTHORIZATION:

A. The city is authorized to implement the provisions of this chapter following a public hearing as specified below upon the city council's determination by majority vote of the entire council that such implementation is necessary to protect the public health and safety.

B. A public hearing shall be held to determine whether to adopt a water conservation plan, and, if so, which measures provided herein should be implemented. A similar public hearing shall be held by the city council prior to the implementation or termination of each incremental water conservation stage pursuant to section 13.06.080 of this chapter. Notice of the time and place of these public hearings shall be published not less than ten (10) days before the hearing in a newspaper of general circulation.

C. Upon adoption by the city council, the provisions of this chapter shall become effective immediately. Notice of the implementation of successive stages of water conservation shall be given to water users immediately both by publication at least once in a newspaper of general circulation within ten (10) days after adoption, and by a notice enclosed with the next regular city invoice for water or utility service.

D. If the city council cannot meet in time to act to protect the public interest pursuant to this chapter, the city manager or his designee is hereby authorized and directed to implement such provisions of this chapter upon his or her written determination that the city cannot supply adequate water to meet the ordinary demands of water consumers, and that such implementation is necessary to protect the public health or safety. Such written determination shall be presented to the city council at its next meeting for review, revocation or ratification. Such meeting shall be held as soon as possible. (Ord. 2151 § 1, 1991)

13.06.050: APPLICATION:

The provisions of this chapter shall apply to all persons, customers, and property served water by the city wherever situated. (Ord. 2151 § 1, 1991)

13.06.060: GENERAL PROHIBITION:

No water user shall make, cause, use, or permit the use of water supplied by the city for residential, commercial, industrial, agricultural, governmental or any other use in a manner contrary to this chapter. Waste or the unreasonable or nonbeneficial use of water is prohibited in the city of Redlands. (Ord. 2151 § 1, 1991)

13.06.070: MANDATORY CONSERVATION; STAGE CRITERIA:

The director of the public works department shall recommend guidelines for adoption by the city council setting forth the criteria to determine when water supply conditions in the city require the implementation or termination of each water conservation stage. Such guidelines shall be updated when the director determines that water availability so requires. The director shall include in such guidelines a calendar symbol system designating allowed days for irrigation. (Ord. 2151 § 1, 1991)

13.06.080: MANDATORY CONSERVATION; PHASE IMPLEMENTATION:

The public works department shall monitor the projected supply and demand for water by its customers on a daily basis during the months of June, July, August, September, and October and shall recommend to the city manager the extent of conservation required through the implementation and/or termination of particular conservation stages to allow the department to prudently plan for and supply water to its customers. Thereafter, the city manager may recommend to the city council the implementation or termination of the appropriate stage of water conservation in accordance with the applicable provisions of this chapter. The city council may implement or terminate the appropriate stage pursuant to section 13.06.040 of this chapter. Notice of the implementation or termination of each stage shall be given pursuant to subsection 13.06.040C of this chapter.

A. Stage I, Voluntary Conservation Measures: Water users are requested to limit their water use from June 1 to October 1 of each year to an amount necessary for health, safety, economic necessity and irrigation. Water users should use water wisely and prevent its waste or unreasonable use.

   The following actions are recommended:

   1. Adjust sprinklers and irrigation systems to avoid overspray, runoff, and waste. Avoid watering on windy days;

   2. Install water saving devices, such as low flow showerheads and faucet aerators;

   3. Select low water demand shrubs, ground covers and trees for new landscaping;

4. Restrict water service in restaurants.

B. Stage II, Mandatory Compliance; Water Alert: When implemented pursuant to subsection 13.06.040B of this chapter and noticed pursuant to subsection 13.06.040C of this chapter, the following restrictions shall apply to the use of water supplied by the city in addition to the recommendations of stage I:

1. Irrigation of lawns, gardens, landscaped areas, trees, shrubs, or other plants utilizing individual sprinklers or sprinkler systems is allowed only on an irrigation day designated by the city and is prohibited between the hours of twelve o'clock (12:00) noon and eight o'clock (8:00) P.M. However, irrigation is permitted at any time if:

   a. A handheld hose is used, or

   b. A handheld, faucet filled bucket containing five (5) gallons or less is used, or

   c. A drip irrigation system is used.

   Commercial nurseries, commercial farmers, and grove settings requiring twenty four (24) hour irrigation cycles, are exempt from stage II irrigation restrictions, but shall curtail all nonessential water use.

2. The washing of automobiles, trucks, trailers, boats, aircraft and other types of mobile equipment is allowed only on designated irrigation days and is prohibited between the hours of twelve o'clock (12:00) noon and eight o'clock (8:00) P.M. Mobile equipment washing shall be done only with a handheld bucket or a handheld hose equipped with a positive shutoff nozzle for quick rinses.

   Notwithstanding the above, washing of such equipment may be done at any time on the immediate premises of a commercial car wash or commercial service station with washwater recycling facilities. Garbage trucks and vehicles to transport food and perishables are exempt from these regulations if the public health or safety requires frequent vehicle cleaning.

3. The washing or sprinkling of foundations or structures shall be allowed only by city permit. Regulations for such permit shall be enacted by resolution.

4. The refilling or adding of water to uncovered swimming or wading pools or spas is allowed only on designated irrigation days and is prohibited between the hours of twelve o'clock (12:00) noon and eight o'clock (8:00) P.M.

5. The operation of any ornamental fountain or other structure making similar decorative use of water is prohibited, unless the fountain or structure has a recycling system.

6. The use of water for irrigation of golf greens and tees is allowed only on designated irrigation days and is prohibited between twelve o'clock (12:00) noon and eight o'clock (8:00) P.M. The irrigation of golf course fairways is absolutely prohibited. The irrigation of golf courses utilizing treated wastewater or reused water is not subject to these prohibitions.

7. Restaurants shall not serve water to customers except upon specific customer request.

8. Failure to repair controllable leaks is prohibited.

9. Use of running water to wash driveways, sidewalks, parking areas, patios, tennis courts and other paved areas is prohibited.

10. Failure to prevent excessive runoff from irrigation activities is prohibited.

11. Use of water from fire hydrants is limited to firefighting and other activities necessary to maintain the health, safety, and welfare of the citizens of Redlands. The use of water piped from fire hydrants and sprinkled for construction purposes is prohibited.

C. Stage III, Mandatory Compliance; Water Warning: When implemented pursuant to subsection 13.06.040B of this chapter and noticed pursuant to subsection 13.06.040C of this chapter, the following restrictions, in addition to all elements of stages I and II, shall apply:

1. All outdoor irrigation of vegetation shall occur only on designated days using handheld hoses, drip irrigation, or handheld buckets and is prohibited between the hours of twelve o'clock (12:00) noon and eight o'clock (8:00) P.M.

   Exemption: Permanently installed automatic sprinkler systems may be used on designated irrigation days but are prohibited between the hours of twelve o'clock (12:00) noon and eight o'clock (8:00) P.M.

2. The watering of golf tee areas is prohibited except with treated wastewater or reused water.

D. Stage IV, Mandatory Compliance; Water Emergency: Pursuant to California Water Code section 350 et seq., the city council may declare a water shortage emergency upon its determination that the ordinary demands of city water users cannot be satisfied without depleting the city water supply to a point of insufficient water for human consumption, sanitation and fire protection. When implemented pursuant to subsection 13.06.040B of this chapter and noticed pursuant to subsection 13.06.040C of this chapter, the following restrictions, in addition to all elements of stages I, II and III, shall apply:

1. All outdoor irrigation of vegetation shall be allowed only between the hours of eight o'clock (8:00) P.M. and twelve o'clock (12:00) midnight on designated irrigation days.

2. The washing of automobiles, trucks, trailers, boats, airplanes, and other types of mobile equipment not occurring upon the immediate premises of commercial car washes and commercial service stations and not in the immediate interest of the public health or safety is prohibited.

3. The washing of automobiles, trucks, trailers, boats, airplanes, or other types of mobile equipment upon the immediate premises of commercial car washes and commercial service stations shall occur only between the hours of twelve o'clock (12:00) noon and six o'clock (6:00) P.M.

4. Commercial nurseries and commercial farmers using city water shall water only on designated irrigation days between the hours of ten o'clock (10:00) A.M. and six o'clock (6:00) P.M. and shall use only handheld hoses, drip irrigation systems, or handheld buckets.

5. The filling, refilling, or adding of water to uncovered swimming or wading pools and spas is prohibited at any time of day or night.

6. The operation of any ornamental fountain or similar structure is prohibited.

7. The issuance of new service connections and meters is prohibited. (Ord. 2151 § 1, 1991)

13.06.090: RELIEF FROM COMPLIANCE:

A city water user may file a request for relief from any provision of this chapter. The city manager shall review all requests and hold a hearing with each applicant. The city manager may grant relief from the provisions of this chapter if he determines that special circumstances make compliance not reasonably possible, or that the restrictions herein would either:

A. Cause an unnecessary and undue hardship to the water user or the public; or

B. Cause an emergency condition affecting the health, sanitation, fire protection or safety of the water user or of the public.

Such relief may be granted only upon written request to the city. Upon granting such relief, the city manager may impose any conditions he determines to be just and proper. The city manager shall make his determination within fourteen (14) days of receipt of the request for relief and shall inform the applicant of the decision in writing.

An applicant shall have the right to appeal the city manager's decision regarding his or her application to the city council or its designee. The appeal must be in writing and received by the city within ten (10) days of the date of the city manager's written decision. The appeal shall be heard by the city council or its designee within a reasonable period of time from the date the appeal is filed. The city shall provide written notice to the applicant of the time and date of the hearing. The city council or its designee, at its discretion, may affirm, reverse or modify the city manager's decision and impose any

conditions it deems proper. The decision of the city council shall be final. (Ord. 2151 § 1, 1991)

13.06.100: FAILURE TO COMPLY:

Violation by any customer of the water use prohibitions of this chapter shall be penalized as follows:

A. First Violation; Notice Of Noncompliance: The city manager is authorized and directed to issue a written notice of noncompliance to any water user who, in the reasonable judgment of the city manager, has failed or refused in a significant way to comply with those water use curtailment provisions of this chapter currently in effect. Any such notice of violation shall specify the time, place and manner of noncompliance, and shall specify a reasonable period to achieve compliance. Any notice of noncompliance shall be directed to the customer of record for the premises where the noncompliance was observed. Delivery may be through regular mail or by personal delivery with a declaration of delivery returned to the city manager.

B. Second Violation; Warning Of Penalties: For a second violation by any customer of the water use curtailment provisions of this chapter currently in effect, a written warning notice of the future imposition of penalties on the customer's water bill shall be issued. Any such warning notice shall specify the time, place and manner of noncompliance and shall require compliance within two (2) days. Any warning notice shall be directed to the customer of record for the premises where the violation has occurred. Delivery will be made by personal delivery with a declaration of delivery returned to the city manager.

C. Third Violation; Imposition Of Penalties:

1. For a third violation by any customer of this chapter, a citation shall be issued and a surcharge imposed on the customer's next regular water bill. The surcharge shall consist of a percentage of the customer's commodity charge as shown on the most recent water bill, based upon the water conservation stage then in effect at the time of the most recent violation. The penalty surcharge for each stage is shown below:

Stage II		25 percent
Stage III		50 percent
Stage IV		75 percent

As an example, if a water user's most recent commodity charge is twenty five dollars ($25.00), a third violation while the city is in stage III would result in the imposition of a twelve dollar fifty cent ($12.50) surcharge.

2. If a water customer cited for a third violation fails or refuses to comply with the requirements of this chapter or to pay any outstanding water bills including surcharges, the city manager is hereby granted discretionary authority pursuant to California Water Code section 375 to cause a flow restricting device to be installed at the meter to reduce water availability to the customer's service address. Pursuant to California Water Code section 35423, if installation of a flow restrictor is infeasible, impractical or is unlikely to induce compliance with this chapter, the city manager may authorize a shutoff of service to the premises involved. (Ord. 2151 § 1, 1991)

13.06.110: HEARING REGARDING VIOLATIONS:

A. Any customer receiving notice of a second or subsequent violation pursuant to section 13.06.100 of this chapter shall have a right to a hearing by the city manager within fifteen (15) days of mailing or other delivery of the notice of violation.

B. The customer's written request for a hearing within the fifteen (15) day period shall automatically stay the imposition of monetary penalties on the customer's water bill until the city manager renders his decision. The decision of the city manager shall be final and not subject to further appeal pursuant to this code. (Ord. 2751, 2011)

13.06.120: CITY MANAGER DELEGATION:

The city manager may delegate all duties and responsibilities hereunder. (Ord. 2151 § 1, 1991)

13.06.130: SEVERABILITY:

If any provision, section, subsection, sentence, clause, or phrase of this chapter, or the application of same to any person or set of circumstances is held to be unconstitutional, void, or invalid, such decision shall not affect the remaining portions of this chapter which

shall remain in full force and effect, and all provisions of this chapter are declared to be severable for that purpose. (Ord. 2151 § 1, 1991)

13.06.140: INCOMPATIBLE PROVISIONS:

To the extent any provision of this chapter is incompatible with or at variance with any prior adopted ordinance or resolution, the provisions of this chapter shall take precedence, and all prior ordinances and resolutions shall be interpreted to harmonize with and not change the provisions of this chapter. (Ord. 2151 § 1, 1991)

13.06.150: PUBLIC HEALTH AND SAFETY NOT TO BE AFFECTED:

Nothing in this chapter shall be construed to require the city to curtail the supply of water to any customer when such water is required by that customer to maintain an adequate level of public health or public safety. (Ord. 2151 § 1, 1991)

13.06.160: EXEMPTION FROM CALIFORNIA ENVIRONMENTAL QUALITY ACT:

The city council determines that the adoption of this chapter and implementation of the measures set forth herein are exempt from review under the California environmental quality act[1] because it is an action taken to mitigate or prevent a water shortage emergency, and to protect natural resources. The city council directs the city manager or his designee to prepare and file a notice of exemption as soon as possible following adoption of the ordinance codified in this chapter. (Ord. 2151 § 1, 1991)

Exhibit "A"

CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT

300 North "D" Street
San Bernardino, CA 92401

RULE AND REGULATION NO. 21
GENERAL WATER SERVICE/WATER RATES

The following rates shall be charged for all water furnished for domestic, commercial, industrial, and municipal water use within the City of San Bernardino, and for any other purpose for which no rate is specified.

A. MINIMUM MONTHLY CHARGE All users will be assessed a minimum monthly charge to recover fixed costs, such as meter replacement, customer service, mailing costs, bill payment and debt service. The rates will be as follows:

Meter Size	February 1, 2010	January 1, 2011	January 1, 2012
½ inch or ⅝ inch	$ 10.55	$ 12.20	$ 12.90
¾ inch	$ 13.00	$ 15.15	$ 16.15
1 inch	$ 17.90	$ 21.00	$ 22.60
1½ inch	$ 30.15	$ 35.75	$ 38.80
2 inch	$ 44.85	$ 53.45	$ 58.20
3 inch	$ 79.15	$ 94.75	$ 103.50
4 inch	$ 128.15	$ 153.70	$ 168.20
6 inch	$ 250.70	$ 301.15	$ 330.00
8 inch	$ 397.75	$ 478.10	$ 524.15
10 inch	$ 569.30	$ 684.55	$ 750.65

B. COMMODITY CHARGE: This charge recovers water production and treatment costs, as well as associated variable costs of the Department. This rate is charged per hundred cubic feet (hcf) of water sold.

Commodity Charge per hcf	February 1, 2010	January 1, 2011	January 1, 2012
	$1.05	$1.10	$1.15

C. REPLENISHMENT CHARGE: This charge recovers the cost of water purchased to replenish the local basin and may be adjusted up or down, depending upon the amount of replenishment required. This rate is charged per hundred cubic feet (hcf) of water sold.

Replenishment Charge per hcf	February 1, 2010	January 1, 2011	January 1, 2012
	$0.09	$0.09	$ 0.09

D. ELEVATION CHARGE: This charge recovers electrical costs to transport water through the system and is specific to each zone. The electric cost incurred at plant facilities within each elevation level is distributed across water usage within that zone. This rate is charged per hundred cubic feet (hcf) of water sold.

Elevation zone	February 1, 2010	January 1, 2011	January 1, 2012
Zone 1	$0.09	$0.10	$0.11
Zone 2	$0.17	$0.18	$0.19
Zone 3	$0.15	$0.16	$0.17
Zone 4	$0.12	$0.13	$0.14
Zone 5	$0.21	$0.22	$0.23
Zone 6	$0.21	$0.22	$0.23

Note: the Energy Surcharge previously collected is now included in this Elevation Charge.

E. CONSERVATION CHARGE AND TIERS: To encourage conservation, customer accounts placing a greater demand on the water system will be assessed a higher cost. Initially, customers using in excess of their class average by service size listed below will pay a higher rate for water usage that falls in the second tier. To encourage greater conservation over a longer period of time, each tier and charge will adjust annually. This rate is charged per hundred cubic feet (hcf) only on that usage above the level defined in the tier table below. Revenues recovered from these charge will fund conservation programs sponsored by the Department.

Conservation Charge per hcf	January 1, 2012
	$0.35

All usage in hundred cubic feet (hcf) in excess of that listed below, by class, is billed the conservation charge. *As an example:* As of July 1, 2012, residential use equal to or below 32 hcf in a monthly billing period will not be assessed an additional conservation charge. However, each hcf billed above 32 will be assessed an additional 35¢ per hcf. The table below indicates the hcf cutoff for each customer class by meter size.

Conservation Tiers	January 1, 2012
Residential	32
MDU (2)	42
MDU (2+) per unit	17
Non-residential ⅝"	24
Non-residential ¾"	36
Non-residential 1"	65
Non-residential 1½"	150
Non-residential 2"	250
Non-residential 3"	740
Commercial ⅝"	42
Commercial ¾"	55
Commercial 1"	130
Commercial 1½"	275
Commercial 2"	445
Commercial 3"	875
Commercial 4"	2,400
Commercial 6"	9,000

F. ASSESSMENT DISTRICT CHARGE: Water furnished to the City for landscape assessment districts or funded from other than the City's General fund will be charged the following rate per hundred cubic feet (hcf) of water sold.

Assessment District Charge per hcf	**February 1, 2010**	**January 1, 2011**	**January 1, 2012**
	\$0.37	\$0.40	\$0.45

G. UNMETERED CHARGE: A "jumper" may be substituted for a water meter during single or multi-family housing construction at a charge of \$50 per month for a maximum of 120 calendar days or until the lot landscaping begins. Thereafter, a water meter shall be installed subject to all fees and charges as listed above prior to the issuance of a certificate of occupancy. Water used for tract grading and jetting of trenches is not covered in the above charge and is subject to the fees and charges listed in Rule and Regulation No. 16.

H. SURCHARGE – OUTSIDE CITY LIMITS: Any service installed outside the incorporated territory of the City after February 1, 1991 may be billed the meter charge and all required consumption related charges as set forth in this rule and regulation, multiplied by 1.5.

I. WATER SUPPLY SHORTAGE RATES: To comply with State of California mandates, the City of San Bernardino Municipal Water Department shall implement the following procedure in response to drought or water supply shortage declarations or similar service interruptions in the delivery of water to its customers.

During any drought or water supply shortage condition, the Department's General Manager may declare any one of three shortage level responses with ratification by the Board of Water Commissioners (Board) within three calendar days. A declaration of a water supply shortage may result from:

- Interruption of service through major plant failure;
- Interruption of replenishment water from various resources;
- Rainfall level at twenty-five percent (25%) or more below normal levels for at least six months;
- A natural disaster or other emergency event;
- Emergency regulations by the State Water Resources Control Board (SWRCB) and/or Executive Order(s) from the Governor's office.

Stage I (Voluntary Restrictions) incurs no financial penalties but requires an ongoing commitment to a water conservation program. During Stage I, the Department shall:

- Offer educational resources and landscaping classes;
- Offer rebate programs for water smart appliances and other water saving devices;
- Encourage voluntary conservation through continued media announcements;
- Request the City Manager to direct city parks, facilities and golf courses to restrict landscape watering to off-peak hours to reduce demand on the water system and eliminate the 60% evaporation rate during daytime watering.

- Provide reminder notices regarding noted water waste; and
- Offer community outreach programs.

Due to the continuous conservation efforts required to preserve San Bernardino's water supply in the region's arid climate, Stage I will be maintained at all times.

Stage II (Mandatory Restrictions) will impose a five percent (5%) reduction in water usage and assess financial penalties on usage in excess of those amounts.

A base allowance for each customer will be established based upon their 2013 calendar year's water usage. A ten percent (10%) surcharge will be applied to each billing unit that exceeds the (5%) required reduction in base allowance. Where the customer does not have consumption history from 2013, then the Department shall use the customer's rate/class consumption average, by meter size, as the benchmark.

As an example: A customer used 20 billing units in August 2013. During a Stage II five percent (5%) usage reduction, the customer is permitted 19 billing units during the August 2014 billing period.

20 hcf x 5% = 1 hcf
20 hcf – 1 hcf = 19 hcf August 2014 Baseline

If that customer utilizes 19 or less billing units, no financial penalty is assessed. However, should that customer utilize 25 billing units, a ten percent (10%) surcharge will be assessed for each billing unit in excess of 19:

25 hcf – 19 hcf = 6 hcf x 10% x $1.15 (Commodity Rate) = $.69 Surcharge

Additionally, during Stage II, the Department mandates the following:

- Irrigation shall only be allowed between the off-peak hours of 6:00 pm through 8:00 am;
- Irrigation shall be limited to four days per week on Mondays, Wednesdays, Fridays and Sundays only;
- No watering of outdoor landscapes that cause excessive runoff;
- No washing down driveways, sidewalks, or other hardscapes;
- The washing of cars, trucks, or other vehicles is not permitted except with an automatic shut-off device, or at a commercial car washing facility designated for vehicle washing;
- No use of fountains that use potable water, unless the water is recirculated;
- Increase advertisement of conservation measures;
- Maintain a message center for reporting water waste;
- Determine course of action to remediate reported water waste;
- Request the City Manager to direct Parks and Recreation, City Facilities and all golf courses to limit outdoor watering for irrigation to four days per week, and also only between the hours of 6:00 pm through 8:00 am.
- All leaks shall be corrected within seventy two (72) hours of Department notification.

The Board of Water Commissioners reserves the right to declare additional Stage II mandatory restrictions and prohibitions in the future if required by the State of California.

Stage IIA (Extreme Mandatory Restrictions) will impose a twenty-eight percent (28%) reduction in water usage and assess financial penalties on usage in excess of those amounts.

A base allowance for each customer will be established based upon their 2013 calendar year's water usage. A twenty percent (20%) surcharge will be applied to each billing unit that exceeds the (28%) required reduction in base allowance. Where the customer does not have consumption history from 2013, then the Department shall use the customer's rate/class consumption average, by meter size, as the benchmark.

As an example: A customer used 20 billing units in August 2013. During a Stage IIA twenty-eight percent (28%) usage reduction, the customer is permitted 14.4 billing units during the August 2015 billing period.

20 hcf x 28% = 5.6 hcf
20 hcf – 5.6 hcf = 14.4 hcf August 2015 Baseline

If that customer utilizes 14.4 or less billing units, no financial penalty is assessed. However, should that customer utilize 25 billing units, a twenty percent (20%) surcharge will be assessed for each billing unit in excess of 14.4 hcf. Assuming the commodity rate is $1.15 per hcf:

25 hcf – 14.4 hcf = 10.6 hcf x 20% x commodity rate.

Surcharge = 10.6 hcf x 0.2 x $1.15 = $2.44

Additionally, during Stage IIA, the Department mandates the following:

- Irrigation shall only be allowed between the off-peak hours of 6:00 pm through 8:00 am;
- Irrigation shall be limited to three days per week; Mondays, Wednesdays and Fridays only;
- Maximum irrigation time of 15 minutes per station per designated irrigation day;
- Irrigation will be prohibited for a full 48 hours after a significant precipitation event (rainfall in excess of 1/8" as measured at the Department's Mill and D rain gauge) has occurred over the City of San Bernardino. Department will maintain website notification when this restriction will be in place;
- No watering of outdoor landscapes that cause excessive runoff;
- No washing down driveways, sidewalks, or other hardscapes;
- The washing of cars, trucks, or other vehicles is not permitted except with an automatic shut-off device, or at a commercial car washing facility designated for vehicle washing;
- No use of fountains that use potable water, unless the water is recirculated;
- Increase advertisement of conservation measures;
- Maintain a message center for reporting water waste;
- Determine course of action to remediate reported water waste;

- Request the City Manager to direct Parks and Recreation, City Facilities and all golf courses to limit outdoor watering for irrigation to three days per week, and also only between the hours of 8:00 pm through 6:00 am.
- Irrigation of ornamental turf on public street medians is prohibited.
- Use of potable water outside of new residential home and commercial/industrial construction that is not delivered by drip or micro-spray systems is prohibited.
- The serving of drinking water other than upon request is prohibited, in eating or drinking establishments including but not limited to restaurants, hotels, cafes, cafeterias, bars or any other public place where food or drink are served.
- All hotels/motels shall provide their guests with the option of choosing not to have towels and linens laundered daily. The hotel/motel must prominently display notice of this option in each bathroom using clear and easy language.
- All leaks shall be corrected within seventy two (72) hours of Department notification.

The Board of Water Commissioners reserves the right to declare additional mandatory restrictions and prohibitions in the future if required by the State of California.

Stage III ***(Water Shortage Emergency)*** will impose a fifty percent (50%) reduction in water usage and assess financial penalties on usage in excess of those amounts. A Stage III water supply shortage condition shall be declared if a catastrophic interruption of water supply or distribution facility occurs as the result of drought, earthquake, wildfire, extended power outage or any other disaster in which the Department may be prevented from meeting the water demands of its customers. Prior to the Board of Water Commissioners taking action on the Stage III declaration, notice will be given to the Mayor and the City Manager of the mandatory restrictions that will be placed into effect.

A base allowance for each customer will be established based upon their 2013 calendar year water usage. A one hundred percent (100%) surcharge will be applied to each billing unit that exceeds the fifty percent (50%) required reduction in base allowance. Where the customer does not have consumption history from 2013, then the Department shall use the customer's rate/class consumption average, by meter size, as the benchmark.

As an example: A customer used 20 billing units in August 2013. During a Stage III fifty percent (50%) usage reduction, the customer is permitted 10 billing units during the August 2015 billing period.

20 hcf x 50% = 10 hcf
20 hcf – 10 hcf = 10 hcf August 2015 Baseline

If that customer utilizes 10 or less billing units, no financial penalty will be assessed. However, should that customer utilize 25 billing units, a one hundred percent (100%) surcharge will be assessed for each billing unit in excess of 10: Assuming the commodity rate is $1.15 per hcf:

25 hcf – 10 hcf = 15 hcf x 100% x $1.15 (commodity rate.) = $17.25 Surcharge

Additionally, during Stage III, the Department shall:

- Irrigation shall be allowed only between the off-peak hours of 8:00 pm through 6:00 am; however, the Department reserves the right to prohibit all outdoor irrigation at any time depending on the severity of the emergency.
- Irrigation shall be limited to two days per week, on Mondays and Thursdays; however, the Department reserves the right to prohibit all outdoor irrigation at any time depending on the severity of the emergency;
- No watering of outdoor landscapes that cause excessive runoff;
- No washing down driveways, sidewalks, or other hardscapes;
- No washing of vehicles except at commercial vehicle washing facilities;
- No use of fountains that use potable water, unless the water is recirculated;
- Increase advertisement of conservation measures;
- Maintain a message center for reporting water waste;
- Determine course of action to remediate reported water waste;
- Request the City Manager to direct parks, facilities and golf courses to limit outdoor watering for irrigation to two days per week, and also only between the off-peak hours of 8:00 pm through 6:00 am; however, the Department reserves the right to prohibit all outdoor irrigation at any time depending on the severity of the emergency;
- The serving of drinking water other than upon request is prohibited, in eating or drinking establishments including but not limited to restaurants, hotels, cafes, cafeterias, bars or any other public place where food or drink are served.
- All hotels/motels shall provide their guests with the option of choosing not to have towels and linens laundered daily. The hotel/motel must prominently display notice of this option in each bathroom using clear and easy language.
- All leaks shall be corrected within seventy-two (72) hours of Department notice;
- Deny all new construction meter requests;
- Remove or lock out all existing construction meters in service.

Notices of Violation:

- Step 1: 1st Violation warning letter to the customer/owner describing the water waste issue and notice of potential fines for continuing water waste, providing a Department customer service contact for conservation information and assistance. Provides customer/owner seven calendar days to remedy the water waste situation and comply with conservation restrictions.

- Step 2: 2nd Violation, customer/owner site visit or phone call to discuss nature of the water waste and potential solutions. A second Notice of Violation letter allowing seven calendar days to remedy the water waste situation and comply with conservation restrictions.

- Step 3: 3rd Violation: Third Notice of Violation letter informing customer/owner of financial penalty and allowing seven calendar days to remedy water waste situation and comply with conservation restrictions. One hundred dollars ($100.00) penalty assessed.

- Step 4: Subsequent Violation(s): Additional penalties increasing incrementally by one hundred dollars ($100.00) per occurrence, up to a limit of five hundred dollars ($500.00) per incident. Customer/owner shall receive a separate notice per each subsequent violation and will have seven (7) calendar days after each notification to remedy the water waste situation and comply with conservation restrictions;

- Step 5: The Department may restrict the amount of water supplied to any customer/owner failing to comply with conservation standards. The provisions of this section shall be applied in addition to any other penalties provided in this rule and shall be applied at the discretion of the Department.

  Exceptions: The restrictions of water consumption outlined herein are not applicable to water usage necessary for public health and safety or for essential governmental services, such as police, fire, and emergency services. The Department reserves the right to waive any water restriction penalty when, in its discretion, such consumption is required in order to maintain an adequate level of public health and safety.

Payment of Surcharges and Penalties:

All surcharges and penalties imposed under this rule and regulation shall be added to customer's water bills or as a lien on the owner's property and become payable at the same time and in the same manner as such bills or by such other method of collection and payment as established by the Department.

Right to Hearing:

Any customer/owner shall have a right to a hearing with the General Manager of the Department, or his/her designee, on a notice of violation, the assessment of a surcharge or penalty, or the denial and/or lock out of a construction meter, upon written request to the Department. Customer/owner's written request for a hearing must be received by the Department within ten (10) calendar days from the date of notice of violation, or customer/owner's right to a hearing shall be deemed waived.

Customer/owner shall be deemed notified of a violation, surcharge, penalty, or denial and/or lockout of a construction meter upon (1) the personal delivery of the notice to customer or (2) the date of lock out and/or denial of construction meter. If personal delivery is not given, the date on which the notice is placed in the regular mail shall be deemed the date of notification.

Customer/owner's timely written request for a hearing shall automatically stay the imposition of a penalty until the General Manager or his/her designee renders a decision; except that denial of a construction meter request or lock out of an existing construction meter shall remain in effect until the General Manager or his/her designee renders a decision.

The decision of the General Manager or his/her designee may be appealed to the Board of Water Commissioners, provided that the customer files a written notice of appeal with the Department within five calendar days of notification of the decision.

The decision of the General Manager, his/her designee, or the Board (if an appeal is timely filed) shall be final and conclusive and shall not be subject to appeal to the Mayor and Common Council. Once the decision becomes final as provided in this rule and regulation, the time in which judicial review of the decision must be sought shall be governed by California Code of Civil Procedure Section 1094.6, or other applicable State law.

Other Water Conservation Measures:

The Board may order implementation of other water conservation measures in addition to those set forth in this rule and regulation. Such additional water shortage measures shall be implemented in the manner provided in this rule.

Conclusion of a Water Supply Shortage Condition:

The General Manager shall notify the Board when the water supply shortage condition stage level should be reduced. The Board may ratify the General Manager's reduction of stage level. All bills issued after the Board's ratification date shall not include water supply shortage surcharges.

Use of Surcharge Funds:

Any surcharges and fines will be segregated into a restricted cash account managed by the Department to supplement the conservation efforts of the Department.

Approved by BOWC:	May 19, 2015
Effective:	June 1, 2015
Supersedes:	August 19, 2014

ORDINANCE NO. 80
AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE
WEST VALLEY WATER DISTRICT
RESCINDING ORDINANCE 79 AND AMENDING RESOLUTION
NO. 387, WATER SERVICE REGULATIONS, BY AMENDING
ARTICLE NO. 24 - WATER CONSERVATION

WHEREAS, Article 10, Section 2 of the California Constitution declares that waters of the State are to be put to beneficial use, that waste, unreasonable use, or unreasonable method of use of water be prevented, and that water be conserved for the public welfare; and

WHEREAS, the water resources of West Valley Water District ("District") are limited and finite; and

WHEREAS, conservation of certain water supplies and minimization of the effects of water supply shortages that are the result of drought are essential to the public health, safety and welfare; and

WHEREAS, regulation of the time of certain water use and manner of use provide an effective and immediately available means of conserving water; and

WHEREAS, California Water Code Sections 375 et seq. authorize water suppliers to adopt and enforce a comprehensive water conservation program; and

WHEREAS, pursuant to such authority the Board of Directors ("Board") of District adopted Ordinance No. 68 amending Resolution No. 387, to add Article 24 to the District's Service Regulations ("Article 24"); and

WHEREAS, the Board adopted Ordinance No. 78, rescinding Ordinance No. 68, and amending Resolution No. 387, by amending Article 24; and

WHEREAS, the Board adopted Ordinance No. 79, rescinding Ordinance No. 78, and amending Resolution No. 387, by amending Article 24; and

WHEREAS, the adoption of this Ordinance will allow the District to delay or avoid the implementation of more restrictive water use regulations provided that nothing in this Ordinance will prevent the District from implementing more restrictive regulations as authorized by California Water Code Section 350 et. seq; and

WHEREAS, the District has adopted an Urban Water Management Plan ("Plan") that includes water conservation as a necessary and effective component to provide a reliable source of water to meet the needs of the District's customers. The Plan also includes an analysis of actions to be taken in response to water supply shortages. This Ordinance is consistent with the District's

Plan; and

WHEREAS, the State Water Resources Control Board adopted Resolution No. 2014-0038, No. 2014-0718-01E and 2015-0032 to adopt an emergency regulation for statewide urban water conservation ("State Board Regulations"). The State Board Regulations set forth certain prohibited activities and certain actions to be taken by water suppliers, such as the District; and

WHEREAS, the water conservation measures and progressive restrictions on water use identified by this Ordinance provide certainty to water users and enable District to control water use and plan and implement water measures in a fair and orderly manner for the benefit of the public. This Ordinance is further intended to comply with the mandates of the State Board Regulations as such applies to the District.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF WEST VALLEY WATER DISTRICT does ordain that Resolution 387 is hereby amended to amend Article 24 to read as follows:

ARTICLE 24
WATER CONSERVATION

1. Purpose. The purpose of this Article is to provide water conservation measures in order to minimize the effect(s) of a water shortage on the citizens of, visitors to, and the economic well-being of the communities we serve and, by means of this Article, to adopt provisions that will significantly reduce the wasteful and inefficient consumption of water, thereby extending the available water resources required for the domestic, sanitation, and fire protection needs of the citizens of, and visitors to, the communities we serve while reducing the hardship on the District and the general public to the greatest extent possible.

2. Application. The provisions of this Article shall apply to all customers and property within the service area of the District and shall also apply to all property and facilities owned, maintained, operated, or otherwise under the jurisdiction of the District.

a) Exception. The prohibited uses of water provided for by this Ordinance are not applicable to that use of water necessary for public health and safety or for essential government services such as police, fire, and similar emergency services.

3. Policy. Due to the fact that we are located in a semi-arid region and our groundwater is of limited supply and in an overdraft condition and because of these conditions prevailing in the District and areas elsewhere from which the District obtains its water supplies, the general welfare requires that the water resources available to the District be put to the maximum beneficial use to the extent to which they are capable and that the wasteful, inefficient, or unreasonable use, or method of use of our previous, limited, and finite water resources be prevented.

As such, the conservation of such waters is to be exercised with a view to the reasonable and

beneficial and efficient use thereof in the interests of the people of the District and for the public welfare.

Therefore, the District establishes the following goals, objectives, policies, and four-stage water conservation plan pertaining to the conservation and use of water:

2401. GOALS

< The conservation of water.

< The efficient use and distribution of available water supplies.

< Adequate and sufficient potable water supply and availability for the greatest public benefit, with particular regard to human consumption, sanitation, and fire protection.

< Maintain high quality customer service.

< Ensure fiscal soundness.

< Protect environmental quality.

< Meet growing water quality regulations.

< To reduce water consumption in accordance with State law, including, but not limited to the State Board Regulations.

2402. OBJECTIVES

< To conserve all available water supplies.

< To achieve an overall water use reduction.

< To reduce the volume of wastewater.

< To continuously increase consumer awareness about the need for and benefits of water conservation.

< To reduce or eliminate wasteful and inefficient uses of water.

< To assure an adequate supply of potable water sufficient to meet the essential private and public needs of the District's growing population and economy of those communities in which we serve.

< To assure that all new developments and existing dwellings which are remodeled or

added to are equipped with water-conserving devices, fixtures, and appliances.

< To increase the use of native or water-conserving plant species for landscaping purposes.

< The term “base year” shall have the following meaning:

a) The year 2013, if the customer occupied the subject real property for the entire year.

b) If the customer did not occupy the subject real property for the entire year of 2013, the base year for that customer would be the first twelve (12) months the customer occupied the subject real property in or after 2013.

c) If the customer has not occupied the subject real property for a twelve (12) month period on the adoption of this Ordinance, then the District will use the consumption history for the period of time the customer has occupied the subject real property. If the customer has no consumption history for the subject real property then the District will determine goals for that customer based on the averaging of other real properties with similar service types and meter sizes within the same meter reading route (as determined by the District) for the months without consumption history. The customer shall have a ten (10) day period after the customer receives the goals to appeal that determination to the General Manager (as defined herein), in writing. If the customer fails to appeal the determination within the ten (10) day period the goals shall be final. Upon receipt of a timely appeal, the General Manager shall schedule a hearing at which the General Manager or his/her designated representative shall act as the hearing officer. The hearing shall be at least ten (10) days following receipt of the appeal, and the District shall mail written notice of the hearing to the customer at least ten (10) days before the date of said hearing. The determination of the hearing officer with respect to the goals shall be final.

2403. <u>POLICIES</u>

< As a condition of water service, all new structures shall be equipped with high efficiency toilets (1.28 gallons per flush max) as per Section 17921.3 of the California Health and Safety Code, and with low-flow showers and faucets as per Title 24, Part 6, Article 1, T20-1406F of the California Administrative Code, in addition to the insulating of all hot water lines according to California Energy Commission Rules. “New Structures” shall mean buildings obtaining occupancy permits after the effective date of this Ordinance.

As a condition of continued water service, existing structures not so equipped, which require building permits to remodel or expand, shall be retrofitted with toilet tank dams

resulting in 1.28 gallon flushes unless the toilets are to be replaced, in which case the new toilets shall be ultra low-flush (1.28gpf), as stated above, and low-flow showers and faucets. Certification of compliance with this Ordinance shall be forwarded to the District.

< The use of lawns shall be minimized in new commercial, hotel, condominium, and high-density housing and shall be subject to District review and conditioning of projects. The use of native or water-conserving trees, shrubs, lawns, grass, ground cover, vines, and other plant species for landscape planting or replanting purposes is required and shall be approved by the District. (A list of such plants can be obtained at the District office.)

< Large water users, as determined by the District, shall submit a water conservation plan to the District and promote implementation of same as a condition to continued service.

< Water demand, use, and mitigation shall be address in every Environmental Impact Report.

< The District shall:

a) Cooperate with other local water purveyors, appropriate state and other responsible agencies in facilitating a continuous program to increase consumer awareness about the need for and benefits of water conservation.

b) Encourage large water users to implement water recycling and reuse processes.

c) Make water conservation as reliable a method of reducing water demands as water supply projects are in meeting such demands.

2404. <u>STAGE I - NORMAL CONDITION</u>

Normal supply and distribution capacity is available. All policies shown in Section 2403 and the following water conservation measures shall apply.

1. Recommendations for use of water.

a) Limit all landscape irrigation to between the hours of 8:00 p.m. and 6:00 a.m. Hand watering should be done between 6:00 p.m. and 8:00 a.m. Drip irrigation and hand watering while gardening is exempt from this recommendation. Water being used during repair or maintenance of watering system is exempt from this section.

b) Water conservation should be practiced within the home or business.

c) All restaurants and food establishments are requested not to serve water to their customers unless specifically requested by the customer.

2. The following uses of water are hereafter considered non-essential to the public health, safety and welfare and, if allowed, would constitute the wasting of water and is hereby prohibited, pursuant to Water Code Section 350 et seq., Water Code Section 71640 et. Seq. and the common law:

a) There shall be no application of water to sidewalks, walkways, driveways, parking areas, patios, porches, verandas, tennis courts, or other paved, concrete, or other hard surface areas, except that flammable or other similarly dangerous or unhealthy substances may be washed from said areas by direct hose flushing for the benefit of public health or safety.

b) No water shall be used to clean, fill, operate, or maintain levels in decorative fountains unless such water is part of a recirculating system.

c) No person shall permit water to leak from any facility, improvement or plumbing fixture on his/her/its premises; said leak shall be repaired in a timely manner.

d) Washing of automobiles, trucks, trailers, boats, airplanes, and other types of mobile equipment are prohibited unless done with a hand-held bucket or hand-held hose equipped with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use. This section does not apply to the washing of the above-listed vehicles or mobile equipment when conducted at a commercial car wash utilizing recirculating systems.

1. Such washings are exempted from these regulations when the health, safety, and welfare of the public is contingent upon frequent vehicle cleaning such as garbage trucks and vehicles used to transport food and perishables.

e) Use of water for outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures is prohibited .

f) The use of sprinklers for any type of irrigation during high winds, which divert a significant amount of water from the intended landscaping, is prohibited.

g) The irrigation of potable water of ornamental turf on public street medians is prohibited. The term “median” shall mean the strip of land between street lanes.

h) The irrigation with potable water of landscape outside of newly constructed homes and buildings shall be consistent with regulations or other requirements establishments by the California Buildings Standards Commission, as those regulations may be modified from time to time.

2405. <u>STAGE II - WATER ALERT</u>

The District may not be able to meet all water demands of all customers, unless the following water conservation measures are applied:

a) All policies and prohibitions listed in Sections 2403 and 2404.

b) All customers are asked for a minimum twenty percent (20%) reduction of their water consumption over the base year consumption, unless otherwise stated.

c) Operators of hotels and motels must provide guests with the option of choosing not to have towels and linens laundered daily. The hotels and motels shall prominently display notice of this option in each guestroom using clear and easily understood language.

d) All eating establishments, including, but not limited to, restaurants, hotels, cafes, cafeterias, bars or other public places where food or drink are served and/or purchased are prohibited from serving water to their customers except when specifically requested by the customer.

e) District will screen all new applications for water service installations and will limit water use before occupancy to that essential use for construction and testing of landscape plumbing. Limited landscaping for new development shall be allowed as approved by the District.

f) Limit all landscape irrigation to four (4) days per week for no more than ten (10) minutes per station per day. This provision does not apply to any landscape that has water-efficient devices that are operated properly. Water-efficient devices are drip irrigation systems and operational weather-based irrigation controllers. The term "week" is defined as Sunday through Saturday.

g) Repair all leaks within seventy-two (72) hours of notification by the District unless other arrangements are made with the general manager of the District ("General Manager").

h) Water use for compaction, dust control, and other types of construction shall be by permit only and will be limited to conditions of the permit or may be prohibited as determined by the General Manager or his/her designee.

i) Irrigating landscaping, including, but not limited to, turf and ornamental landscapes during and within forty-eight (48) hours following measurable precipitation is prohibited.

2406. <u>STAGE III A - WATER WARNING</u>

District is not able to meet all water demands of all customers; therefore, the following water conservation measures shall apply.

a) All policies and prohibitions listed in Sections 2403, 2404 and 2405.

b) All customers are required to reduce potable water consumption by a minimum of twenty-five (25%) reduction in their water consumption over the base year consumption.

c) Washing of automobiles, trucks, trailers, boats, airplanes, and other types of mobile equipment are prohibited. Washing of the above-listed vehicles or mobile equipment shall be allowed only at a commercial car wash where recirculating water is being utilized.

1. Such washings are exempt from these regulations when the health, safety, and welfare of the public is contingent upon frequent vehicle cleaning such as garbage trucks and vehicles used to transport food and perishables.

d) New water services shall be installed but water shall be used before occupancy for essential construction only and for testing of landscape irrigation systems. The installation of new landscaping for all new development/projects must be approved by the District.

e) Limit all landscape irrigation to three (3) days per week for no more than ten (10) minutes per station per day. Drip systems that are operated efficiently are exempt from these regulations.

f) Repair all leaks within forty-eight (48) hours of notification by the District unless other arrangements are made with the General Manager.

g) All agricultural water users shall irrigate only at times approved by the District.

h) Swimming pools, ornamental pools, fountains, water displays, hot tubs, spas and artificial lakes shall not be filled or refilled after being drained.

i) Water used for compaction, dust control, and other types of construction shall be by permit only and will be limited to conditions of the permit or may be prohibited as determined by the General Manager, or his/her designee.

2407. <u>STAGE III B- WATER WARNING</u>

District is not able to meet all water demands of all customers; therefore, the following water conservation measures shall apply.

a) All policies and prohibitions listed in Sections 2403, 2404, 2405 and 2406 (except 2406 (e)).

b) Limit all landscape irrigation to two (2) days per week for no more than ten (10) minutes per station per day.

2408. STAGE III C- WATER WARNING

District is not able to meet all water demands of all customers; therefore, the following water conservation measures shall apply.

a) All policies and prohibitions listed in Sections 2403, 2404, 2405 and 2406 (except 2406 (e)).

b) Limit all landscape irrigation to one (1) day per week for no more than ten (10) minutes per station per day.

2409. STAGE IV - WATER EMERGENCY

District is experiencing a major failure of supply or distribution; therefore, the following water conservation measures shall apply:

a) All policies and prohibitions shown in Sections 2403, 2404, 2405 and 2406.

b) All customers are required to reduce potable water consumption by a minimum of thirty percent (30%) reduction in their water consumption over the base year consumption.

c) No water shall be used for construction purposes. All construction meters shall be locked off or removed.

d) Commercial nurseries shall water only between the hours of 11:00 p.m. and 6:00 a.m. and only with hand-held devices or with drip irrigation systems.

e) There shall be no watering of any lawn or landscaped area.

f) The use of water shall be limited to essential household, commercial, manufacturing, or processing uses only, except where other uses may be allowed by permit.

g) All agricultural water users shall irrigate only at times approved by the District.

2410. DETERMINATION AND DECLARATION OF WATER CONDITIONS

The General Manager, or his/her designee, shall access all available water supply data and shall make a report of his/her findings to the Board at the next Regular meeting or at a Special meeting called for that purpose. The Board may at that time determine and declare which of the four (4) previously discussed conditions the District's water supply is in and the extent of water conservation required to prudently plan for and supply water to the District's customers.

Thereafter, the Board may order that the appropriate stage of water conservation be implemented or terminated in accordance with the applicable provision of this Ordinance. The declaration of any stage shall be made by public announcement and notice shall be published once in a local

newspaper of general circulation. The stage designated shall become effective immediately upon announcement.

2411. DURATION OF DECLARATION

The declaration of any stage of water supply conditions shall remain in effect until such time as another stage is declared.

2412. AUTHORITY - MISDEMEANOR

This Article is adopted pursuant to Sections 375 and 376 of the California Water Code. Any second or subsequent violation of this policy after notice as specified in Section 2411 1(a) is a misdemeanor. (California Water Code Section 377).

2413. ENFORCEMENT

1. **Violations**. In addition to the remedy of criminal prosecution available to the District as described above, violation of this Ordinance may result in the imposition of surcharges and restriction and/or termination of water service as set forth below:

a) First Violation – Notice of Non-Compliance – a written warning accompanied by a copy of this Ordinance, delivered by U.S. Mail and/or hung on customer's door.

b) Second Violation – Warning of Penalties – a written warning notice of future imposition of penalties that could be placed on the customer's water bill.

c) Third Violation (within one (1) year) - a surcharge of $100.00.

d) Fourth Violation (within one (1) year of the first violation) – a surcharge of $300.00, and installation of flow restricting device in the meter for a minimum of ninety-six (96) hours. Said restricted flow shall meet minimum County Health Department's standards, if any have been established. If said ninety-six (96) hour period ends on a weekend or holiday, full service will be restored during the next business day.

e) Fifth Violation (within one (1) year of the first violation) – a surcharge of $500.00, and termination of service for such period as the Board determines to be appropriate under the circumstances, following a hearing regarding said issue. Written notice of the hearing shall be mailed to the customer at least ten (10) days before the hearing.

2. **Surcharges, Additional Charges**. Any surcharge hereunder shall be in addition to the basic water rates and other charges of the District for the account and shall appear on and be payable with the billing statement for the period during which the violation occurred; non-payment shall be subject to the same remedies available to the District as for non-payment of basic water rates.

In addition to any surcharge, a customer violating this Ordinance shall be responsible for payment of the District's charges for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service per the District's Schedule of Charges then in effect. Such charges shall be paid prior to the removal of the flow restrictor or reconnection of service, whichever the case may be.

3. **Non-liability for Damage**. The customer or resident who violates this Ordinance thereby assumes responsibility for injury to the customer and/or other residents/occupants receiving service, including emotional distress and/or damage to the customer's private water system and/or to other real or personal property owned by the customer or by a third party resulting from the installation and operation of a flow restricting device or from termination of service; said customer shall thereby be deemed to have: (a) waived any claim for injury or for damage to the customer's property which the customer may otherwise have against the District; and (b) agreed to indemnify, defend, and hold the District harmless from claims by third parties for injury or property damage arising or claimed to arise out of the District's installation and/or operation of a flow restricting device or termination of water service.

4. **Exemptions**. No exemption shall be granted to any person for any reason in the absence of a showing by said person that he/she/it has achieved the maximum practical reduction in water consumption in his/her residential, commercial, industrial, or governmental water consumption as the case may be.

The General Manager, or his/her designee, may grant exemptions ("exceptions" to this Ordinance) for uses of water otherwise prohibited by the regulations. Water customers who feel that they need an adjustment in the prohibitions as they relate to him/her will fill out a simple application form for an exemption stating the justification and circumstances. If the exemption is not granted, customer may appeal in writing as stated in Section 2414.1.

a) Inconvenience or the potential for damage to landscaping shall not be considered for exemption from any section of this Ordinance.

2414. APPEALS

1. **Procedures.** The General Manager, or his/her designated enforcement officer, shall determine when violations have occurred and shall issue to the customer a notice of violation ("Notice of Violation") by mailing same and/or hanging same on the customer's door at least ten (10) days before taking enforcement action. Said notice shall describe the action to be taken (notice of first violation shall simply be accompanied by a copy of this Ordinance) and shall be mailed or delivered at least ten (10) days before the proposed action is scheduled to be taken.

A customer may appeal the Notice of Violation by filing a written notice of appeal with the District no later than the close of business on the day before the date scheduled for enforcement action. Any Notice of Violation not timely appealed shall be final. Upon receipt of a timely appeal, a hearing on the appeal by the Board shall be scheduled at the Board's next Regular meeting or at a Special meeting scheduled for that hearing; in either, the hearing shall be at least

ten (10) days following receipt of the appeal, and the District shall mail written notice of the hearing to the customer at least ten (10) days before the date of said hearing.

2. **Interim Measures**. Pending receipt of a written appeal or pending a hearing pursuant to an appeal, the General Manager or the enforcement officer, if one has been designated, may take appropriate steps to prevent the unauthorized use of water as appropriate to the nature and extent of the violation and the current declared water condition.

2415. IMPLEMENTATION BY GENERAL MANAGER

The General Manager or designated representative is hereby authorized and directed to implement the provisions of this Ordinance. Guidelines regarding implementation procedures may be approved and/or modified from time to time by resolution by the Board.

2416. CEQA EXEMPTION

The adoption of this Ordinance, and the actions taken hereunder, are exempt from the provisions of the California Environmental Quality Act of 1970 in that they constitute a project undertaken as immediate action necessary to prevent or mitigate an emergency pursuant to Section 15071 of the State EIR Guidelines.

2417. DURATION OF ORDINANCE

This Ordinance shall remain in effect until the Board finds that the threatened emergency and threatened water shortage no longer exists. The provisions of this Ordinance shall prevail and control in the event of any inconsistency with any other rules and regulations of the District.

2418. SEVERABILITY

If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of this Ordinance. The Board hereby declares that it would have passed this Ordinance and each section, subsection, sentence, clause, or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases may be unconstitutional or invalid.

2419. EFFECTIVE DATE, PUBLISHING, AND POSTING

This Ordinance shall be effective immediately upon adoption. Within ten (10) days of adoption, a copy of this Ordinance shall be published one time in a local newspaper and posted in the lobby of the District Office.

ADOPTED, SIGNED AND APPROVED THIS 6th DAY OF AUGUST, 2015.

Betty Gosney, President of
the Board of Directors

ATTEST:

Peggy Asche, Secretary of the Board of
Directors



12770 Second Street, Yucaipa, California 92399

Water Shortage Contingency Plan

Supplement to the Yucaipa Valley Water District
2010 Urban Water Management Plan and the
2010 Regional Urban Water Management Plan

Adopted on June 15, 2011

Section 1 - Introduction

Water conservation is more than just restricting water use. Water conservation is the efficient use of water through conservation measures and increased efficiency. Implementing water conservation allows water utilities to avoid the cost of building additional drinking water facilities and reasonably expands the use of water resources. Water conservation is one of the last options available for communities to continue the long tradition in America of cheap, available water.

Inexpensive and readily available water supplies are often taken for granted while in many parts of the world this luxury is unique.

> *Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster (California Water Code Section 10632(c))*

The objective of Water Shortage Contingency Planning is to establish actions and procedures for managing water supply and demands during water shortages. The plan would help the District maintain essential public health and safety and minimize adverse impacts on economic activity, environmental resources and the region's lifestyle.

This plan complements the District's Emergency Response Plan. That plan is an emergency plan that defines decision-making authority in emergencies and creates specific emergency action plans for a number of systems, security, and management procedures.

As part of the Emergency Response Plan, the District would provide a unified incident command center as a disaster response command team at the Administration Building. These team leaders will determine policies and strategies for handling major disasters. Individual departments, working on a common incident, will coordinate their field efforts through the incident command structure.

While water supply disruptions can occur for a variety of reasons, a weather related water shortage, or drought, is one category of particular importance to the Yucaipa Valley Water District for reasons described below. Droughts are naturally occurring but unpredictable weather events of varying frequency, duration and severity. In the Yucaipa Valley, historical data indicates a high probability of short term and/or multi-year drought conditions.

This region is generally faced with a relatively dry summer period with very little rainfall occurring during the summer months. Most of the annual 16 inches of precipitation occurs during the fall and winter months from November to April, with most of the rainfall occurring in February. Since the Yucaipa Valley Water District is typically reliant on local surface water and groundwater, the amount of precipitation received in the Yucaipa Valley is extremely important to recharge our underground water basins. Certain weather events that can affect this cycle may manifest in one or more of the following ways:

- Less than normal winter precipitation and snowpack, this would limit the quantity of water available at the Oak Glen Surface Water Filtration Facility and ultimately reduce the amount of groundwater recharge.
- Unusually warm spring weather bringing with it early melting of the snowpack, resulting in early drawdown of the mountain resources.

- Unusually hot and dry summer weather, which can significantly increase peak season demands.
- A delayed return of the fall rains, or a dry winter, which can delay the fall percolation refill cycle (which replenishes the underground storage reservoirs after the peak season).

Yucaipa Valley Water District's strategy for dealing with the hydrologic uncertainty associated with drought management and related emergency issues involve several components:

- **Information** - To deal with hydrologic uncertainty in real-time and in longer term planning horizons, the District's management team uses a number of available informational and data gathering sources. One of the most valuable resources used by the District is the California Department of Water Resources Data Exchange Center. This center provides real time data at the California Department of Forestry Fire Station located on Highway 38 as well as other important statewide tools.

- **Forecasting** - Through the National Oceanic and Atmospheric Administration (NOAA), the District regularly monitors daily weather forecasts, mid-range weather forecasts, 30- and 90-day and multi-season climate outlooks. The Internet has greatly improved access to these sources of information. For example, NOAA's El Niño theme page on the Internet provides a wealth of timely information on current and forecasted El Niño and La Niña conditions with enough lead time for the District to prepare for such events.

- **Communication** - The District's management team works closely with members of other local, state, and federal agencies including the City of Yucaipa, City of Calimesa, County of San Bernardino, and the County of Riverside. The local municipalities meet once a month to discuss several issues related to the Yucaipa Valley, including hydrologic conditions, facility and system operations, and other subjects as may be beneficial in managing our water supplies.

- **Dynamic operating rules** - Operational flexibility is key, with operating plans changing as conditions and forecasts change. Dynamic groundwater pumping and reservoir storage settings are continuously monitored and modified to best fit the daily temperature forecasts. All of the tools, information sources and communications outlined above, are needed for coordinating and decision making related to real-time operations.

Section 2 - Principles of a Water Shortage Contingency Plan

The Yucaipa Valley Water District's Water Shortage Contingency Plan, is based on the following principles:

- Given clear, timely and specific information on supply conditions and the necessary actions to forestall worsening conditions, customers prefer the opportunity to meet targeted demand reduction levels through voluntary compliance measures. The decision to move to mandatory restrictions is more acceptable if the voluntary approach has been tried first but has not resulted in enough demand reduction to ensure public health and safety through the projected duration of the shortage.

- Each drought or other shortage situation has enough unique characteristics that a plan cannot specifically define all the scenarios and specific supply and demand management

actions. The usefulness of a Water Shortage Contingency Plan lies in planning the range of supply and demand management actions in advance of the situation, and in defining the communication mechanisms by which decisions will be made during the event.

- Given the effective long-term conservation program operated by the District, it is important to distinguish between the short term curtailment measures necessitated by a water supply disruption, and the conservation measures the District promotes to its customers. Water conservation generally focuses on improved efficiencies, whereas curtailment measures can involve short-term actions that may impact quality of life.

- It is essential to closely monitor water quality during a supply disruption and particularly during a warm weather drought. Water quality issues must be considered when supply management decisions are made.

Section 3 - Alternative Water Supplies

Depending on the nature and timing of a potential water shortage, alternative water supplies may be useful to supplement existing supplies.

- **Interties** - Since water supply disruptions may not affect all water suppliers to the same extent, it is sometimes feasible for the District to obtain water from other providers through interties, where they exist.

- **Recycled Water** – Yucaipa Valley Water District recognizes the value of recycled water as a means to conserve and extend the useful life of the potable water supply. Recycled water is the use of highly treated water for irrigation, and construction purposes, etc. in order to reduce demand for potable water and lessen the impact of shortages on the community. It is important to note, that as recycled water becomes more widely available through the District's recycled water facilities, the District will rely more heavily on it as a fundamental long-term source of supply (even in non-drought periods).

Section 4 - Phased Curtailment Plan

The Water Shortage Contingency Plan provides four stages of response based of increasing severity, as progressively more serious conditions warrant. This type of response would be appropriate to apply to a summer drought or other water service disruption. The four stages include a variety of communications, internal operations, and supply and demand management strategies as appropriate, and are characterized as follows:

- **Advisory Stage** -The public is informed as early as meaningful data are available that a possible shortage may occur.

- **Voluntary Stage** - If supply conditions worsen, the plan moves to the Voluntary Stage, which relies on voluntary cooperation and support of customers to meet target consumption goals. During this stage, specific voluntary actions are suggested for both residential and commercial customers.

- **Mandatory Stage** - If the Voluntary Stage does not result in the reduction needed, the Mandatory Stage prohibits or limits certain actions. This stage would be accompanied by an enforcement plan, which could include fines for repeated violation.

- **Emergency Curtailment** - This addresses the most severe need for demand reduction and could include a combination of mandatory measures and rate surcharges. This could be used as the last stage of a progressive situation, such as a drought of increasing severity, or to address an immediate crisis, such as a facility failure.

Recommendations about implementing the Water Shortage Contingency Plan would be made to the General Manager, based upon recommendations by District staff. The General Manager would then inform the members of the Board of actions taken or approval to implement specific strategies depending upon the severity of the situation. Prior to making a recommendation, the District staff would consider the following factors in making its recommendations:

- Total supply availability, including groundwater, interties, and other available water supplies;
- The rate of decline in total reservoir storage compared with the normal operating rule curve;
- Short and long term weather forecasts by the NOAA National Weather Service;
- Computer modeling of weather and demand assumption data;
- The trends and forecasts of the system's daily water demands;
- The estimated margin of safety provided by the demand reduction, compared with the level of risk assumed if no action is taken;
- The value of lost water sales revenue compared with the increased margin of reliability;
- The length of time between stage changes (abrupt starts and stops are to be avoided), and required time lags to shift administrative gears and institute program (printing, purchasing, etc.);
- Current events; and
- Customer response.

ADVISORY STAGE

Objectives

- To prepare the cities, school district, developers and water users for potential water shortage thereby allowing all parties adequate planning and coordination time.
- To undertake supply management actions that forestalls or minimizes the need later for more stringent demand or supply management actions.

Triggers

- As presented earlier, there are a variety of weather and other conditions that may cause concern about water availability and a potential water shortage. The most fundamental weather condition that would trigger an "Advisory" would be when the winter season rainfall total is significantly less than the average annual rainfall of 18 inches per year for Yucaipa (as measured at the Mill Creek CDF Fire Station).
- The Advisory would be withdrawn when projected water supplies such as State Water Project water and/or recycled water are in sufficient supply to provide normal water supply conditions to the District’s customers.

Public Message

- "The potential exists for lower than normal supply; conditions may return to normal or, later on, we may need to reduce consumption. We'll keep you informed."

Advisory Stage Goal

- Voluntary conservation measures resulting in a 5% - 10% reduction in water use, which can generally be achieved by reducing residential landscaping, and irrigation use.

Advisory Stage Action Plan - Suggested Actions - The suggested actions will be modified accordingly based on regional and statewide activities, actions and press coverage.

- Brief elected officials.
- District staff to issue a water conservation press release/newsletter during the summer months as a reminder to customers. See the sample press release as provided in Attachment "A".
- District adds text to monthly billing to remind customers of water conservation practices. An example would be:
- "During the summer months, please remember not to water between the hours of 10:00am and 8:00 pm. Thank you for conserving".
- District staff to regulate construction meter activity. This may include restricting quantity of water used and the issuance of new construction meters.
- District staff to monitor and record potable water irrigation practices at golf courses, parks and schools to effectively regulate the use of limited potable supplies.
- District staff to encourage the use of recycled water as a means to remain drought tolerant and promote continuous water conservation measures.
- Weekly planning meetings to include updates on water supply issues and alternatives to prepare for the next stage of the shortage contingency plan.
- Intensify ongoing media education effort about the water system, particularly relationship of weather patterns to supply and demand; provide up to date data and implications for water use, if known.

Yucaipa Valley Water District Internal Operations for Advisory Stage - The suggested actions may be modified accordingly based on the specific situation.

- Prepare to establish purveyor "hotline", a frequently updated recording providing latest information and supply and demand data.
- Consult with other major customer groups, e.g., parks departments, landscape industry, forming a committee if needed, to assist the shortage advisory group to define message and provide feedback on utility actions.
- Initiate status report to entities with special interests, e.g., large water users especially landscape and nursery industry, parks, major water using industries.
- Prepare public information materials explaining the Water Contingency Shortage Plan stages and range of actions; prepare "Questions and Answers" for all customer groups, including those who may be planning new landscaping projects.
- Intensify coordination with other regional water suppliers to learn what conditions they are projecting for their systems.
- Evaluate ability, resources, and plans to move into Voluntary stage; as appropriate, begin preparatory measures.
- Intensify data collection actions (storage reservoirs, wells and power supply) and monitoring weather forecasts.
- Intensify the District's computer modeling runs of projected supply, storage and demand scenarios.
- Intensify supply side management techniques to optimize existing sources.

- Assess current water main flushing and reservoir cleaning activities to determine whether they should be accelerated to be completed prior to the peak season or reduced to conserve supply.
- Assess water quality in reservoirs and distribution system to target for correction areas that may be predicted to experience problems.
- Initiate planning and preparation for Voluntary Stage actions, including an assessment of potential staffing impacts, training needs, and communications strategies including use of web-based information

VOLUNTARY STAGE

Objectives

- To maintain or reduce demand to meet target consumption levels by customer voluntary actions.
- To forestall or minimize need later for more stringent demand or supply management actions
- To minimize the disruption to customers' lives and businesses while meeting target consumption goals
- To maintain the highest water quality standards throughout the shortage.

Triggers

- The "Voluntary Stage" is implemented when one or both of the following factors applies:
    - Supply conditions identified in the Advisory Stage have not improved.
    - Demand levels indicate the need for a more systematic response to manage the situation
- Heavy groundwater pumping coupled with higher summer temperatures means that there might be an increased likelihood that water quality problems may become an issue. Consideration will be given to potential water quality issues in defining the supply and demand management strategies.

Public Message

"We are relying on support and cooperation of all water users to stretch the available water supply. Demand needs to be reduced by 10-15%. Customers are responsible for determining how they will meet that goal. Water waste is not allowed. If everyone cooperates, we may avoid imposing more stringent restrictions."

Voluntary Stage Goal

At this stage, the goal would be to achieve a 10% - 15% reduction in water use. Customers can generally achieve this goal through constant water conservation practices.

Voluntary Stage Action Plan - Suggested Actions - The suggested actions will be modified accordingly based on regional and statewide activities, actions and press coverage.

The District staff shall meet frequently to re-evaluate the situation based on current and projected supply conditions and the season, and determine the appropriate actions and strategies. The staff will determine target consumption goals to be achieved on a voluntary basis, which may be revised as necessary. (See attachment B) Based on the consumption goal, some or all of the following actions will be taken; those actions that are asterisked (*) will be considered initially for

implementation if demand reductions more than 10 to 15 percent below normal are necessitated, or later if voluntary measures implemented fail to deliver targeted savings.

- Establish systematic communications with elected officials at the committee and Board level to communicate the nature and scope of voluntary measures and strategy
- District staff to evaluate whether targeted consumption levels and supply conditions warrant a rate surcharge to reinforce voluntary actions and/or to recover revenue losses*; the General Manager makes recommendation to Board members
- Prepare appropriate legislation regarding emergency surcharges, if required
- Consult with customer groups throughout the shortage to help develop public information messages and materials and to obtain feedback on utility actions
- Initiate major public information, media and advertising campaign:
    - In daily newspapers, publish and promote consumption graph that displays the goal and previous 24 hour consumption;
    - Promote consumption goals for typical households, and a percentage reduction goal for commercial customers (Attachment C contains a list of recommended actions for customers to take to reduce consumption)
    - Develop and implement a marketing plan, including paid advertising, to keep customers informed about supply and demand conditions; reinforces desired customer actions; recommends customer actions to reduce demand sufficiently; and, depending on conditions, reminds customers that if goals are not achieved, restrictions may be necessary
- Identify what potential next steps will be to reduce demand including timing, what type of restrictions and/or surcharges will be imposed.
- Establish routine timing for press releases (e.g., every Monday morning) that provide current status and outlook; present information in standardized format that becomes familiar to media and public.
- Include water quality information in public information so that if flushing is necessary, the public understands that it is essential for water quality maintenance.
- Publicize the water supply conditions web page, which is updated regularly. Ensure the information provided covers the needs of all key interests: the public, news media and purveyors.
- Meet with landscape industry representatives to inform them of current and projected conditions; develop partnership programs and informational materials on the shortage, consumption goals, etc. for distribution by industry and utilities.
- Establish and promote "hotlines" for customers to obtain additional conservation information.
- Contact largest customers to request percentage reduction. Contact City and other public agencies to inform them of conditions and request their cooperation.
- Prepare list of commercial car wash facilities that recycle water
- Establish regular communication mechanism to keep Department employees, especially utility account representatives and water service consultants, up to date on goals, conditions, and actions
- Print generic postcards to acknowledge receipt of customer correspondence regarding the shortage and to inform customer that specific response is being prepared
- Initiate remaining planning and preparation for Mandatory Stage

Yucaipa Valley Water District Internal Operations for Voluntary Stage - The suggested actions may be modified accordingly based on the specific situation.

- Continue actions listed in the Advisory Stage.
- Eliminate all operating system water uses determined not to be essential to maintain water quality such as pipeline flushing, reservoir overflows; complete cleaning of any reservoirs known to be vulnerable to warm weather taste and odor concerns.
- Increase water quality monitoring actions.
- Implement staffing reassignments as needed, and plan staffing changes, which may be needed for the Mandatory Stage, including staff to enforce mandatory restrictions.

Supply and Demand Management Actions

- Issue a request that non-recirculating fountains be turned off*
- Restrict construction meters to only essential purposes*
- Activate any existing interties to increase supply availability*
- Request that Fire Department limit training exercises that use water
- Request that City agencies eliminate washing fleet vehicles unless recycling car washes are used
- Request that hosing sidewalks, driveways, parking lots, etc. be limited to situations that require it for public health and safety
- Have YVWD field personnel "tag" observed obvious water waste such as hoses without shutoff nozzles, gutter flooding, etc. with notice that informs customer about the supply conditions and need to conserve
- Evaluate ability to accelerate or enhance or expand long term conservation programs; implement as appropriate

MANDATORY STAGE

Objectives

- To achieve targeted consumption reduction goals by restricting defined water uses.
- To ensure that adequate water supply will be available during the duration of the situation to protect public health and safety
- To minimize the disruption to customers' lives and businesses while meeting target consumption goals.
- To maintain the highest water quality standards throughout the shortage.
- To promote equity amongst customers by establishing clear restrictions that affect all customers

Triggers

The General Manager, with approval from the Board of Directors, would approve progression to this stage if goals established in the Advisory and Voluntary Stage have not been met, and additional action is needed. The specific restrictions imposed during the mandatory stage would be determined based on the season of the year, targeted demand levels, and other considerations previously mentioned. Variations of the specific restrictions may be applied based on water supply conditions. For example, lawn watering restrictions may simply consist of time of day restrictions; or, if conditions warrant, lawn watering could be restricted to certain times of day and allowed only once a week.

Public Message

"It is necessary to impose mandatory restrictions to reduce demand based on the current water shortage. We are continuing to rely on the support and cooperation of the public to comply with these restrictions but need the certainty and predictability of restricting certain water uses in order to ensure that throughout the duration of this shortage an adequate supply of water is maintained for public health and safety."

Mandatory Stage Goal

Mandatory conservation measures resulting in a 10% - 15% reduction in water use.

Mandatory Stage Action Plan - Suggested Actions - The suggested actions will be modified accordingly based on regional and statewide activities, actions and press coverage.

- The District staff will make recommendations regarding the nature, scope and timing of restrictions to the members of the Water Conservation Committee. The District staff will need to determine that the water supply and demand management strategies will not result in unacceptable water quality degradation.
- The General Manager recommends to the Board of Directors to implement the Mandatory Stage conservation measures and other appropriate actions.
- The Board adopts a resolution on mandatory restrictions and, if needed and not already in place, emergency surcharges.
- The public is informed about the nature and scope of the mandatory restrictions through a press conference, paid advertising and other means, including direct mail.
- The enforcement mechanisms, rate surcharges, target consumption goals, projections for how long restrictions will be in place and the reasons for imposing restrictions will also be identified, as will the possible consequences if goals are not met.
- Any exemptions from restrictions will be clearly identified.
- In communicating mandatory restrictions to the public, a clear distinction will be made between lawn/turf watering and watering gardens and ornamental plantings. The type and amount of watering allowed will be clearly defined.
- A "Customer Hotline" will be set up to report violations of restrictions.
- Customers who irrigate with private wells will be urged to install signs to let the public know that private well water is being used.
- Communication actions from the Advisory and Voluntary stages will be continued and enhanced.
- Plans will be made to move into the fourth stage - Emergency Curtailment - and to begin preparatory measures as appropriate

Yucaipa Valley Water District Internal Operations for Mandatory Stage - The suggested actions may be modified accordingly based on the specific situation.

- Continue appropriate actions from previous stages
- Finalize and implement procedures for exemptions from restrictions and/or emergency surcharges.
- Finalize and implement enforcement procedures for restrictions including highly visible "Water Watchers".
- Increase water quality monitoring actions at storage reservoirs.

Supply and Demand Management Actions

Overall supply conditions will be considered at regular meetings by District staff and the members of the water conservation committee in evaluating which restrictions to impose.

POSSIBLE WATER SHORTAGE RESTRICTIONS

Watering Restrictions

The following are several possible approaches to watering restrictions. The nature of the restrictions used will depend on the situation, and may change as severity of the situation changes.

- Prohibit all watering during the day, for example between 6:00 a.m. and 9:00 p.m.
- Limit all watering to a specific number of days per week or per month. This choice will depend on target consumption goals, the time of year and the extent to which watering is occurring, and how much demands have already decreased.

Other Restrictions

- Prohibit use of any ornamental fountain using drinking water for operation or make-up.
- Prohibit car washing except at commercial car wash facilities that recycle water.
- Rescind water construction meter hydrant permits.
- Prohibit washing of sidewalks, streets, decks or driveways, except as necessary for public health and safety.
- Limit pressure washing of buildings to situations that require it as part of scheduled building rehabilitation project (e.g., painting).
- Prohibit water waste including untended hoses without shut-off nozzles, obvious leaks and water running to waste such as gutter flooding and sprinklers/irrigation whose spray pattern unnecessarily and significantly hits paved areas

Exemptions from Water Use Restrictions

- **Lawn Watering Ban Exemption** - Newly installed lawns may be exempted from a ban if the procedures listed below are followed. Those wishing to use this exemption would need to contact the District office in advance of the exemption being granted, providing their name, address, phone number, size of lawn and type of watering system. This information would allow the District to quantify the amount of water used under this exemption and to spot check for compliance. The procedures relating to the exemption and the requirements of the exemption would be clearly outlined at the time of the ban. The following procedures are subject to change:
    - Each applicant would be mailed a packet stating the requirements.
    - Once the requirements are met, an authorization packet would be mailed to the customer including a sign to be posted indicating that the District's requirements are being complied with.
    - New lawns must be properly installed, meaning that two inches of organic soil amendment, such as composted yard waste or biosolids, is cultivated into the top six inches of existing soil, at a minimum.
    - New lawns must be watered according to guidelines to be provided in the packet mentioned above.
    - For purposes of this exemption, "new lawn" refers to a lawn newly installed during the current year only. Over seeded or otherwise renovated lawns would not be exempt.

- In the event that the shortage continues to worsen and the Emergency Curtailment Stage is invoked, this exemption would be revoked. It would also be revoked on a case-by-case

basis if the rules stated above are not followed, or in the case of a water system emergency. Monitoring and enforcement are at the discretion of the District. The existence of an exemption to a watering ban would be announced early in the response process, for example when the Advisory Stage is invoked.

- **Automatic Irrigation System Exemption** - Users of automatic irrigation systems may be exempt from certain mandatory watering restrictions if proper procedures are followed - but not from a total watering ban. This approach allows an alternate path to achieving savings due to the precision with which such systems can be operated, but is not intended to be a loophole to avoid the need to curtail use. For example, if only 30 minutes of lawn watering is allowed per week, automatic irrigation systems which meet the criteria would be allowed to water based on a certain percentage of evapotranspiration (ET), such as 50%, instead of the time-limit based restriction. [Note: ET is a factor calculated according to climatic data, which is commonly used for lawn watering in commercial applications; ET data would be made available on the District's web page and in alternate formats.] In the event of a total watering ban, these users would also be prohibited from watering (unless other safety-based criteria are met, as stipulated in the Water Shortage Contingency Plan).

- The procedures to be met include:
    - The area must be audited by an Irrigation Auditor as certified by the Irrigation Association (list from the IA to be available on request).
    - Irrigation efficiency of the system must be at least 62.5%, as defined by the Irrigation Association (includes both system distribution uniformity and management practices).
    - A baseline irrigation schedule based on historical ET must be provided to the system's owner/operator.
    - The owner/operator must evaluate actual ET on at least a weekly basis and change the irrigation schedule if warranted by the ET index.
    - The owner/operator must contact the utility to provide the name of the auditor, date of inspection and the efficiency rating, as well as the name, address and phone number of the contact person for the site being watered, prior to using the exemption
    - Time of day restrictions, such as watering prohibited between 6:00 am and 8:00 pm, would have to be met.
    - The system must have a functioning rain-shutoff device.
    - Watering limitations stipulated by the District would need to be followed. The limitations would be stated as a percent of ET, so that, for example, users who meet the above requirements would be able to water based on 50% of ET (the specific percent amount would be decided upon at the time the restriction is announced, depending on the supply outlook). The District's website (www.yvwd.dst.ca.us/conserve.htm) would be regularly updated to provide the information needed for those watering according to this exemption; the information would be available through other means as well.

- **Other Exemptions** - For purposes of dust control, water may be applied to construction areas or other areas needing to comply with air quality requirements. If recycled water is available, consider requiring or promoting that it be used for dust control, if feasible.

- Ball fields and play fields may be watered at the minimum rate necessary for dust control and safety purposes.
- The District will exempt customers with special medical needs such as home dialysis from any emergency surcharge provided individual customers notify the District of such a need

Water Supply Actions

- If not already implemented, activate interties and any other alternative sources of supply.

EMERGENCY CURTAILMENT STAGE

At this stage, the District recognizes that a critical water situation exists. Without additional significant curtailment actions, a shortage of water for public health and safety will be imminent. No prior emergency in the Yucaipa Valley Water District's history fits this description.

This stage is characterized by two basic approaches. First, increasingly stringent water use restrictions are established and enforced. Secondly, significant rate surcharges are used to encourage customer compliance. While a rate surcharge may be implemented in either the Voluntary or Mandatory stages, a surcharge is a key component to the success of this stage and previous surcharge may be increased if appropriate.

Emergency Curtailment Action Plan - Suggested Actions - The suggested actions will be modified accordingly based on regional and statewide activities, actions and press coverage.

- Continue all previous, applicable actions.
- Define the problem to the public as an emergency and institute formal procedures to declare an emergency.
- Inform customers of the rate surcharge and how it will affect them. Provide information on an appeal process.
- Coordinate with police and fire departments requesting their assistance in enforcing prohibition of water waste.
- Inform customers that taste and odor water quality problems may occur with system-wide reduced water consumption.
- Inform customers about possible pressure reductions and problems this may entail.
- Define and communicate exemptions for medical facilities and other public health situations.

Yucaipa Valley Water District Internal Operations for Emergency Curtailment - The suggested actions may be modified accordingly based on the specific situation.

- Continue and enhance "Water Watcher" patrols.
- Continue actions listed in prior stages.
- Curtail fire flow and pipeline testing unless it can be shown to be essential to protect the immediate public health and safety.
- Further enhance water quality monitoring actions

Supply and Demand Management Actions

- Rate surcharges would be implemented to encourage customer compliance with the restrictions, as follows:

- **Commercial Customers** - Commercial, multifamily and industrial users would be asked to reduce water use by a set percentage of their consumption during the same period in the previous year. Emergency rate surcharges would be established to provide an additional incentive to reduce water use. It is the District's intention to establish a multi-tiered structure. This "variable block approach" would allow for different surcharge rates based on the individual customer's consumption during the same period in the previous year. For example, if the District were to target desired reduction of 85% from the previous year's consumption in that period, any consumption between 0 and 85% would be billed at one rate and any consumption over 85% would be billed at another, much higher rate. In this way, the targeted reduction amount and resulting surcharges would be customized around each customer's water use patterns, while still resulting in a steep surcharge for consumption in excess of the target amount for each block.

    - A billing system modification would be needed to allow the District to accomplish this. If this has not been done by the time it may be needed, a simple across-the-board rate surcharge would be applied.

- **Residential Customers** - A multi-tiered, increasingly steep rate structure would be implemented for residential customers (includes single-family dwellings and duplexes). While there are differences in household size, there is more similarity in residential domestic water use than there is in commercial water use.

    - All lawn and turf irrigation would be prohibited
    - Make recycled water available for street cleaning, construction projects, landscape irrigation, dust control, etc.
    - Require that all firefighting agencies discontinue the use of water in training exercises until emergency is over.
    - Rescind all construction meter or fire hydrant permits.

Short-Term Emergency Curtailment Plan

Although many of the demand reduction measures employed would be similar to those used during a progressive, weather-related shortage, short-term emergencies are unique because of a lack of preparation time and the urgency of immediate, large-scale demand reductions. Each emergency scenario is different, but most of them require major curtailment actions by customers. Also, unlike a drought, some emergencies would be localized, requiring demand reduction for only a limited geographic area.

Strategies for dealing with emergencies have been developed based on lessons learned from previous water utility events, other utility experiences, and a sorting of measures based on specific criteria.

Throughout water shortage events, consistent conservation messages and information on appropriate demand reduction measures should be delivered to water users through the media and by direct contact. Although exact demand reduction goals may not always be met by water users, the water demands during short-term emergencies must be curtailed enough to be beneficial and avoid more serious water shortages.

There are several criteria by which to decide which demand management measures are appropriate to initially reduce demand during an emergency:

- **Timing:** can the measure(s) or action(s) deliver the necessary savings in the necessary timeframe, i.e., are immediate savings needed or can the system support a gradual reduction in demand;
- **Magnitude of savings:** will the measure produce enough savings to make a meaningful difference i.e., reduce demand to the level the impaired water system can handle;
- **Season:** does the action make any impact at the time of year that the emergency occurs, i.e., banning lawn watering will have little impact in the winter months;
- **Costs:** How severe are the cost implications of the measure to the customer, including local business and industry.

Supply and Demand Management during Emergencies

No single strategy can be created which will meet the needs of the District for all emergency scenarios. The criteria listed above create a framework for decision-making. Emergencies initially require quick and immediate response. Once an assessment is made as to how long it will take to restore the system, the immediate response strategy may change if it appears that the repair process will be lengthy.

The strategy for most emergencies can be narrowed to measures having the most immediate impact on water supply and consumption. All needed and available back up supplies would be activated during an emergency, including the use of interties and standby water production wells.

ORDINANCE NO. O-08-15

AN ORDINANCE OF THE CITY OF COLTON PRESCRIBING TEMPORARY WATER CONSERVATION RULES AND REGULATIONS AND AMENDING TITLE 13, BY ADDING SUBSECTION 13.28.080C

WHEREAS, California Constitution article X, section 2 and California Water Code section 100 provide that because of conditions prevailing in the state of California (the "State"), it is the declared policy of the State that the general welfare requires that the water resources of the State shall be put to beneficial use to the fullest extent of which they are capable, the waste, unreasonable use, or unreasonable method of use of water shall be prevented, and the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and the public welfare, and;

WHEREAS, pursuant to California Water Code section 106, it is the declared policy of the State that the use of water for domestic use is the highest use of water and that the next highest use is for irrigation, and;

WHEREAS, pursuant to California Water Code section 375, the City of Colton (the "City") is authorized to adopt and enforce a water conservation program to reduce the quantity of water used by persons within its jurisdiction for the purpose of conserving the water supplies of the City, and;

WHEREAS, on April 25, 2014, the Governor signed an Executive Order directing the SWRCB to adopt emergency regulations as it deems necessary pursuant to Water Code section 1058.5, to ensure that water suppliers in California implement drought response plans to limit outdoor irrigation and other wasteful water practices, and;

WHEREAS, on April 1, 2015, the Governor signed an Executive Order that, in part, directs the SWRCB to impose restrictions on water suppliers to achieve a statewide 25 percent reduction in potable urban usage through February, 2016; require commercial, industrial, and institutional users to implement water efficiency measures; prohibit irrigation with potable water or ornamental turf in public street medians; and prohibit irrigation with potable water outside newly constructed homes and buildings that is not delivered by drip or microspray, and;

WHEREAS, on May 5, 2015, the SWRCB formally adopted Emergency Regulations for Statewide Urban Water Conservation ("Emergency Regulations") to enact emergency regulations for water suppliers effective June 1, 2015, and expiring February 28, 2016, unless the SWRCB determines that it is no longer necessary due to changed conditions, or unless the SWRCB renews the regulations due to continued drought conditions as described in Water Code section 1058.5, and;

WHEREAS, because of the prevailing conditions in the State, the continued current statewide drought, and the declared policy of the State, the City hereby finds and determines that it is necessary and appropriate for the City to adopt, implement, and enforce temporary water conservation regulations to reduce the quantity of water used by consumers within the City to ensure that there is sufficient water for human consumption, sanitation, and fire protection, and;

WHEREAS, pursuant to California Water Code section 350 the City Council is authorized to declare a water shortage emergency to prevail within its jurisdiction when it finds and determines that the City will not be able to or cannot satisfy the ordinary demands and requirements of water consumers without depleting the water supply of the City to the extent that there would be insufficient water for human consumption, sanitation, and fire

protection, and as more fully set forth in this chapter, and;

WHEREAS, in the event the City determines that it is necessary to declare that a water shortage emergency exists, the City will be authorized pursuant to this chapter to implement certain drought response measures and a water conservation and regulatory program to regulate water consumption activities within the City and ensure that the water delivered in the City is put to beneficial use for the greatest public benefit, with particular regard to domestic use, including human consumption, sanitation, and fire protection, and that the waste, unreasonable use, or unreasonable method of use of water is prevented, and;

WHEREAS, the City is authorized to prescribe and define by ordinance restrictions, prohibitions, and exclusions for the use of water during a threatened or existing water shortage and adopt and enforce a water conservation and regulatory program to: (i) prohibit the wastage of City water or the use of City water during such period; (ii) prohibit use of water during such periods for specific uses which the City may from time to time find nonessential; and (iii) reduce and restrict the quantity of water used by those persons within the City for the purpose of conserving the water supplies of the City, and;

WHEREAS, the City hereby finds and determines that pursuant to the provisions of Title 13, Chapter 13.28 of the City of Colton Municipal Code, as hereby amended, the City shall: (i) implement water conservation and water shortage response measures; (i) regulate the water consumption activities of persons within the City for the purposes of conserving and protecting the City's water supplies, reducing the quantity of water consumed, and deterring and preventing the waste or unreasonable use or unreasonable method of use of valuable water resources; and (ii) establish and collect regulatory fees and impose fines and penalties as set forth herein to accomplish these purposes and recover the costs of the City's water conservation and regulatory program, and;

WHEREAS, the City Council hereby finds and determines that it is desirable to codify the rules and regulations governing its actions, and the actions of persons using and consuming water within the City, particularly during declared water shortages and water shortage emergencies, to protect the general welfare and the City's water supplies, and to reduce water consumption in accordance with the declared policies and laws of the State.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF COLTON, CALIFORNIA DOES HEREBY ORDAIN AS FOLLOWS:

Section 1. The City hereby finds and determines that the above recitals are true and correct and incorporated herein.

Section 2. Title 13 of the City of Colton Municipal Code is hereby amended by updating Subsection 13.28.030C, entitled "Stage III, Water Warning", to read as follows:

C. Stage III, Water Warning. Stage III applies during periods when the City will not be able to meet all of the water demands of its customers. The following mandatory conservation measures shall apply during Stage III:

1. All measures listed under Stage I (Section 13.28.080A) and Stage II (Section 13.28.080B).

2. Washing of automobiles, boats, trailers, aircraft, and other types of mobile equipment is prohibited. Washing of the above-listed vehicles or mobile equipment shall only be allowed at a commercial car wash utilizing recycling

systems. Provided, however, such washings are exempt from these regulations when the health, safety, and welfare of the public is contingent upon frequent vehicle cleaning, such as garbage trucks and vehicles used to transport food or perishables.

3. New water service connections may be permitted, but the use of potable water for any new service connection before occupancy of any premises shall be permitted only for essential construction and testing of landscape irrigation systems. The installation of new landscaping for any new development and/or project must be approved by the Department.

4. Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants by commercial nursery customers shall be permitted only on even numbered days between the hours of 11:00 p.m. and 6:00 a.m., and only with a hand-held hose equipped with a positive shutoff nozzle or with drip irrigation. Commercial nursery customers shall reduce their potable water consumption by 25% of the customer's prior year's consumption for the comparable billing period.

5. Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants by all golf course customers shall be permitted only on odd numbered days, between the hours of 11:00 p.m. and 6:00 a.m., unless the applicable irrigation system is equipped with an electronic moisture sensor control system, a weather based irrigation controller and/or drip irrigation system. Irrigation shall be allowed to run for no more than 15 minutes per station per occurrence. Golf course customers shall reduce their potable water consumption by 25% of their prior year's comparable billing period.

6. Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants at schools shall be permitted only on odd numbered days, between the hours of 11:00 p.m. and 6:00 a.m., unless the applicable irrigation system is equipped with an electronic moisture sensor control system, a weather based irrigation controller and/or drip irrigation system. Irrigation shall be allowed to run for no more than 15 minutes per station per occurrence. Water consumption at all school property shall be reduced by 25% of the customer's prior year's comparable billing period.

7. Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants at all publicly-owned property shall be permitted only on even numbered days, between the hours of 11:00 p.m. and 6:00 a.m., unless the applicable irrigation system is equipped with an electronic moisture sensor control system, a weather based irrigation controller and/or drip irrigation system. Irrigation shall be allowed to run for no more than 15 minutes per station per occurrence. Water consumption at all publicly-owned property shall be reduced by 25% of the customer's prior year's comparable billing period unless they are using reclaimed water.

8. Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants for all other customers shall only be permitted as follows:

   i. Customers with addresses ending in an even number shall be permitted to irrigate or water on Mondays, Wednesdays and Saturdays only, customers with addresses ending in an odd number shall water on Tuesdays, Thursdays and Saturdays only. Such restrictions shall not apply to any customer whose property is equipped with an electronic moisture sensor control system, a weather based irrigation controller and/or drip irrigation system.

   ii. All watering shall be permitted only between the hours of 8:00 p.m. and 6:00 a.m.

   iii. Irrigation shall be allowed to run for no more than 10 minutes per station per occurrence.

9. The application of potable water, by any customer type, to outdoor landscapes during and within 48 hours after measurable rainfall is prohibited, unless the property is equipped with an electronic moisture sensor control system and/or a weather based irrigation controller.

10. Water being used during repair or maintenance of a customer's watering system shall be exempt from this section.

10. Swimming pools, ornamental pools, fountain and artificial lakes shall not be filled or refilled after being drained, unless prior approval is obtained from the Department.

11. Water used for compaction, dust control, and other types of construction shall only be authorized by a permit issued by the Department and shall be limited to the conditions of the permit or may be prohibited as determined by the Director or his designee.

12. All agricultural customers shall irrigate or water only at times approved by the Department.

13. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guestroom using clear and easily understood language.

Section 3. This Ordinance shall be effective immediately upon its adoption. Introduced at a regular meeting of the City Council of the City of Colton, California, held on June 2, 2015;

Enacted at a regular meeting of the City Council of the City of Colton, California, held on June 16, 2015.

_____
Richard A. DeLaRosa, Mayor

ATTEST:

_____
Carolina R. Padilla, City Clerk

ORDINANCE NO. _O-09-14__

AN ORDINANCE OF THE CITY OF COLTON PRESCRIBING WATER CONSERVATION RULES AND REGULATIONS AND AMENDING TITLE 13, BY ADDING CHAPTER 13.28

WHEREAS, California Constitution article X, section 2 and California Water Code section 100 provide that because of conditions prevailing in the state of California (the "State"), it is the declared policy of the State that the general welfare requires that the water resources of the State shall be put to beneficial use to the fullest extent of which they are capable, the waste or unreasonable use of water shall be prevented, and the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and the public welfare; and

WHEREAS, pursuant to California Water Code section 106, it is the declared policy of the State that the use of water for domestic use is the highest use of water and that the next highest use is for irrigation; and

WHEREAS, pursuant to California Water Code section 375, the City of Colton (the "City") is authorized to adopt and enforce a water conservation program to reduce the quantity of water used by persons within its jurisdiction for the purpose of conserving the water supplies of the City; and

WHEREAS, on April 25, 2014, the Governor signed an Executive Order directing the State Water Resource Control Board (SWRCB) to adopt emergency regulations as it deems necessary pursuant to Water Code section 1058.5, to ensure that water suppliers in California implement drought response plans to limit outdoor irrigation and other wasteful water practices; and

WHEREAS, on July 15, 2014, the SWRCB formally adopted Emergency Regulations for Statewide Urban Water Conservation ("Emergency Regulations") to enact emergency regulations for water suppliers effective July 28, 2014, and expiring 270 days thereafter, unless the SWRCB determines that it is no longer necessary due to changed conditions, or unless the SWRCB renews the regulations due to continued drought conditions as described in Water Code section 1058.5; and

WHEREAS, the SWRCB Emergency Regulations prohibit certain types of water use; and

WHEREAS, the SWRCB Emergency Regulations urban water suppliers (as set forth in Water Code section 10617) to take action to either: (1) implement all requirements and actions of its water shortage contingency plan that imposes mandatory restrictions on outdoor irrigation of ornamental landscapes or turf with potable water; or (2) submit an alternate plan that includes allocation-based water rate structures that satisfy the requirements of chapter 3.4 (commencing with section 370) of division 1 of the Water Code; and

WHEREAS, because of the prevailing conditions in the State, the current statewide drought, and the declared policy of the State, the City hereby finds and determines that it is necessary and appropriate for the City to adopt, implement, and enforce a water conservation program to reduce the quantity of water used by consumers within the City to ensure that there is sufficient water for human consumption, sanitation, and fire protection; and

WHEREAS, pursuant to California Water Code section 350 the City Council is authorized to declare a water shortage emergency to prevail within its jurisdiction when it finds and determines that the City will not be able to or cannot satisfy the ordinary demands and requirements of water consumers without depleting the water supply of the City to the extent that there would be insufficient water for human consumption, sanitation, and fire protection, and as more fully set forth in this chapter; and

WHEREAS, in the event the City determines that it is necessary to declare that a water shortage emergency exists, the City will be authorized pursuant to this chapter to implement certain drought response measures and a water conservation and regulatory program to regulate water consumption activities within the City and ensure that the water delivered in the City is put to beneficial use for the greatest public benefit, with particular regard to domestic use, including human consumption, sanitation, and fire protection, and that the waste or unreasonable use of water is prevented; and

WHEREAS, the City is authorized to prescribe and define by ordinance restrictions, prohibitions, and exclusions for the use of water during a threatened or existing water shortage and adopt and enforce a water conservation and regulatory program to: (i) prohibit the wastage of City water or the use of City water during such period; (ii) prohibit use of water during such periods for specific uses which the City may from time to time find nonessential; and (iii) reduce and restrict the quantity of water used by those persons within the City for the purpose of conserving the water supplies of the City; and

WHEREAS, the City hereby finds and determines that pursuant to the provisions of Title 13, Chapter 13.28 of the City of Colton Municipal Code, as hereby amended, the City shall: (i) implement water conservation and water shortage response measures; (i) regulate the water consumption activities of persons within the City for the purposes of conserving and protecting the City's water supplies, reducing the quantity of water consumed, and deterring and preventing the waste or unreasonable use or unreasonable method of use of valuable water resources; and (ii) establish and collect regulatory fees and impose fines and penalties as set forth herein to accomplish these purposes and recover the costs of the City's water conservation and regulatory program; and

WHEREAS, the City Council hereby finds and determines that it is desirable to codify the rules and regulations governing its actions, and the actions of persons using and consuming water within the City, particularly during declared water shortages and water shortage emergencies, to protect the general welfare and the City's water supplies, and to reduce water consumption in accordance with the declared policies and laws of the State.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF COLTON, CALIFORNIA DOES HEREBY ORDAIN AS FOLLOWS:

Section 1. The City hereby finds and determines that the above recitals are true and correct and incorporated herein.

Section 2. Title 13 of the City of Colton Municipal Code is hereby amended by adding Chapter 13.28, entitled "Water Conservation Plan," to read as follows:

13.28.010 INTENT.

Pursuant to Article X, section 2 of the California Constitution, the City Council declares that the waters of the State are to be put to maximum beneficial use, that the waste or unreasonable use, or unreasonable method of use of water be prevented, and that the conservation of such water must occur to protect the people and property of the State. This chapter establishes the City of Colton Water Conservation Plan.

13.28.020 PURPOSE.

The purpose of this chapter is to adopt a water conservation plan that establishes water conservation measures that conserve City water supplies for the greatest public benefit and reduce the quantity of water used by the City's water customers. The Water Conservation Plan is hereby established to extend and preserve the available water resources required for the basic needs of human consumption, sanitation and fire protection.

13.28.030 DEFINITIONS.

For the purposes of this chapter 13.28, the following words, terms, and phrases shall have the following meanings:

"City" means the City of Colton.

"City Manager" means the City Manager of the city or his authorized designee.

"Customer" means a person who, according to the city's records, receives water service to a parcel of property.

"Department" means the City's Water/Wastewater Department.

"Director" means the Director of the City Water/Wastewater Department or his authorized designee.

"Enforcement Officer" means any individual employed or otherwise charged by the City to inspect or enforce codes, ordinances, mandates, regulations, resolutions, rules or other laws adopted by the City Council or other regulatory bodies.

"Notice of Violation" means a notice provided by the City to any person who as violated any provisions of this Chapter 13.28.

"Person" means any natural person, firm, joint venture, joint stock company, partnership, public or private association, club, company, corporation, business trust, organization, public or private agency, government agency or institution, school district, college, university, any other user of water provided by the City, or the manager, lessee, agent, servant, officer or employee of any of them or any other entity which is recognized by law as the subject of rights or duties.

"Water Conservation Plan" means the water conservation plan established pursuant to this chapter.

"Water shortage emergency" means a condition existing within the city in which the ordinary water demands and requirements of persons within the city cannot be satisfied without depleting the water supply of the city to the extent that there would be insufficient water for human consumption, sanitation, and fire protection. A water shortage emergency includes both an immediate emergency, in which the city is unable to meet current water needs of persons within the city, as well as a threatened water shortage, in which the city determines that its supply cannot meet an increased future demand.

13.28.040 APPLICATION.

The provisions of this chapter shall apply to all persons, customers, and property served water by the City, and shall also apply to all property and facilities owned, maintained, operated, or otherwise under the jurisdiction of the City.

13.28.050 GENERAL PROHIBITION.

No water user shall make, cause, use, or permit the use of water supplied by the City for residential, commercial, industrial, agricultural, governmental or any other use in the manner contrary to this chapter. Waste or the unreasonable or non-beneficial use of water is prohibited in the City. Service may be terminated to any customer who knowingly and willfully violates any provision of this Chapter.

13.28.060 STAGE CRITERIA.

The Director shall recommend guidelines for adoption by the City Council setting forth the criteria to determine when water supply conditions in the City require the implementation or termination of each water conservation stage. Such guidelines shall be updated when the Director determines availability of water so requires.

13.28.070 DETERMINATION OF WATER CONSERVATION STAGES.

A. The Department shall monitor the projected supply and demand for water by its customers on a daily basis during the months of June, July, August, September, and October and shall recommend to the City Manager the extent of conservation required through the implementation and/or termination of particular conservation stages to allow the Department to prudently plan for and supply water to its customers. Thereafter, the City Manager may recommend to the City Council the implementation or termination of the appropriate stage of water conservation in accordance with the applicable provisions of this chapter.

B. The City Council may implement or terminate the appropriate conservation stage pursuant to Section 13.28.070 of this chapter. Notice of the implementation of successive stages of water conservation shall be given to water users immediately both by publication at least once in a newspaper of general circulation within ten (10) days after adoption, and by notice enclosed with the next regular city invoice for water utility service or delivered by U.S. Mail.

C. If the City Council cannot meet in time to act to protect the public interest pursuant to this chapter, the City Manager or his designee is hereby authorized and directed to implement such provisions of this chapter upon his or her written determination that the City cannot supply adequate water to meet the ordinary demands of water consumers, and that such implementation is necessary to protect the public health or safety. Such written determination shall be presented to the City Council at its next meeting for review, revocation, or ratification. Such meeting shall be held as soon as possible.

13.28.080 WATER CONSERVATION STAGES AND IMPLEMENTATION.

A. Stage I, Normal Conditions. Water Conservation Stage I applies during periods when the City is able to meet all of the water demands of its customers. Water Conservation Stage I is in effect at all times unless the City Council otherwise declares that another water conservation stage is in effect pursuant to this chapter. The following water conservation measures apply during Stage I:

1. The following water uses are recommended:

   i. Water conservation should be practiced within homes and business at all times.

   ii. Sprinklers and irrigation systems should be adjusted to avoid overspray, runoff in excess of five (5) minutes, or other waste.

   iii. Use of potable water for irrigating or watering turf, gardens, landscaped areas, trees, shrubs, or other plants utilizing individual sprinkler systems should only be done between the hours of 6:00 p.m. and 10:00 a.m. (agricultural accounts are excluded from the time of irrigation restrictions). Drip irrigation and hand watering with a handheld hose or faucet filled bucket are exempt from this recommendation.

   iv. All restaurants are requested not to serve water to their customers unless specifically requested by the customer.

2. The following uses of water are hereafter considered non-essential to the public health, safety and welfare, constitute the waste of water, and are hereby prohibited at all times:

   i. Use of potable water to clean sidewalks, walkways, driveways, parking areas, patios, porches, verandas, tennis courts, or other paved, concrete, or other hard surface areas, except where necessary for the benefit of public health or safety.

   ii. Use of potable water to clean, fill, or maintain decorative fountains, lakes, or ponds, unless such water is recycled.

   iii. Permitting potable water to escape from leaks within the customer's plumbing system. All water leaks from a customer's plumbing system shall be repaired in a timely manner.

   iv. Washing of automobiles, boats, trailers, aircraft, or other vehicles by hose without a shutoff nozzle and bucket, except to wash such vehicles at commercial or fleet vehicle washing facilities. Provided, however, such washings are exempt from these regulations when health, safety, and welfare of the public is contingent upon frequent vehicle cleaning, such as garbage trucks and vehicles used to transport food or perishables.

B. Stage II, Water Alert. Stage II applies during periods when the City will not be able to meet all of the water demands of its customers. The following mandatory conservation measures shall apply during Stage II:

1. All measures listed under Stage I, Subsection 13.28.080A.

   The use of potable water for irrigating or watering turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants utilizing individual sprinkler systems shall only be permitted between the hours of 6:00 p.m. and 8:00 a.m. Agricultural accounts are excluded from the time of irrigation restrictions. Drip irrigation and hand watering with a handheld hose with a positive shutoff nozzle or faucet filled bucket are exempt from these restrictions.

2. No restaurant, hotel, café, cafeteria or other public place where food is sold, served, or offered for sale, shall serve drinking water to any customer unless expressly requested.

3. Washing of automobiles, boats, trailers, aircraft, and other types of mobile equipment shall be prohibited unless done with a hand-held bucket or hand-held hose equipped with a positive shutoff nozzle for quick rinses. This section does not apply to the washing of the above-listed vehicles or mobile equipment when conducted at a commercial car wash utilizing a recycling system. Provided, however, such washings are exempt from these regulations when the health, safety, and welfare of the public is contingent upon frequent vehicle cleaning, such as garbage trucks and vehicles used to transport food or perishables.

4. Golf course customers and commercial nursery customers shall curtail all non-essential water use and shall irrigate or water turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants only between the hours of 10:00 p.m. and 6:00 a.m., where possible. These customers shall reduce their potable water consumption by 15% of their prior year's consumption for the comparable billing period.

5. Outdoor irrigation and watering of turf, gardens, landscaped areas, trees, shrubs, or other plants utilizing individual sprinkler systems in parks, schools, publicly-owned property, and the public rights-of-way shall be permitted only between the hours of 10:00 p.m. and 6:00 a.m. These customers shall reduce their potable water consumption by 15% of their prior year's consumption for the comparable billing period.

6. The use of potable water for compaction, dust control, and other types of construction shall be allowed only pursuant to a permit issued by the Department. Use of potable water for such purposes shall be limited to the conditions of the permit or may be prohibited as determined by the Director or his designee.

C. Stage III, Water Warning. Stage III applies during periods when the City will not be able to meet all of the water demands of its customers. The following mandatory conservation measures shall apply during Stage III:

1. All measures listed under Stage I (Section 13.28.080A) and Stage II (Section 13.28.080B).

2. Washing of automobiles, boats, trailers, aircraft, and other types of mobile equipment is prohibited. Washing of the above-listed vehicles or mobile equipment shall only be allowed at a commercial car wash utilizing recycling systems. Provided, however, such washings are exempt from these regulations when health, safety, and welfare of the public is contingent

upon frequent vehicle cleaning, such as garbage trucks and vehicles used to transport food or perishables.

3. New water service connections shall be permitted, but the use of potable water for any new service connection before occupancy of any premises shall be permitted only for essential construction and testing of landscape irrigation systems. The installation of new landscaping for any new development and/or project must be approved by the Department.

4. Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants by commercial nursery customers shall be permitted only on even numbered days between the hours of 11:00 p.m. and 6:00 a.m., and only with a hand-held hose equipped with a positive shutoff nozzle or with drip irrigation. Commercial nursery customers shall reduce their potable water consumption by 25% of the customer's prior year's consumption for the comparable billing period.

5. Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants by all golf course customers shall be permitted only on odd numbered days, between the hours of 11:00 p.m. and 6:00 a.m., unless the applicable irrigation system is equipped with an electronic moisture sensor control system and/or drip irrigation system. Golf course customers shall reduce their potable water consumption by 25% of their prior year's comparable billing period.

6. Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants at schools shall be permitted only on odd numbered days, between the hours of 11:00 p.m. and 6:00 a.m., unless the applicable irrigation system is equipped with an electronic moisture sensor control system and/or drip irrigation system. Water consumption at all school property shall be reduced by 25% of the customer's prior year's comparable billing period.

7. Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants at all publicly-owned property shall be permitted only on even numbered days, between the hours of 11:00 p.m. and 6:00 a.m., unless the applicable irrigation system is equipped with an electronic moisture sensor control system and/or drip irrigation system. Water consumption at all publicly-owned property shall be reduced by 25% of the customer's prior year's comparable billing period unless they are using reclaimed water.

8. Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants for all other customers shall only be permitted as follows:

    i. Customers with addresses ending in an even number shall be permitted to irrigate or water on even numbered days only and customers with addresses ending in an odd number shall water on odd numbered days only. Such restrictions shall not apply to any customer whose property is equipped with an electronic moisture sensor control system and/or drip irrigation system.

    ii. All watering shall be permitted only between the hours of 8:00 p.m. and 6:00 a.m.

9. Water being used during repair or maintenance of a customer's watering system shall be exempt from this section.

10. Swimming pools, ornamental pools, fountain and artificial lakes shall not be filled or refilled after being drained.

11. Water used for compaction, dust control, and other types of construction shall only be authorized by a permit issued by the Department and shall be limited to the conditions of the permit or may be prohibited as determined by the Director or his designee.

12. All agricultural customers shall irrigate or water only at times approved by the Department.

D. Stage IV, Water Emergency. Stage IV shall apply when the ordinary demands and requirements of City water customers cannot be satisfied without depleting the City water supply to the extent that there would be insufficient water for human consumption, sanitation and fire protection. A water shortage emergency includes both an immediate emergency, in which the City is unable to meet current water needs of persons within the City, as well as a threatened water shortage, in which the City determines that its supply cannot meet an increased future demand. The following mandatory conservation measures shall apply during Stage IV:

1. All measures listed under Stage I (Section 13.28.080A), Stage II (Section 13.28.080B), and Stage III (Section 13.28.080C).

2. No potable water shall be used for construction purposes. All construction meters shall be locked off or removed.

3. Commercial nursery customers shall water only on designated irrigation days (based on property address number) between the hours of 11:00 p.m. and 6:00 a.m. and only with a hand-held hose equipped with a positive shutoff nozzle or with a drip irrigation system.

4. Outdoor irrigation or watering of turf, groundcover, gardens, landscaped areas, trees, shrubs, or other plants shall be prohibited for all other customers.

5. The filling, refilling, or adding of water to uncovered swimming or wading pools and spas shall be prohibited at all times.

6. The operation of any ornamental fountain or similar structure shall be prohibited.

7. The issuance of new water service connections and meters shall be prohibited.

8. Washing of vehicles or mobile equipment used for purposes such as garbage collection or transporting foods shall only be allowed when health, safety, and welfare of the public is contingent upon frequent vehicle cleaning, and shall be authorized only pursuant to a permit issued by the Department.

9. The use of water shall be limited to essential household, commercial, manufacturing, or processing uses only, except where other uses may be allowed pursuant to a permit issued by the Department.

10. Other restrictions may be necessary during a declared Water Shortage Emergency, to safeguard the adequacy of the water supply for domestic, sanitation, fire protection, and environmental requirements.

13.28.090 EXEMPTIONS.

A. No exemption shall be granted to any person for any reason in the absence of a showing that the restrictions herein would:

1. Cause an unnecessary and undue hardship to the person or the public; or

2. Cause an emergency condition affecting the health, sanitation, fire protection or safety of the person or of the public.

B. The City Manager may grant exemptions for uses of water otherwise prohibited by the regulations set forth in Chapter 13.28. Any person requesting an exemption from the provisions of Chapter 13.28 shall submit to the Department an application for an exemption stating the justified circumstances. The application shall be in a form prescribed by the Department. If the exemption is not granted, the person may submit an appeal in writing pursuant to Section 13.28.120.

C. Inconvenience or the potential for damage to landscaping shall not be considered for exemption from any section of this Ordinance.

D. When a Stage II or III has been declared and is in effect, a thirty-day exemption will be granted for the installation of drought tolerant landscaping, new construction or re-landscaping of property, only by a permit issued by the Department. No exemption shall be granted or permit issued when a Stage IV has been declared and is in effect.

13.28.100 ENFORCEMENT.

A. Violations – In addition to the remedy of criminal prosecution available to the City as described in Subsection 13.28.100, a violation of any water use restrictions of this chapter 13.28 currently in effect may result in the imposition of fines, water use restrictions, and/or termination of water service as set forth below:

1. First Violation – Notice of Non-compliance. A written warning, accompanied by a copy of this Ordinance, will be delivered by U.S. Mail and/or hung on customer's door. Any such notice of violation shall specify a reasonable period to achieve compliance, and shall be directed to the customer of record for the premises where the noncompliance was observed.

2. Second Violation – Warning. A written warning and notice of the future imposition of a fine to be collected on the customer's utility bill will be issued. Any such notice of violation shall require compliance within in three calendar days, and shall be directed to the customer of record for the premises where the noncompliance was observed. Delivery will be made by Certified U.S. Mail and/or by personal delivery with a declaration of delivery returned to the City Manager.

3. Third Violation (within one year). A citation will be issued and a fine of $100.00 will be imposed and collected on the customer's next regular utility bill.

4. Fourth Violation (within one year of the first violation). A citation will be issued, a fine of $200.00 will be imposed and collected on the customer's next regular utility bill, and a flow restricting device will be installed on the meter serving the customer's property for a

minimum of ninety-six (96) hours. The restricted flow shall meet minimum County Health Department standards, if any have been established. If the ninety-six hour period ends on a weekend or holiday, full service will be restored during the next business day.

5. Fifth Violation (within one year of the first violation). A citation will be issued, a fine of $500.00 will be imposed, and service will be terminated for such period as the City Manager determines to be appropriate under the circumstances. Prior to termination of service, the customer may submit an appeal pursuant to the procedures set forth in Section 13.28.120. Written notice of a hearing to consider any appeal shall be mailed to the customer at least ten calendar days before the hearing.

6. Any person subject to a fine pursuant to this Section 13.28.100 may file an appeal pursuant to Section 13.28.120.

B. Fines, Additional Charges. Any fine imposed pursuant to Chapter 13.28 shall be in addition to the basic water rates and other charges of the Department for the account and shall appear on and be payable with the billing statement for the period during which the violation occurred; non-payment shall be subject to the same remedies available to the Department as for non-payment of basic water rates.

In addition to any surcharge, a customer violating this Ordinance shall be responsible for payment of the Department's charges for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service per the Department's Water Rules and Rate Schedule then in effect. Such charges shall be paid prior to the removal of the flow restrictor or reconnection of service, whichever the case may be.

C. Non-liability for Damage. The customer or resident who violates this chapter assumes responsibility for injury to the customer and/or other residents/occupants receiving service, including emotional distress and/or damage to the customer's private water system and/or to other real or personal property owned by the customer or by a third party resulting from the installation and operation of a flow restricting device or from termination of service; said customer shall thereby be deemed to have:

1. Waived any claim for injury or for damage to the customer's property which the customer may have otherwise have against the City; and

2. Agreed to indemnify, defend, and hold the City harmless from claims by third parties for injury or property damage arising or claimed to arise out of the City's installation and/or operation of a flow restricting device or termination of water service.

13.28.110 AUTHORITY – MISDEMEANOR.

This Chapter is adopted pursuant to Section 375 of the California Water Code. Any second or subsequent violation of this Chapter 13.28 after notice is provided as specified in Section 13.280.100 may be prosecuted as a misdemeanor.

13.28.120 APPEALS.

A. The City Manager, or his designated Enforcement Officer, shall determine when any violation of this Chapter 13.28 has occurred and shall issue a Notice of Violation. Any person receiving notice of a second or subsequent violation pursuant to Section 13.28.100 of this chapter shall have a right to a hearing by the City Manager. The customer's written request for a hearing must be received within ten calendar days of mailing or other delivery of the notice of violation. Any Notice of Violation not timely appealed shall be final. Upon receipt of a timely appeal, a hearing shall be scheduled within fifteen calendar days. Written notice of the hearing shall be mailed at least eight calendar days before the date of said hearing.

B. The customer's written request for a hearing within the ten calendar day period shall automatically stay the imposition of monetary fines on the customer's utility bill until the City Manager renders his or her decision. The decision of the City Manager shall be final and not subject to further appeal pursuant to this code.

C. Pending receipt of a written appeal or pending a hearing pursuant to an appeal, the City Manager or the Enforcement Officer may take appropriate steps to prevent the unauthorized use of water as appropriate to the nature and extent of the violation and the current declared water condition.

13.28.130 CITY MANAGER DELEGATION.

The City Manager may delegate all duties and responsibilities hereunder.

13.28.140 SEVERABILITY.

If any provision, section, subsection, sentence, clause or phrase of this chapter, or the application of same to any person or set of circumstances is held to be unconstitutional, void, or invalid, such decision shall not affect the remaining portions of this chapter which shall remain in full force and effect, and all provisions of this chapter are declared to be severable for that purpose.

13.28.150 INCOMPATIBLE PROVISIONS.

To the extent any provision of this chapter is incompatible with or at variance with any prior adopted ordinance or resolution, the provisions of this chapter shall take precedence, and all prior ordinances and resolutions shall be interpreted to harmonize with and not change the provisions of this chapter.

13.28.160 EXEMPTION FROM CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA).

The City Council determines that the adoption of this chapter and implementation of the measures set forth herein are exempt from review under the California Environmental Quality Act of 1970 because they constitute a project undertaken as immediate action necessary to prevent or mitigate a water shortage emergency, and to protect natural resources.

Section 3.

Upon adoption by the City Council, the provisions of this chapter shall become effective immediately. Notice of the implementation of successive stages of water conservation shall be

given to water users immediately both by publication at least once in a newspaper of general circulation within ten calendar days after adoption, and by notice enclosed with the next regular city invoice for water utility service or delivered by U.S. Mail.

Section 4.

Introduced at a regular meeting of the City Council of the City of Colton, California, held on September 2, 2014;

Enacted at a regular meeting of the City Council of the City of Colton, California, held on _____, 2014, by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Mayor

Attest:_____
City Clerk

ORDINANCE NO. 1560

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF RIALTO, CALIFORNIA, AMENDING SECTIONS 12.20.020, 12.20.021, 12.20.022, 12.20.023, 12.20.024 AND 12.20.040 OF THE RIALTO MUNICIPAL CODE REGARDING WATER CONSERVATION REQUIREMENTS

WHEREAS, on January 17, 2014, the Governor issued a proclamation of a state of emergency under the California Emergency Services Act based on drought conditions; and

WHEREAS, on April 25, 2014, the Governor issued a proclamation of a continued state of emergency under the California Emergency Services Act based on continued drought conditions; and

WHEREAS, on July 14, 2014, the State Water Resources Control Board adopted emergency drought regulations for statewide urban water conservation; and

WHEREAS, on July 28, 2014, the emergency drought regulations were approved by the Office of Administrative Law and became effective; and

WHEREAS, on September 9, 2014, the City of Rialto adopted Ordinance No. 1550, amending Sections 12.20.010, 12.20.020, 12.20.021, 12.20.022, 12.20.023, 12.20.024, 12.20.030, 12.20.040, 12.20.050, 12.20.060, 12.20.080, and 12.20.090 of the Rialto Municipal Code regarding water conservation requirements in order to comply with the emergency drought regulations; and

WHEREAS, on March 17, 2015, the State Water Resources Control Board amended and re-adopted the emergency drought regulations for statewide urban water conservation; and

WHEREAS, on March 27, 2015, the amended emergency drought regulations were approved by the Office of Administrative Law and became effective; and

WHEREAS, on April 1, 2015, the Governor issued an Executive Order directing the State Water Resources Control Board to adopt emergency drought conservation regulations that result in a collective Statewide 25% reduction in potable urban water usage as compared to 2013; and

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WHEREAS, on May 5, 2015, the State Water Resources Control Board amended and re-adopted the emergency drought regulations for statewide urban water conservation; and

WHEREAS, on May 18, 2015, the amended emergency drought regulations were approved by the Office of Administrative Law and became effective; and

WHEREAS, the amended emergency drought regulations adopted by the State Water Resources Control Board require the City of Rialto to impose restrictions that result in a 28% reduction in potable water usage as compared to 2013.

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF RIALTO FINDS AND ORDAINS AS FOLLOWS:

Section 1. The above recitals are all true and correct and are hereby adopted as findings.

Section 2. Section 12.20.020 of the Rialto Municipal Code hereby is amended to read in full as follows:

"**12.20.020 - Prohibited uses of water.**

The city council shall adopt the applicable conservation stage by resolution, which shall apply to all persons and property affected by this chapter.

The term "base year" shall mean the following:

A. The year 2013, if the customer occupied the subject real property for the entire year.

B. If the customer did not occupy the subject real property for the entire year of 2013, the base year for that customer would be the first twelve (12) months the customer occupied the subject real property in or after 2013.

C. If the customer has not occupied the subject real property for a twelve (12) month period on the adoption of this Ordinance, then the city will determine goals for that customer, which goals shall be compared to the actual use of the customer on the subject property. The customer shall have a ten (10) day period after the customer receives the goals to appeal that determination to the City Administrator, in writing. If the customer fails to appeal the determination within the ten (10) day period the goals shall be final. Upon receipt of a timely appeal, the City Administrator shall schedule a hearing at which the City Administrator or his/her designated representative shall act as the hearing officer. The hearing shall be at least ten (10) days following receipt of the appeal, and the city shall mail written notice of the hearing to the customer at least ten (10) days before the date of said hearing. The determination of the hearing officer with respect to the goals shall be final."

Section 3. Section 12.20.021 of the Rialto Municipal Code hereby is amended to

read in full as follows:

"**12.20.021 Stage 1 - Normal conditions.**

Stage 1, normal conditions means normal supply and distribution capacity is available and the following water conservation measures shall apply:

A. Recommendations for Use of Water.

1. Watering with automatic sprinklers should be done between eight p.m. and six a.m. Hand watering and non-automatic sprinklers should be done between six p.m. and eight a.m. Drip irrigation is exempt from this recommendation. Water being used during repair or maintenance of watering systems is exempt from this section.

2. Water conservation should be practiced within the home or business.

3. All restaurants and food establishments are requested not to serve water to their customers unless specifically requested by the customer.

B. The following uses of water are hereafter considered nonessential to the public health, safety and welfare and, if practiced, would constitute wastage of water and is hereby prohibited, pursuant to Water Code Section 350 et seq., Water Code Section 71640 et seq., and the common law:

1. There shall be no application of water to sidewalks, walkways, driveways, parking areas, patios, porches, verandas, tennis courts or other paved, concrete or other hard surface areas, except that flammable or other similarly dangerous or unhealthy substances may be washed from said areas by direct hose flushing for the benefit of public health or safety.

2. No water shall be used to clean, fill, operate or maintain levels in decorative fountains unless such water is part of a recirculating system.

3. No person shall knowingly permit water to leak from any facility, improvement or plumbing fixture on his/her/its premises; any such leak shall be repaired in a timely manner.

4. Washing of automobiles, trucks, trailers, boats, airplanes, and other types of mobile equipment is prohibited unless done with a bucket or hand-held hose equipped with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use. This section does not apply to the washing of the above-listed vehicles or mobile equipment when conducted at a commercial car or truck wash utilizing recirculating systems. Such washings are exempted from these regulations when the health, safety, and welfare of the

public is contingent upon frequent vehicle cleaning such as garbage trucks and vehicles used to transport food and perishables.

5. Use of water for any purpose which results in flooding or run-off in gutters, driveways or streets is prohibited.

6. The use of sprinklers for any type of irrigation during high winds, which divert a significant amount of water away from the intended landscaping, is prohibited.

7. The irrigation of potable water of ornamental turf on public street medians is prohibited. The term "median" shall mean the strip of land between street lanes.

8. The irrigation with potable water of landscape outside of newly constructed homes and buildings must be consistent with regulations or other requirements established by the California Buildings Standards Commission, as those regulations may be modified from time to time."

Section 4. Section 12.20.022 of the Rialto Municipal Code hereby is amended to read in full as follows:

"**12.20.022 Stage 2 - Water alert.**

Stage 2 means that the city may not be able to meet all water demands of all water customers, or the state of California has adopted regulations requiring the city to implement requirements and actions of a Stage 2 Water Alert as outlined herein this Section 12.20.022, regardless of the city's local water supply, and the following water conservation measures shall apply:

A. Additional reductions.

1. All policies and prohibitions listed in Sections 12.20.010 and 12.20.021.

2. All customers are required to reduce potable water consumption by a minimum twenty percent compared to their potable water consumption in the base year.

3. The city shall screen all new applications for water service installations and shall limit water use to that essential for construction and testing of landscape plumbing. Limited landscaping for new development shall be allowed as approved by the city.

4. All landscape irrigation shall be limited to no more than four days per week for no more than ten minutes per station per day. This provision does not apply to any landscape that has water-efficient devices that are operated properly. Water-efficient devices are drip irrigation systems and operational weather-

based irrigation controllers. The term "week" is defined as Sunday through Saturday.

5. Operators of hotels and motels must provide guests with the option of choosing not to have towels and linens laundered daily and prominently display notice of this option.

6. All restaurants are prohibited from serving water to their customers except when specifically requested by the customer.

7. All customers shall repair all leaks within seventy-two (72) hours of notification by the city, actual notice by the customer, or other notice of such leak, unless other arrangements are made with the city administrator or his/her designee.

8. Irrigating turf or ornamental landscapes during or within forty-eight (48) hours following measurable precipitation in excess of one-quarter (¼) inch is prohibited.

B. The following penalties shall apply:

1. First Violation: Notice of Non-Compliance—A written "warning" shall be issued for the first offense.

2. Second Violation: Warning of Penalties—A written warning notice of the future imposition of penalties that could be placed on the customer's water bill shall be issued for the second offense.

3. Third Violation: A surcharge of one hundred dollars shall be added to that billing for the third offense occurring within a one year period.

4. Fourth Violation: A surcharge of three hundred dollars, and installation of a flow restricting device in the meter for a minimum of ninety-six hours (at customer's expense) shall be imposed for the fourth offense occurring within a one-year period. Said restricted flow shall meet minimum county health department's standards, if any have been established. If said ninety-six hour period ends on a weekend or holiday, full service will be restored during the next business day.

5. Fifth Violation: A surcharge of five hundred dollars, and termination of water service at customer's expense for a two-day period shall be imposed for the fifth offense occurring within a one year period. Prior to the termination of water service, the customer may request an administrative hearing pursuant to Section 1.10.050."

Section 5. Section 12.20.023 of the Rialto Municipal Code hereby is amended to

read in full as follows:

"12.20.023 Stage 3 – Water warning.

Stage 3 means that the city is not able to meet all water demands of all water customers, or the state of California has adopted regulations requiring the city to implement requirements and actions of a Stage 3 water warning as outlined herein this Section 12.20.023, regardless of the city's local water supply, and the following water conservation measures shall apply:

A. Sub-stage 3-A.

1. All policies and prohibitions listed in Sections 12.20.010, 12.20.021 and 12.20.022.

2. All customers are required to reduce potable water consumption by a minimum twenty-five percent compared to their potable water consumption in the base year.

3. New water service shall be installed but water shall be used before occupancy for essential construction only and for testing of landscape irrigation systems. The installation of new landscaping for all new development/projects must be approved by the city.

4. Swimming pools, ornamental ponds, fountains, water displays, hot tubs, spas and artificial lakes shall not be filled or refilled after being drained.

5. All landscape irrigation with potable water shall be limited to no more than three days per week for no more than ten minutes per station per day. This provision does not apply to any landscape that has water-efficient devices that are operated properly. Water-efficient devices are drip irrigation systems and operational weather-based irrigation controllers. Week is defined as Sunday through Saturday.

B. Sub-stage 3-B.

1. All policies and prohibitions listed in Sections 12.20.010, 12.20.021, 12.20.022, and sub-section A of this Section, except that all landscape irrigation with potable water shall be limited to no more than two days per week for no more than ten minutes per station per day.

2. Water used for compaction, dust control, and other types of construction shall be by permit only and will be limited to conditions of the permit or may be prohibited as determined by the city administrator, or his/her designee.

C. Sub-stage 3-C.

1. All policies and prohibitions listed in Sections 12.20.010, 12.20.021, 12.20.022, and sub-sections A and B of this Section, except that all landscape irrigation with potable water shall be limited to no more than one day per week for no more than ten minutes per station per day.

2. Washing of automobiles, trucks, trailers, boats, airplanes and other types of mobile equipment is prohibited. Washing of the above-listed vehicles or mobile equipment shall be done only at a commercial car wash where recirculating or recycled water is being utilized. Such washings are exempt from these regulations when the health, safety, and welfare of the public is contingent upon frequent vehicle cleaning such as garbage trucks and vehicles used to transport food and perishables.

D. The following penalties shall apply:

1. First Violation: Notice of Non-Compliance—A written "warning" shall be issued for the first offense.

2. Second Violation: Warning of Penalties—A written warning notice of the future imposition of penalties that could be placed on the customer's water bill shall be issued for the second offense.

3. Third Violation: A surcharge of one hundred dollars shall be added to that billing for the third offense occurring within a one year period.

4. Fourth Violation: A surcharge of three hundred dollars, and installation of a flow restricting device in the meter for a minimum of ninety-six hours (at customer's expense) shall be imposed for the fourth offense occurring within a one-year period. Said restricted flow shall meet minimum county health department's standards, if any have been established. If said ninety-six hour period ends on a weekend or holiday, full service will be restored during the next business day.

5. Fifth Violation: A surcharge of five hundred dollars, and termination of water service at customer's expense for a two-day period shall be imposed for the fifth offense occurring within a one year period. Prior to the termination of water service, the customer may request an administrative hearing pursuant to Section 1.10.050."

Section 6. Section 12.20.024 of the Rialto Municipal Code hereby is amended to read in full as follows:

"12.20.024 Stage 4 – Water emergency.

Stage 4 means that the city is experiencing a major failure of water supply or distribution, or the state of California has adopted regulations requiring the city to implement requirements and actions of a Stage 4 water emergency as outlined herein this Section 12.20.024, regardless of the city's local water supply, and the following water conservation measures shall apply:

A. Additional reductions.

1. All policies and prohibitions shown in Sections 12.20.010, 12.20.021, 12.20.022 and 12.20.023.

2. All customers are required to reduce potable water consumption by a minimum thirty percent compared to their potable water consumption in the base year.

3. No water shall be used for construction purposes unless they are using reclaimed water. All fire hydrant and construction meters shall be locked off or removed.

4. Commercial nurseries shall water only between the hours of eleven p.m. and six a.m. and only with hand-held devices or with drip irrigation.

5. There shall be no watering of any lawn or landscaped area, except by use of reclaimed water.

6. The use of water shall be limited to essential household, commercial, manufacturing or processing uses only, except where other uses may be allowed by permit.

B. The following penalties shall apply:

1. First Violation: Notice of Non-Compliance—A written "warning" shall be issued for the first offense.

2. Second Violation: Warning of Penalties—A written warning notice of the future imposition of penalties that could be placed on the customer's water bill shall be issued for the second offense.

3. Third Violation: A surcharge of one hundred dollars shall be added to that billing for the third offense occurring within a one year period.

4. Fourth Violation: A surcharge of three hundred dollars, and installation of a flow restricting device in the meter for a minimum of ninety-six hours (at customer's expense) shall be imposed for the fourth offense occurring within a one-year period. Said restricted flow shall meet minimum county health department's

standards, if any have been established. If said ninety-six hour period ends on a weekend or holiday, full service will be restored during the next business day.

5. Fifth Violation: A surcharge of five hundred dollars, and termination of water service at customer's expense for a two-day period shall be imposed for the fifth offense occurring within a one year period. Prior to the termination of water service, the customer may request an administrative hearing pursuant to Section 1.10.050."

Section 7. Section 12.20.040 of the Rialto Municipal Code hereby is amended to read in full as follows:

"**12.20.040 - Duration of declaration.**

The declaration of any stage of water supply conditions shall remain in effect until such time as another stage is declared."

Section 8. Except as specifically amended by this Ordinance, all remaining provisions of Chapter 12.20 of the Rialto Municipal Code shall remain unmodified and in full force and effect.

Section 9. The City Clerk shall certify to the adoption of this Ordinance, and cause the same to be published in the local newspaper, and the same shall take effect thirty (30) days after its date of adoption:

PASSED, APPROVED AND ADOPTED this 14th day of July, 2015.

DEBORAH ROBERTSON, Mayor

ATTEST:

BARBARA McGEE, City Clerk

APPROVED AS TO FORM

FRED GALANTE, City Attorney

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STATE OF CALIFORNIA)
COUNTY OF SAN BERNARDINO) ss
CITY OF RIALTO)

I, Barbara McGee, City Clerk of the City of Rialto, do hereby certify that the foregoing Ordinance No. **1560** was duly passed and adopted at a regular meeting of the City Council of the City of Rialto held on the 14th day of July, 2015.

Upon motion of Councilmember Baca Jr., seconded by Councilmember O'Connell, the foregoing Ordinance No. **1560** was duly passed and adopted.

Vote on the Motion:

AYES: Mayor Robertson, Councilmembers: Baca Jr., Palmer, O'Connell, Scott

NOES: None

ABSENT: None

IN WITNESS WHEREOF, I have hereunto set my hand and the Official Seal of the City of Rialto, this 28th day of July, 2015.

Barbara A. McGee, City Clerk

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MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS

July 24, 2014

Present: Directors Kidd, McKeever, Larkin, Best, NcNaboe, Saunder and Seuylemezian; Also General Manager Hough, Distribution Superintendent Gudgeon

Absent: Directors Baker and McHugh, Administrative Sec/Treas Gimple

---

The regular meeting of the Board of Directors of Riverside Highland Water Company, held in the Boardroom at 12374 Michigan Street, Grand Terrace, CA, was convened by President McKeever at 9:00 a.m., July 24, 2014.

...
...
...

The Riverside Highland Water Company Water Shortage Contingency Plan was reviewed and discussed. The motion was made and seconded (Seuylemezian/McNaboe) to approve the plan. Passed

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Riverside Highland Water Company

Water Shortage Contingency Plan

9.0 Water Shortage Contingency Plan

Water supplies may be interrupted or reduced significantly in a number of ways, such as a drought which limits supplies, an earthquake which damages delivery or storage facilities, or a regional power outage. This section focuses on water shortage contingency planning for Riverside Highland Water Company.

Table 9-1
SUMMARY OF CURRENT AND PLANNED WATER SUPPLIES (AF)

Water Supply Source		Supply (AF)					
Existing		2010	2015	2020	2025	2030	2035
	Wholesale/Imported	0	0	0	0	0	0
	Groundwater	13,390	13,390	13,390	13,390	13,390	13,390
	Local Surface Water	0	0	0	0	0	0
	Recycled Water	0	0	0	0	0	0
	Transfers/Exchanges	1,000	1,000	1,000	1,000	1,000	1,000
	Groundwater Banking	0	0	0	0	0	0
	Total Existing Supplies	14,390	14,390	14,390	14,390	14,390	14,390
Planned							
	Wholesale/Imported	0	0	0	0	0	0
	Groundwater	0	1,200	2,400	3,600	6,000	6,000
	Local Surface Water	0	0	0	0	0	0
	Recycled Water	0	0	0	0	0	0
	Transfers/Exchanges	0	0	0	0	0	0
	Groundwater Banking	0	0	0	0	0	0
	Total Planned Supplies	**0**	**1,200**	**2,400**	**3,600**	**6,000**	**6,000**
	Total Existing and Planned Supplies	**0**	**15,590**	**56,000**	**16,790**	**17,990**	**20,390**

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9.1 Coordinated Planning

Disasters, such as earthquakes, can and will occur without notice. In order to minimize confusion and service interruptions, the Company has developed an emergency plan. This emergency plan provides guidelines for actions to be undertaken by personnel during an emergency.

In an emergency, personnel are required to meet at a reporting location for the assignment of duties. Those personnel who are unable to report because of downed structures or other obstacles are authorized by the Company to offer their services to local water providers if those providers are also experiencing an emergency. Once damages have been identified, the plan provides for the dispatch of repair personnel. In cases where water service is diminished due to such emergencies, the Company has the option of notifying the public through press releases, Company web site, flyers, and telephone depending on the severity of the emergency.

9.2 Stages of Action to Respond to Water Shortages

In order to minimize the social and economic impact of water shortages, the Company will manage water supplies prudently. As the shortages become evident to the General Manager, the General Manager will stay in contact with the Board of Directors. Shortages may evoke a stage at any time. The four-stage rationing plan to be undertaken by the Company in response to water supply shortages is listed in table 9-2 and is described in the "Water Conservation Provisions of stages 2, 3 and 4.

Table 9-2
WATER CONSERVATION PROVISIONS

Stage	Percent Shortage	Conservation Measures	Expected Overall Reduction
1	Normal	Voluntary	10%
2	10% to 25%	Voluntary/Mandatory	25%
3	25% to 35%	Mandatory	35%
4	35% to 50%	Mandatory	50%+

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9.3 Stage 1 – Normal Conditions

During times of normal supply, it is recommended that water conservation be practiced within the home or business and prevent the waste of unreasonable use of water. These include the following:

- No water shall be used to clean, fill, operate or maintain levels in decorative fountains unless the water is part of a recycling system.
- Leaking plumbing fixtures shall be repaired in a timely manner so as to not waste water.
- Water use which results in flooding or run-off should be prevented and controlled.
- The use of sprinklers for any type of irrigation during high winds is prohibited.

9.4 Stage 2 – Water Alert Conditions

In addition to the prohibitions contained in Stage 1, Stage 2 has the following savings:

- The washing of automobiles, trucks, trailers, boats, and other mobile equipment is prohibited unless done with a hand held device equipped with an automatic shut off trigger nozzle. This does not apply to commercial car washes utilizing a recycling system or when the health and safety of the public would necessitate.
- Commercial nurseries shall water only between 11 P.M. and 6 A.M. using hand held devices or drip irrigation.
- School grounds shall prevent run-off from irrigation activities
- All publicly owned lawns and landscape shall prevent run-off from irrigation activities.
- All residential lawn watering shall prevent run-off from irrigation activities.
- There shall be no washing of driveways or sidewalks.
- Irrigation limited to crops presently planted.
- All restaurants prohibited from serving water to their customers except upon specific request.

9.5 Stage 3 – Water Warning Conditions

Stage 3 has the following aspects, in addition to the prohibitions and actions under Stage 2:

- Commercial nurseries shall water only between 11 P.M. and 6 A.M. using hand held devices or drip irrigation. Consumption shall be reduced by a minimum of 35%.
- School grounds to be watered on a Company approved schedule for hours and days of the week. Consumption shall be reduced by a minimum of 35%.
- All publicly owned lawns, landscape watering to be performed on a Company approved schedule for hours and days of the week. Consumption shall be reduced by a minimum of 35%
- All residential lawn watering to be performed on a Company approved schedule for hours and days of the week.

- All agricultural water users shall irrigate only at time approved by the company.
- Swimming pools and fountains are not to be refilled after draining.

9.6 Stage 4 – Water Emergency Conditions

Stage 4 is the most restrictive stage. Under this stage water use is limited to essential household, commercial, manufacturing or processing uses. No lawn or landscape water will be allowed. No construction water use to be allowed, construction meters to be locked off or removed.

9.7 Actions to Prepare for Catastrophic Interruption

Extended multi-week supply shortages due to natural disasters or accidents which will damage all water sources are unlikely. The Company's 7 storage reservoirs hold 8 million gallons, which is sufficient water to meet health and safety requirements of 50 gallons per day per capita for the 12,000 customers for 13 days. This assumes zero non-residential use.

The Company also has interconnections with four other agencies for emergency supplies.

The Company has portable back-up generators that can be used in the event of an area wide power outage. These generators can be located on both wells and booster stations throughout the system to continue water production.

9.8 Penalties and Consumption Reduction Methods

Penalties for noncompliance can range from warning notices to monetary surcharges or fines. For extreme cases, the placement of flow-restricting devices or the complete shutoff of the water service may be necessary.

9.9. Violations

- First Violation – issuance of written notice of violation to the water user.
- Second Violation – a fine or surcharge of $100 is imposed on the water account.
- Third Violation – a fine or surcharge of $200 is imposed on the water account.
- Fourth Violation – a fine or surcharge of $500 and/or the installation of a flow restricting device on the water meter at the Board of Directors discretion.

9.10 Financial Impacts of Actions During Shortages

During stages 2 through 4 of the Company's Water Shortage Contingency Plan, water consumption will decrease based on each individual stage and the amount of reduction goal achieved. The impacts of these reductions will result in a reduction in water sales revenues and a reduction of water production expenditures. In order to mitigate the financial impacts of a water shortage, the Company maintains sufficient funds within their account. These funds could be used to stabilize

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water rates during periods of water shortage or disasters affecting the water supply. Even with these reserves, rate increases may be necessary during a prolonged water shortage.

9.11 Mechanism to Determine Reductions in Water Use

The mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency plan will be the review of the daily production figures and the bi-monthly water meter readings. The General Manager or his designee shall access all available water supply data and shall make a report of his findings to the Board of Directors at the next regular meeting or at a special meeting called for that purpose. The Board of Directors at that time will determine and declare which of the four previously discussed conditions the Company's water supply is in and the extent of water conservation required to prudently plan for and supply water to the Company's customers.

2015 San Bernardino Valley RUWMP

Appendix H

JUDGMENT

Base Yrs - 26 yr
34/35 → 59/60

APR 17 1969
W. E. ST JOHN, County Clerk
By [illegible] Deputy

ENTERED IN
JUDGMENT BOOK
No. 362 Page 303
Date APR 17 1969

SUPERIOR COURT FOR THE STATE OF CALIFORNIA

FOR THE COUNTY OF ORANGE

ORANGE COUNTY WATER DISTRICT,

Plaintiff,

v.

CITY OF CHINO, et al.,

Defendants.

CITY OF CHINO, et al.,

Cross-Complainants,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

CORONA FOOTHILL LEMON COMPANY, et al.,

Cross-Complainants,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

CITY OF POMONA, a municipal corporation,

Cross-Complainant,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

No. 117628

JUDGMENT

CITY OF RIVERSIDE, et al.,

Cross-Complainants,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

BEAR VALLEY MUTUAL WATER COMPANY, et al.,

Cross-Complainants,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT, a municipal water district,

Cross-Complainant,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

EAST SAN BERNARDINO COUNTY WATER DISTRICT, a county water district,

Cross-Complainant,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

CITY OF SAN BERNARDINO, a municipal corporation,

Cross-Complainant,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

CITY OF REDLANDS, a municipal corporation,

Cross-Complainant,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

CITY OF COLTON, a municipal corporation,

Cross-Complainant,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

SAN BERNARDINO VALLEY WATER CONSERVATION DISTRICT, a water conservation district,

Cross-Complainant,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

CITY OF RIALTO, a municipal corporation,

Cross-Complainant,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

BIG BEAR MUNICIPAL WATER DISTRICT, a municipal water district,

Cross-Complainant,

v.

CITY OF ANAHEIM, et al.,

Cross-Defendants.

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RECITALS

a. Complaint. The complaint herein was filed on October 18, 1963, seeking an adjudication of water rights against substantially all water users in the area tributary to Prado Dam in the Santa Ana River Watershed.

b. Cross-Complaints. Thirteen cross-complaints were subsequently filed in the period of February 22 to March 22, 1968, by which said adjudication of rights was extended to substantially all water users within the Santa Ana River Watershed downstream from Prado Dam.

c. Physical and Legal Complexities. The physical and legal complexities of the case as framed by the complaint and cross-complaints are unprecedented. In excess of 4,000 individual parties have been served and the water supply and water rights of an entire stream system extending over 2,000 square miles and into four counties have been brought into issue. Every type and nature of water rights known to California law, excepting only Pueblo rights, is in issue in the case. Engineering studies by the parties jointly and severally leading toward adjudication of these rights or, in the alternative, to a physical solution, have required the expenditure of over four years' time and many hundreds of thousands of dollars.

d. Need for Physical Solution. It is apparent to the parties and to the Court that development of a physical solution based upon a formula for inter-basin allocation of obligations and rights is in the best interests of all the parties and is in furtherance of the water policy of the State. For purposes of such a physical solution, it is neither necessary nor helpful to define individual rights of all claimants within the watershed. Nontributary supplemental sources of water are or will be available to the parties in quantities sufficient to assure implementation of a solution involving inter-basin allocation of the natural water

supply of the Santa Ana River system. Sufficient information and data of a general nature are known to formulate a reasonable and just allocation as between the major hydrologic sub-areas within the watershed, and such a physical solution will allow the public agencies and water users within each such major hydrologic sub-area to proceed with orderly water resource planning and development.

e. Parties. Orange County Water District, Chino Basin Municipal Water District, Western Municipal Water District of Riverside County and San Bernardino Valley Municipal Water District are public districts overlying, in the aggregate, substantially all of the major areas of water use within the watershed. Said districts have the statutory power and financial resources to implement a physical solution. Accordingly, dismissals have been entered as to all defendants and cross-defendants other than said four public districts.

f. Cooperation by Dismissed Parties. As a condition of dismissal of said defendants and cross-defendants, certain of said parties have stipulated to cooperate and support the inter-basin water quality and water management objectives of the physical solution and this Judgment.

DECREE

NOW, THEREFORE, IT IS HEREBY ORDERED, ADJUDGED AND DECREED:

1. Jurisdiction. The Court has jurisdiction of the subject matter of this action and of the parties herein.

2. Exhibits. The following exhibits are attached to this Judgment and made a part hereof.

(a) Exhibit A -- map entitled "Santa Ana River Watershed", showing boundaries and other relevant features of the area subject to this Judgment.

(b) Exhibit B -- Engineering Appendix.

3. Definitions. As used in this Judgment, the following

terms shall have the meanings herein set forth:

(a) OCWD -- Orange County Water District, appearing and acting individually and in a representative capacity for and on behalf of all riparian, overlying and other landowners, water users and inhabitants within said District pursuant to Subdivision 7 of Section 2 of the Orange County Water District Act, as amended.

(b) CBMWD -- Chino Basin Municipal Water District, appearing and acting pursuant to Section 71751 of the California Water Code.

(c) WMWD -- Western Municipal Water District of Riverside County, appearing and acting pursuant to said Section 71751.

(d) SBVMWD -- San Bernardino Valley Municipal Water District, appearing and acting pursuant to said Section 71751.

Eastern not included

(e) Upper Districts -- CBMWD, WMWD and SBVMWD.

(f) Upper Area -- The area on Exhibit A which lies upstream from Prado.

(g) Lower Area -- The area on Exhibit A which lies downstream from Prado.

(h) Prado -- Said term shall be synonomous with Prado Dam, a facility constructed and maintained by the United States Corps of Engineers, as shown on Exhibit A.

(i) Riverside Narrows -- That bedrock narrows in the Santa Ana River indicated as such on Exhibit A.

(j) Storm Flow -- That portion of the total surface flow passing a point of measurement, which originates from precipitation and runoff without having first percolated to ground water storage in the zone of saturation, calculated in accordance with procedures

referred to in Exhibit B.

(k) Base Flow -- That portion of the total surface flow passing a point of measurement, which remains after deduction of Storm Flow, and modified as follows:

(1) At Prado. Base Flow shall:

(i) include any water caused to be delivered by CBMWD or WMWD directly to OCWD, pursuant to its direction and control and not measured at the gages at Prado;

(ii) exclude any nontributary water or reclaimed sewage water purchased by OCWD and delivered into the river upstream and which subsequently passes Prado, and

(iii) exclude water salvaged from evapo-transpiration losses by OCWD on lands presently owned by it above Prado.

(2) At Riverside Narrows. Base Flow shall:

(i) include any water caused to be delivered by SBVMWD directly to CBMWD or WMWD pursuant to their direction and control, or directly to OCWD with the consent of CBMWD and WMWD and pursuant to the direction and control of OCWD, and not measured at the gage at Riverside Narrows;

(ii) exclude any nontributary water purchased by CBMWD, WMWD or OCWD and delivered into the river upstream and which subsequently passes Riverside Narrows; and

(iii) exclude any effluent discharged from the City of Riverside sewage treatment plant.

(l) TDS -- Total dissolved solids determined as set forth in Exhibit B.

(m) Water Year -- The period from October 1 to the following September 30. Where reference is made herein to "year" or "annual", such terms shall be construed as referring to Water Year, unless the context indicates otherwise.

(n) Adjusted Base Flow -- Actual Base Flow in each year adjusted for quality as provided hereinbelow. Compliance with the respective obligations under Paragraph 5 shall be measured by the Adjusted Base Flow.

4. Declaration of Rights. Substantially all of the parties to this action, whether situate in Upper Area or Lower Area have or claim rights to the use of a portion of the water supply of the Santa Ana River system. In the aggregate, water users and other entities in Lower Area have rights, as against all Upper Area claimants, to receive an average annual supply of 42,000 acre feet of Base Flow at Prado, together with the right to all Storm Flow reaching Prado Reservoir. Water users and other entities in Upper Area have rights in the aggregate, as against all Lower Area claimants, to divert, pump, extract, conserve, store and use all surface and ground water supplies originating within Upper Area without interference or restraint by Lower Area claimants, so long as Lower Area receives the water to which it is entitled under this Judgment and there is compliance with all of its provisions.

5. Physical Solution. The Court hereby declares the following physical solution to be a fair and equitable basis for satisfaction of all said rights in the aggregate between Lower Area and Upper Area. The parties are hereby ordered and directed to comply with this Physical Solution and such compliance shall constitute full and complete satisfaction of the rights declared in

Paragraph 4 hereof.

(a) General Format. In general outline, SBVMWD shall be responsible for the delivery of an average annual amount of Base Flow at Riverside Narrows. CBMWD and WMWD shall jointly be responsible for an average annual amount of Base Flow at Prado. Insofar as Lower Area claimants are concerned, Upper Area water users and other entities may engage in unlimited water conservation activities, including spreading, impounding and other methods, in the area above Prado Reservoir, so long as Lower Area receives the water to which it is entitled under the Judgment and there is compliance with all of its provisions. Lower Area water users and other entities may make full conservation use of Prado Dam and reservoir, subject only to flood control use.

(b) Obligation of SBVMWD. SBVMWD shall be responsible for an average annual Adjusted Base Flow of 15,250 acre feet at Riverside Narrows. A continuing account, as described in Exhibit B, shall be maintained of actual Base Flow at Riverside Narrows, with all adjustments thereof and any cumulative debit or credit. Each year the obligation to provide Base Flow shall be subject to the following:

(1) Minimum Annual Quantities. Without regard to any cumulative credits, or any adjustment for quality for the current Water Year under subparagraph (2) hereof, SBVMWD each year shall be responsible at Riverside Narrows for not less than 13,420 acre feet of Base Flow plus one-third of any cumulative debit; provided, however, that for any year

commencing on or after October 1, 1986, when there is no cumulative debit, or for any year prior to 1986 whenever the cumulative credit exceeds 10,000 acre feet, said minimum shall be 12,420 acre feet.

(2) Adjustment for Quality. The amount of Base Flow at Riverside Narrows received during any year shall be subject to adjustment based upon the weighted average annual TDS in such Base Flow, as follows:

If the Weighted Average TDS in Base Flow at Riverside Narrows is:	Then the Adjusted Base Flow shall be determined by the formula:
Greater than 700 ppm	$Q - \frac{11}{15,250} Q\ (TDS-700)$
600 ppm - 700 ppm	Q
Less than 600 ppm	$Q + \frac{11}{15,250} Q\ (600-TDS)$

Where: Q = Base Flow actually received.

(3) Periodic Reduction of Cumulative Debit. At least once in any ten (10) consecutive years subsequent to October 1, 1976, SBVMWD shall provide sufficient quantities of Base Flow at Riverside Narrows to discharge completely any cumulative debits. Any cumulative credits shall remain on the books of account until used to offset any subsequent debits, or until otherwise disposed of by SBVMWD.

(c) Obligation of CBMWD and WMWD. CBMWD and WMWD shall be responsible for an average annual Adjusted Base Flow of 42,000 acre feet at Prado. A continuing account, as described in Exhibit B, shall

(l) TDS -- Total dissolved solids determined as set forth in Exhibit B.

(m) Water Year -- The period from October 1 to the following September 30. Where reference is made herein to "year" or "annual", such terms shall be construed as referring to Water Year, unless the context indicates otherwise.

(n) Adjusted Base Flow -- Actual Base Flow in each year adjusted for quality as provided hereinbelow. Compliance with the respective obligations under Paragraph 5 shall be measured by the Adjusted Base Flow.

4. Declaration of Rights. Substantially all of the parties to this action, whether situate in Upper Area or Lower Area have or claim rights to the use of a portion of the water supply of the Santa Ana River system. In the aggregate, water users and other entities in Lower Area have rights, as against all Upper Area claimants, to receive an average annual supply of 42,000 acre feet of Base Flow at Prado, together with the right to all Storm Flow reaching Prado Reservoir. Water users and other entities in Upper Area have rights in the aggregate, as against all Lower Area claimants, to divert, pump, extract, conserve, store and use all surface and ground water supplies originating within Upper Area without interference or restraint by Lower Area claimants, so long as Lower Area receives the water to which it is entitled under this Judgment and there is compliance with all of its provisions.

5. Physical Solution. The Court hereby declares the following physical solution to be a fair and equitable basis for satisfaction of all said rights in the aggregate between Lower Area and Upper Area. The parties are hereby ordered and directed to comply with this Physical Solution and such compliance shall constitute full and complete satisfaction of the rights declared in

Paragraph 4 hereof.

(a) General Format. In general outline, SBVMWD shall be responsible for the delivery of an average annual amount of Base Flow at Riverside Narrows. CBMWD and WMWD shall jointly be responsible for an average annual amount of Base Flow at Prado. Insofar as Lower Area claimants are concerned, Upper Area water users and other entities may engage in unlimited water conservation activities, including spreading, impounding and other methods, in the area above Prado Reservoir, so long as Lower Area receives the water to which it is entitled under the Judgment and there is compliance with all of its provisions. Lower Area water users and other entities may make full conservation use of Prado Dam and reservoir, subject only to flood control use.

(b) Obligation of SBVMWD. SBVMWD shall be responsible for an average annual Adjusted Base Flow of 15,250 acre feet at Riverside Narrows. A continuing account, as described in Exhibit B, shall be maintained of actual Base Flow at Riverside Narrows, with all adjustments thereof and any cumulative debit or credit. Each year the obligation to provide Base Flow shall be subject to the following:

(1) Minimum Annual Quantities. Without regard to any cumulative credits, or any adjustment for quality for the current Water Year under subparagraph (2) hereof, SBVMWD each year shall be responsible at Riverside Narrows for not less than 13,420 acre feet of Base Flow plus one-third of any cumulative debit; provided, however, that for any year

commencing on or after October 1, 1986, when there is no cumulative debit, or for any year prior to 1986 whenever the cumulative credit exceeds 10,000 acre feet, said minimum shall be 12,420 acre feet.

(2) Adjustment for Quality. The amount of Base Flow at Riverside Narrows received during any year shall be subject to adjustment based upon the weighted average annual TDS in such Base Flow, as follows:

If the Weighted Average TDS in Base Flow at Riverside Narrows is:	Then the Adjusted Base Flow shall be determined by the formula:
Greater than 700 ppm	$Q - \frac{11}{15,250} Q (TDS-700)$
600 ppm - 700 ppm	Q
Less than 600 ppm	$Q + \frac{11}{15,250} Q (600-TDS)$

Where: Q = Base Flow actually received.

(3) Periodic Reduction of Cumulative Debit. At least once in any ten (10) consecutive years subsequent to October 1, 1976, SBVMWD shall provide sufficient quantities of Base Flow at Riverside Narrows to discharge completely any cumulative debits. Any cumulative credits shall remain on the books of account until used to offset any subsequent debits, or until otherwise disposed of by SBVMWD.

(c) Obligation of CBMWD and WMWD. CBMWD and WMWD shall be responsible for an average annual Adjusted Base Flow of 42,000 acre feet at Prado. A continuing account, as described in Exhibit B, shall

be maintained of actual Base Flow at Prado, with all adjustments thereof and any cumulative debit or credit. Each year the obligation to provide Base Flow shall be subject to the following:

(1) Minimum Annual Quantities. Without regard to any cumulative credits, or any adjustments for quality for the current Water Year under subparagraph (2) hereof, CBMWD and WMWD each year shall be responsible for not less than 37,000 acre feet of Base Flow at Prado, plus one-third of any cumulative debit; provided, however, that for any year commencing on or after October 1, 1986, when there is no cumulative debit, or for any year prior to 1986 whenever the cumulative credit exceeds 30,000 acre feet, said minimum shall be 34,000 acre feet.

(2) Adjustment for Quality. The amount of Base Flow at Prado received during any year shall be subject to adjustment based upon the weighted average annual TDS in Base Flow and Storm Flow at Prado as follows:

If the Weighted Average TDS in Base Flow and Storm Flow at Prado is:	Then the Adjusted Base Flow shall be determined by the formula:
Greater than 800 ppm	$Q - \frac{35}{42,000} Q\ (TDS-800)$
700 ppm - 800 ppm	Q
Less than 700 ppm	$Q + \frac{35}{42,000} Q\ (700-TDS)$

Where: Q = Base Flow actually received.

(3) Periodic Reduction of Cumulative Debit. At least once in ten (10) consecutive years subsequent to October 1, 1976, CBMWD and WMWD shall

provide sufficient quantities of Base Flow at Prado to discharge completely any cumulative debits. Any cumulative credits shall remain on the books of account until used to offset any subsequent debits, or until otherwise disposed of by CBMWD and WMWD.

(d) Inter-basin Export. Upper Districts are hereby restrained and enjoined from exporting water from Lower Area to Upper Area, directly or indirectly. OCWD is enjoined and restrained from pumping, producing and exporting or directly or indirectly causing water to flow from Upper to Lower Area, except as to salvage of evapo-transpiration losses, as follows: OCWD owns certain lands within and above Prado Reservoir on which it has or claims certain rights to salvage evapo-transpiration losses by pumping or otherwise. Pumping for said salvage purposes shall not exceed 5,000 acre feet of ground water in any water year. Only the actual net salvage, as determined by the Watermaster, shall be excluded from Base Flow.

(e) Inter-basin Acquisition of Rights. The acquisition by Upper Districts or other Upper Area entities of Lower Area water rights shall in no way affect or reduce Lower Area's entitlement; and the acquisition of Upper Area water rights by OCWD or other Lower Area entities shall be deemed to be included within the aggregate entitlement of Lower Area and shall not increase said entitlement.

(f) Effective Date. Obligations under this physical solution shall accrue from and after October 1, 1970.

6. Prior Adjudications. So long as SBVMWD is in

commencing on or after October 1, 1986, when there is no cumulative debit, or for any year prior to 1986 whenever the cumulative credit exceeds 10,000 acre feet, said minimum shall be 12,420 acre feet.

(2) Adjustment for Quality. The amount of Base Flow at Riverside Narrows received during any year shall be subject to adjustment based upon the weighted average annual TDS in such Base Flow, as follows:

If the Weighted Average TDS in Base Flow at Riverside Narrows is:	Then the Adjusted Base Flow shall be determined by the formula:
Greater than 700 ppm	$Q - \frac{11}{15,250} Q\ (TDS-700)$
600 ppm - 700 ppm	Q
Less than 600 ppm	$Q + \frac{11}{15,250} Q\ (600-TDS)$

Where: Q = Base Flow actually received.

(3) Periodic Reduction of Cumulative Debit. At least once in any ten (10) consecutive years subsequent to October 1, 1976, SBVMWD shall provide sufficient quantities of Base Flow at Riverside Narrows to discharge completely any cumulative debits. Any cumulative credits shall remain on the books of account until used to offset any subsequent debits, or until otherwise disposed of by SBVMWD.

(c) Obligation of CBMWD and WMWD. CBMWD and WMWD shall be responsible for an average annual Adjusted Base Flow of 42,000 acre feet at Prado. A continuing account, as described in Exhibit B, shall

be maintained of actual Base Flow at Prado, with all adjustments thereof and any cumulative debit or credit. Each year the obligation to provide Base Flow shall be subject to the following:

(1) Minimum Annual Quantities. Without regard to any cumulative credits, or any adjustments for quality for the current Water Year under subparagraph (2) hereof, CBMWD and WMWD each year shall be responsible for not less than 37,000 acre feet of Base Flow at Prado, plus one-third of any cumulative debit; provided, however, that for any year commencing on or after October 1, 1986, when there is no cumulative debit, or for any year prior to 1986 whenever the cumulative credit exceeds 30,000 acre feet, said minimum shall be 34,000 acre feet.

(2) Adjustment for Quality. The amount of Base Flow at Prado received during any year shall be subject to adjustment based upon the weighted average annual TDS in Base Flow and Storm Flow at Prado as follows:

If the Weighted Average TDS in Base Flow and Storm Flow at Prado is:	Then the Adjusted Base Flow shall be determined by the formula:
Greater than 800 ppm	$Q - \frac{35}{42,000} Q\ (TDS-800)$
700 ppm - 800 ppm	Q
Less than 700 ppm	$Q + \frac{35}{42,000} Q\ (700-TDS)$

Where: Q = Base Flow actually received.

(3) Periodic Reduction of Cumulative Debit. At least once in ten (10) consecutive years subsequent to October 1, 1976, CBMWD and WMWD shall

provide sufficient quantities of Base Flow at Prado to discharge completely any cumulative debits. Any cumulative credits shall remain on the books of account until used to offset any subsequent debits, or until otherwise disposed of by CBMWD and WMWD.

(d) Inter-basin Export. Upper Districts are hereby restrained and enjoined from exporting water from Lower Area to Upper Area, directly or indirectly. OCWD is enjoined and restrained from pumping, producing and exporting or directly or indirectly causing water to flow from Upper to Lower Area, except as to salvage of evapo-transpiration losses, as follows: OCWD owns certain lands within and above Prado Reservoir on which it has or claims certain rights to salvage evapo-transpiration losses by pumping or otherwise. Pumping for said salvage purposes shall not exceed 5,000 acre feet of ground water in any water year. Only the actual net salvage, as determined by the Watermaster, shall be excluded from Base Flow.

(e) Inter-basin Acquisition of Rights. The acquisition by Upper Districts or other Upper Area entities of Lower Area water rights shall in no way affect or reduce Lower Area's entitlement; and the acquisition of Upper Area water rights by OCWD or other Lower Area entities shall be deemed to be included within the aggregate entitlement of Lower Area and shall not increase said entitlement.

(f) Effective Date. Obligations under this physical solution shall accrue from and after October 1, 1970.

6. Prior Adjudications. So long as SBVMWD is in

compliance with the terms of the physical solution herein, OCWD is enjoined and restrained from enforcing the judgments listed below against SBVMWD or any entities within or partially within SBVMWD which have stipulated to accept and adopt such physical solution. So long as WMWD and CBMWD are in compliance with the terms of the physical solution, OCWD is enjoined and restrained from enforcing the judgments listed below against WMWD and CBMWD or any entities within or partially within WMWD or CBMWD which have stipulated to accept and adopt such physical solution.

(a) The Irvine Company, plaintiff, Orange County Water District, intervenor, vs. San Bernardino Valley Water Conservation District, et al., defendants, U. S. Dist. Ct., S.D. Cal. Civ. No. Y-36-M, judgments entered September 11, 1942 (Judgment Book 11 page 134), and recorded Book 1540 page 251 and Book 1541 page 85, Official Records of San Bernardino County.

(b) Orange County Water District vs. City of Riverside, et al., San Bernardino Superior Court No. 84671.

7. Watermaster. The Watermaster, when appointed by the Court, shall administer and enforce the provisions of this Judgment and the instructions and subsequent orders of this Court.

(a) Composition, Nomination and Appointment. The Watermaster shall consist of a committee composed of five (5) persons. CBMWD, WMWD and SBVMWD shall each have the right to nominate one representative and OCWD shall have the right to nominate two (2) representatives to the Watermaster committee. Each such nomination shall be made in writing, served upon the other parties to the Stipulation for this Judgment and filed with the Court. Said Watermaster representatives shall be appointed by and serve at

the pleasure of and until further order of this Court.

(b) Watermaster Determinations. Each and every finding and determination of the Watermaster shall be made in writing certified to be by unanimous action of all members of the Watermaster Committee. In the event of failure or inability of said Watermaster Committee to reach unanimous agreement, the fact, issue, or determination in question shall forthwith be certified to this Court by the Watermaster, and after due notice to the parties and opportunity for hearing, said matter shall be determined by order of this Court.

(c) Annual Report. The Watermaster shall report to the Court and to each party in writing not more than five (5) months after the end of each Water Year, each of the items required by Paragraph 4 of the Engineering Appendix, Exhibit B hereto, and such other items as the parties may mutually request or the Watermaster may deem to be appropriate. All of the books and records of the Watermaster which are used in the preparation of, or are relevant to, such reported data, determinations and reports shall be open to inspection by the parties to the Stipulation for Judgment herein.

(d) Watermaster Service Expenses. The fees, compensation and expenses of each representative on the Watermaster shall be borne by the district which nominated such person. All other Watermaster service costs and expenses shall be borne by the parties in the following proportions:

OCWD - 40%

CBMWD - 20%

SBVMWD - 20%

WMWD - 20%

The Watermaster may from time to time in its discretion require advances of operating capital from the parties in said proportions.

8. Continuing Jurisdiction of the Court. Full jurisdiction, power and authority are retained and reserved by the Court for the purpose of enabling the Court, upon application of any party or of the Watermaster by motion and upon at least 30 days' notice thereof, and after hearing thereon:

(a) To make such further or supplemental orders or directions as may be necessary or appropriate for the construction, enforcement or carrying out of this Judgment, and

(b) To modify, amend or amplify any of the provisions of this Judgment whenever substantial changes or developments affecting the physical, hydrological or other conditions dealt with herein may, in the Court's opinion, justify or require such modification, amendment or amplification; provided, however, that no such modification, amendment or amplification shall change or alter (1) the average annual obligation of CBMWD and WMWD for delivery of 42,000 acre feet of Base Flow per year at Prado, (2) the average annual obligation of SBVMWD for delivery of 15,250 acre feet of Base Flow per year at Riverside Narrows, (3) the respective minimum Base Flows at Riverside Narrows and Prado, nor (4) the right of the parties to this Judgment or of those who stipulate to accept and adopt the physical solution herein to conserve or store flows.

9. Notices. All notices, requests, objections, reports and other papers permitted or required by the terms of this

Judgment shall be given or made by written document and shall be served by mail on each party and its attorney entitled to notice and where required or appropriate, on the Watermaster. For all purposes of this paragraph, the mailing address of each party and attorney entitled to notice shall be that set forth below its signature in the Stipulation for Judgment, until changed as provided below. If any party or attorney for a party desires to change its designation of mailing address, it shall file a written notice of such change with the Clerk of this Court and shall serve a copy thereof by mail on the Watermaster. Upon receipt of any such notice, the Watermaster shall promptly give written notice thereof. Watermaster addresses for notice purposes shall be as specified in the orders appointing each representative on the Watermaster.

10. Successors. No party shall dissolve, nor shall it abandon or transfer all or substantially all of its powers or property, without first providing for its obligations under this Judgment to be assumed by a successor public agency, with the powers and resources to perform hereunder. Any such successor shall be approved by the Court after notice to all parties and an opportunity for hearing.

11. Future Actions. In the event that any Lower Area claimant shall in the future obtain from any court of competent jurisdiction a decree awarding to such claimant a right to receive a stated amount of water from the Upper Area for use in the Lower Area, any water delivered pursuant to such decree shall be considered as part of Base Flow. In the event that the relief obtained by any such claimant is in the form of a restriction imposed upon production and the use of water in Upper Area, rather than a right to receive a stated amount of water, then notwithstanding the proviso in Paragraph 8, any Upper District may apply to the Court to modify the physical solution herein.

12. Costs. None of the parties shall recover any costs from any other party.

Dated: April 17, 1969

Judge

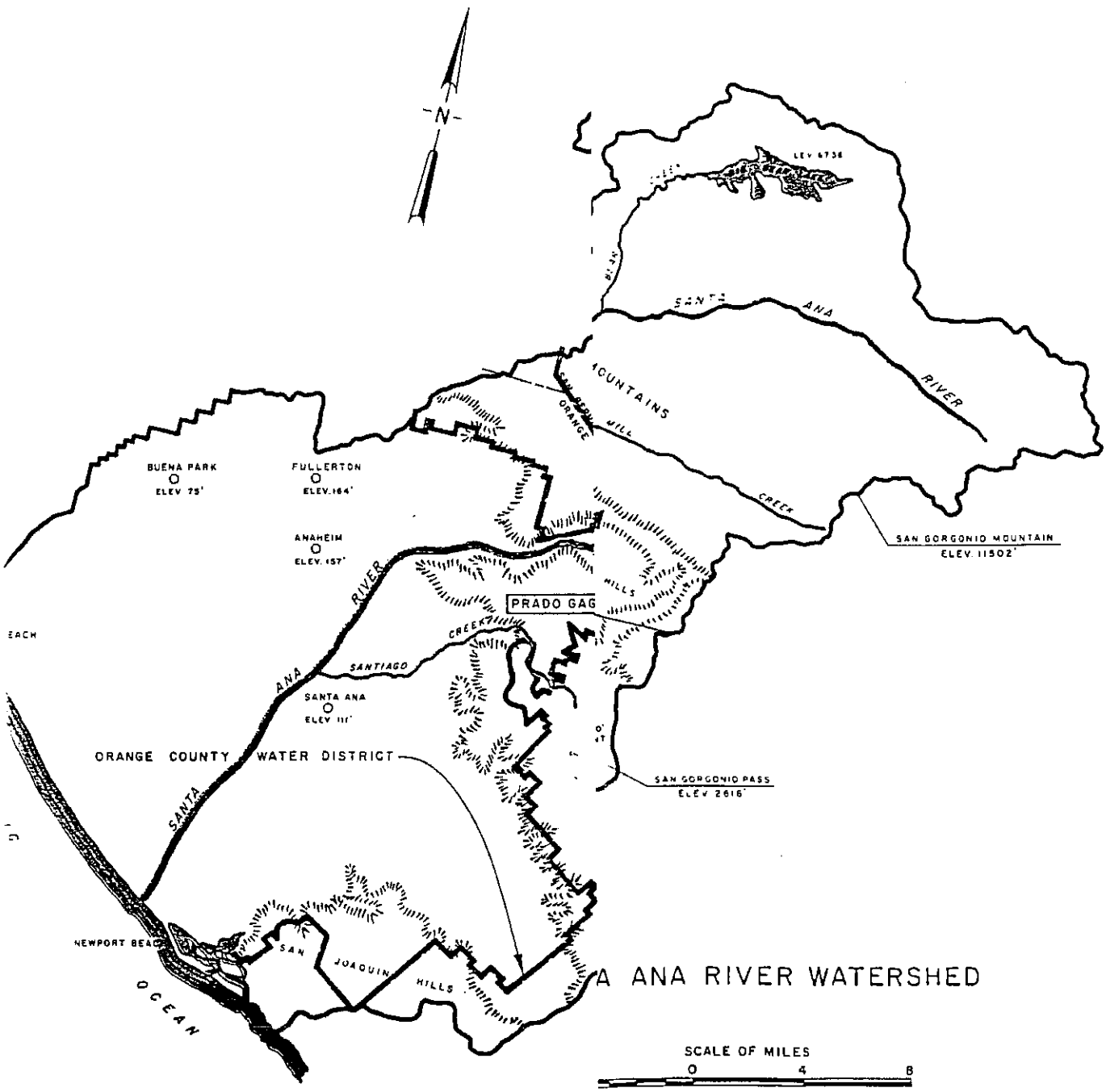

N
SANTA ANA RIVER
MOUNTAINS
ORANGE
HILL
CREEK
SAN GORGONIO MOUNTAIN
ELEV. 11502'
BUENA PARK
ELEV 75'
FULLERTON
ELEV. 164'
ANAHEIM
ELEV. 157'
SANTA ANA
ELEV 111'
SANTIAGO
CREEK
PRADO GAG
HILLS
ORANGE COUNTY WATER DISTRICT
SAN GORGONIO PASS
ELEV 2616'
NEWPORT BEA
SAN JOAQUIN HILLS
OCEAN
A ANA RIVER WATERSHED
SCALE OF MILES
0 4 8

EXHIBIT A

ENGINEERING APPENDIX

The purpose of the Engineering Appendix is to establish the basis for measurements, calculations and determinations required in the operation of the physical solution.

1. Measurements.

In administering the physical solution, it will be necessary to determine the quantity and quality of stream flow and flow in pipelines or other conveyance facilities at several points along the Santa Ana River. Watermaster shall make, or obtain from United States Geological Survey (USGS), flood control districts or other entities, all measurements necessary for making the determinations required by the Judgment.

a. Change in Measuring Device or Location. If any measuring device used or useful in making such determinations is inoperative, abandoned, changed or moved, Watermaster shall estimate the quantity that would have been measured at the station had it been operative at its original location, or may use a substitute device or location.

b. Erroneous Measurement. If Watermaster determines there is an error in any measurement or record, he may utilize his estimate in lieu of said measurement or record.

c. Preliminary Records. Watermaster may utilize preliminary records of measurement. If revisions are subsequently made in the records, Watermaster may reflect such changes in subsequent accounting.

2. Determination of Flow Components.

Since the records available only provide data on the total quantity of surface flow and since storm runoff occurs during and following periods of rainfall, Watermaster must determine what portion of total measured surface flow at Prado and at Riverside

Narrows is Storm Flow and what portion is Base Flow.

Under paragraph 3(k) of the Judgment, certain categories of water are to be included or excluded from Base Flow. As such waters may or may not be measured by the USGS gages at Prado and/or Riverside Narrows, Watermaster must make appropriate adjustments to account for the same.

The parties, in reaching the physical solution provided for in the Judgment, used certain procedures to separate or scalp the Storm Flow from the total measured surface flow and to determine Base Flow. These procedures are reflected in the Work Papers of the engineers, bound copies of which shall be filed with the Watermaster. Watermaster shall use either the same procedures or procedures which will give equivalent results, giving due consideration to all sources of the surface flow measured at the gages, to changes in the amounts and the proportionate contributions of each source, and to changes in location of measuring points.

3. Water Quality Determinations.

It will be necessary to determine for each water year the weighted average Total Dissolved Solids (TDS) content of the Base Flow at Riverside Narrows and of the total flow at Prado.

TDS shall be determined by the method set forth under "B. Filterable Residual", starting on page 245 of Standard Methods for Examination of Water and Wastewater, Twelfth Edition, 1965, Library of Congress Catalog Card No. 55-1979. The drying temperature shall be 180° centigrade. Milligrams per liter (mg/l) shall be deemed equivalent to parts per million (ppm) for purposes of the Judgment.

a. Procedure at Prado.

(1) Determinations of the electrical conductivity at 25°C. near the gaging station at Prado shall be made or obtained.

(2) A sufficient number of determinations of TDS of the flow at the same point shall be

made or obtained to provide the relationship between TDS and electrical conductivity for all rates of flow. This relationship shall be used to determine the average daily TDS weighted by flow, for each day of the year. During periods of Storm Flow, samples shall be taken at least daily.

(3) The annual weighted average TDS of all waters passing Prado shall be determined. Any direct deliveries or flows which are included or excluded in the definition of Base Flow as set forth in paragraph 3(k) of the Judgment, shall be similarly included or excluded in the calculation of the annual weighted average TDS.

b. Procedure at Riverside Narrows. The procedure to adjust Base Flow at Riverside Narrows shall be the same as that outlined in paragraph a. above, except that the annual weighted average TDS of Base Flow only is to be determined. Therefore during periods of Storm Flow, the TDS of Base Flow shall be estimated.

4. Accounting.

Utilizing the appropriate obligations set forth in the Judgment and the measurements, calculations and determinations described in this Engineering Appendix, Watermaster shall maintain a continuing account for each year of the following items.

a. Prado Accounting.

(1) Base Flow at Prado. See Paragraph 2 of this Engineering Appendix and Paragraph 3(k) of the Judgment.

(2) Annual Weighted TDS of Total Flow at Prado. See Paragraph 3a of this Engineering Appendix.

(3) Annual Adjusted Base Flow. See Paragraph 5(c)(2) of the Judgment and items (1) and (2) above.

(4) Cumulative Adjusted Base Flow. This is the cumulation of quantities shown in item (3) above.

(5) Cumulative Entitlement of OCWD at Prado. This is the product of 42,000 acre feet multiplied by the number of years after October 1, 1970.

(6) Cumulative Credit or Debit. This is item (4) minus item (5).

(7) One-third of Cumulative Debit. This is equal to one-third of any cumulative debit shown in item (6) above.

(8) Minimum Required Base Flow in Following Year. This is the minimum quantity of Base Flow at Prado which CBMWD and WMWD must jointly cause to occur in the following year determined in accordance with paragraph 5(c)(1) of the Judgment and utilizing item (7) above.

b. Riverside Narrows Accounting.

(1) Base Flow at Riverside Narrows. See Paragraph 2 of this Engineering Appendix and Paragraph 3(k) of the Judgment.

(2) Annual Weighted TDS of Base Flow at Riverside Narrows. See Paragraph 3b of this Engineering Appendix.

(3) Annual Adjusted Base Flow. See

Paragraph 5(b)(2) of the Judgment and items (1) and (2) above.

(4) Cumulative Adjusted Base Flow. This is the cumulation of quantities shown in item (3) above.

(5) Cumulative Entitlement of CBMWD and WMWD at Riverside Narrows. This is the product of 15,250 acre feet multiplied by the number of years after October 1, 1970.

(6) Cumulative Credit or Debit. This is item (4) minus item (5).

(7) One-third of Cumulative Debit. This is equal to one-third of any cumulative debit shown in item (6) above.

(8) Minimum Required Base Flow in Following Year. This is the minimum quantity of Base Flow at Riverside Narrows which SBVMWD must cause to occur in the following year determined in accordance with Paragraph 5(b)(1) of the Judgment and utilizing item (7) above.

2015 San Bernardino Valley RUWMP

Appendix I

FILED
RIV. RIVERSIDE COUNTY

APR 17 1969

DONALD D. MCLAUGHLIN, Clerk
By _____ Deputy

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF RIVERSIDE

WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY, a municipal water district; CITY OF RIVERSIDE, a municipal corporation; THE GAGE CANAL COMPANY, a corporation; AGUA MANSA WATER COMPANY, a corporation, MEEKS & DALEY WATER COMPANY, a corporation; RIVERSIDE HIGHLAND WATER COMPANY, a corporation, and THE REGENTS OF THE UNIVERSITY OF CALIFORNIA,

Plaintiffs,

-vs-

(A) EAST SAN BERNARDINO COUNTY WATER DISTRICT, et al.,

Defendants

No. 74726

JUDGMENT

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APPENDIX A -- Map showing San Bernardino Basin Area, Colton Basin Area, and Riverside Basin Area situated within San Bernardino County; Riverside Basin Area within Riverside County; Bunker Hill Dike; Riverside Narrows; and

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Boundaries of San Bernardino Valley Municipal Water District & Western Municipal Water District of Riverside County

APPENDIX B -- Extractions by Plaintiffs from San Bernardino Basin Area.

APPENDIX C -- Exports for Use on Lands not Tributary to Riverside Narrows

APPENDIX D -- Miscellaneous Data

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RECITALS

(a) Complaint. The complaint in this action was filed by certain parties exporting water from the area defined herein as the San Bernardino Basin Area for use within Western, and sought a general adjudication of water rights.

(b) Orange County Water District Action. Subsequently the Orange County Water District filed an action for the adjudication of the water rights of substantially all water users in the area tributary to Prado Dam in the Santa Ana River Watershed. A decree of physical solution has been entered in such action whereby individual water users were dismissed, and San Bernardino Valley and Western assumed responsibility for the deliveries of certain flows at Riverside Narrows and Prado respectively.

(c) Physical Solution. The Judgment herein will further implement the physical solution in the Orange County Water District action, as well as determine the rights of the hereinafter named Plaintiffs to extract water from the San Bernardino Basin Area, and provide for replenishment of the area above Riverside Narrows. Such Judgment is fair and equitable, in the best interests of the parties, and in furtherance of the water policy of the State. San Bernardino Valley has the statutory power and resources to effectuate this Judgment and accordingly the other defendants may be dismissed.

(d) Stipulation. The parties named herein through their respective counsel have proposed and filed a written stipulation agreeing to the making and entry of this Judgment. By reason of such stipulation, and good cause appearing

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therefor,

IT IS HEREBY ORDERED, ADJUDGED AND DECREED as follows:

I

ACTIVE PARTIES

(a) The parties to this Judgment are as follows:

(1) Plaintiff Western Municipal Water District of Riverside County, a California municipal water district, herein often called "Western", appearing and acting pursuant to Section 71751 of the Water Code;

(2) Plaintiff City of Riverside, a municipal corporation;

(3) Plaintiffs Riverside Highland Water Company, Agua Mansa Water Company and Meeks & Daley Water Company, each of which is a mutual water company and a California corporation;

(4) Plaintiff The Regents of the University of California, a California public corporation;

(5) Defendant San Bernardino Valley Municipal Water District, a California municipal water district, herein often called "San Bernardino Valley", appearing and acting pursuant to Section 71751 of the Water Code;

(b) This Judgment shall inure to the benefit of, and be binding upon, the successors and assigns of the parties.

II

DISMISSED PARTIES

All parties other than those named in the preceding Paragraph I are dismissed without prejudice.

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III

PRIOR JUDGMENTS

(a) The Judgment dated and entered on May 13, 1959, in that certain action filed in the Superior Court of the State of California in and for the County of San Bernardino, entitled and numbered "San Bernardino Valley Water Conservation District, a State Agency, Plaintiff v. Riverside Water Company, a corporation, et al., Defendants", No. 97031, is superseded effective January 1, 1971, and for so long as this Judgment remains in effect as to any party hereto that was a party to that action, and as to any party hereto that is a successor in interest to the rights determined in that action.

(b) The Judgment dated June 23, 1965, and entered on April 21, 1966, in that certain action filed in the Superior Court of the State of California in and for the County of San Bernardino entitled and numbered "San Bernardino Valley Water Conservation District, a State Agency, Plaintiff, v. Riverside Water Company, a corporation, et al., Defendants," No. 111614, is superseded effective January 1, 1971, and for so long as this Judgment remains in effect as to any party hereto that was a party to that action, and as to any party hereto that is a successor in interest to any rights determined in that action.

(c) As used in this Paragraph III only, "party" includes any person or entity which stipulates with the parties hereto to accept this Judgment.

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IV

DEFINITIONS

The following ground water basins and tributary areas are situated within the Santa Ana River watershed upstream from Riverside Narrows and are tributary thereto, and their approximate locations and boundaries for purposes of this Judgment are shown upon the map attached hereto as Appendix "A": San Bernardino Basin Area (the area above Bunker Hill Dike, but excluding certain mountainous regions and the Yucaipa, San Timoteo, Oak Glen and Beaumont Basins); Colton Basin Area, Riverside Basin Area within San Bernardino County, and Riverside Basin Area within Riverside County.

As used herein the following terms shall have the meanings herein set forth:

(a) Bunker Hill Dike - The San Jacinto Fault, located approximately as shown on Appendix "A", and forming the principal downstream boundary of the San Bernardino Basin Area.

(b) Riverside Narrows - That bedrock narrows in the Santa Ana River indicated on Appendix "A".

(c) Extractions - Any form of the verb or noun shall include pumping, diverting, taking or withdrawing water, either surface or subsurface, by any means whatsoever, except extractions for hydroelectric generation to the extent that such flows are returned to the stream, and except for diversions for replenishment.

(d) Natural Precipitation - Precipitation which falls naturally in the Santa Ana River watershed.

(e) Imported Water - Water brought into the Santa Ana River watershed from sources of origin outside such watershed.

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(f) Replenishment - Artificial recharge of the ground water body achieved through the spreading or retention of water for the purpose of causing it to percolate and join the underlying ground water body, or injection of water into the ground water resources by means of wells; provided that as used with reference to any obligation of Western to replenish the Riverside Basin Area in Riverside County, the term replenishment shall include any water caused to be delivered by Western for which credit is received by San Bernardino Valley against its obligation under the Orange County Judgment to provide base flow at Riverside Narrows.

(g) Safe Yield - Safe yield is that maximum average annual amount of water that could be extracted from the surface and subsurface water resources of an area over a period of time sufficiently long to represent or approximate long-time mean climatological conditions, with a given areal pattern of extractions, under a particular set of physical conditions or structures as such affect the net recharge to the ground water body, and with a given amount of usable underground storage capacity, without resulting in long-term, progressive lowering of ground water levels or other undesirable result. In determining the operational criteria to avoid such adverse results, consideration shall be given to maintenance of adequate ground water quality, subsurface outflow, costs of pumping, and other relevant factors.

The amount of safe yield is dependent in part upon the amount of water which can be stored in and used from the ground water reservoir over a period of normal water supply under a given set of conditions. Safe yield is thus related to factors which influence or control ground water recharge, and

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to the amount of storage space available to carry over recharge occurring in years of above average supply to years of deficient supply. Recharge, in turn, depends on the available surface water supply and the factors influencing the percolation of that supply to the water table.

Safe yield shall be determined in part through the evaluation of the average net groundwater recharge which would occur if the culture of the safe yield year had existed over a period of normal native supply.

(h) Natural Safe Yield - That portion of the safe yield of the San Bernardino Basin Area which could be derived solely from natural precipitation in the absence of imported water and the return flows therefrom, and without contributions from new conservation. If in the future any natural runoff tributary to the San Bernardino Basin Area is diverted away from that Basin Area so that it is not included in the calculation of natural safe yield, any replacement made thereof by San Bernardino Valley or entities within it from imported water shall be included in such calculation.

(i) New Conservation - Any increase in replenishment from natural precipitation which results from operation of works and facilities not now in existence, other than those works installed and operations which may be initiated to offset losses caused by increased flood control channelization.

(j) Year - A calendar year from January 1 through December 31. The term "annual" shall refer to the same period of time.

(k) Orange County Judgment - The final judgment in Orange County Water District v. City of Chino, et al., Orange County Superior Court No. 117628, as it may from time to

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time be modified.

(l) Return Flow - That portion of the water applied for use in any particular ground water basin which subsequently reaches the ground water body in that basin.

(m) Five Year Period - a period of five consecutive years.

V

EXTRACTIONS FROM THE SAN BERNARDINO BASIN AREA

(a) For Use by Plaintiffs. The average annual extractions from the San Bernardino Basin Area delivered for use in each service area by each Plaintiff for the five year period ending with 1963 are hereby determined to be as set forth in Table B-1 of Appendix "B". The amount for each such Plaintiff delivered for use in each service area as set forth in Table B-1 shall be designated, for purposes of this Judgment, as its "base right" for such service area.

(b) For Use by Others. The total actual average annual extractions from the San Bernardino Basin Area by entities other than Plaintiffs for use within San Bernardino County for the five year period ending with 1963 are assumed to be 165,407 acre feet; the correct figure shall be determined by the Watermaster as herein provided.

VI

SAN BERNARDINO BASIN AREA RIGHTS AND REPLENISHMENT

(a) Determination of Natural Safe Yield. The natural safe yield of the San Bernardino Basin Area shall be computed by the Watermaster, reported to and determined initially by supplemental order of this Court, and thereafter

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shall be subject to the continuing jurisdiction thereof.

(b) Annual Adjusted Rights of Plaintiffs.

1. The annual "adjusted right" of each Plaintiff to extract water from the San Bernardino Basin Area for use in each service area designated in Table B-1 shall be equal to the sum of the following:

(a) its base right for such service area, until the natural safe yield of the San Bernardino Basin Area is determined, and thereafter its percentage of such natural safe yield determined by the methods used in Table B-2; and (b) an equal percentage for each service area of any new conservation, provided the conditions of the subparagraph 2 below have been met.

2. In order that the annual adjusted right of each such Plaintiff shall include its same respective percentage of any new conservation, such Plaintiff shall pay its proportionate share of the costs thereof. Each Plaintiff shall have the right to participate in new conservation projects, under procedures to be determined by the Watermaster for notice to Plaintiffs of the planned construction of such projects. With respect to any new conservation brought about by Federal installations, the term "costs" as used herein shall refer to any local share required to be paid in connection with such project. Each Plaintiff shall make its payment at times satisfactory to the constructing agency, and new conservation shall be credited to any participating Plaintiff as such conservation is effected.

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3. In any five year period, each Plaintiff shall have the right to extract from the San Bernardino Basin Area for use in each service area designated in Table B-1 an amount of water equal to five times its adjusted right for such service area; provided, however, that extractions by each Plaintiff in any year in any service area shall not exceed such Plaintiff's adjusted right for that service area by more than 30 percent.

4. If the natural safe yield of the San Bernardino Basin Area has not been determined by January 1, 1972, the initial determination thereof shall be retroactive to that date and the rights of the Plaintiffs, and the replenishment obligation of San Bernardino Valley as hereinafter set forth, shall be adjusted as of such date. Any excess extractions by Plaintiffs shall be charged against their respective adjusted rights over the next five year period, or in the alternative, Plaintiffs may pay to San Bernardino Valley the full cost of any replenishment which it has provided as replenishment for such excess extractions. Any obligation upon San Bernardino Valley to provide additional replenishment, by virtue of such retroactive determination of natural safe yield, may also be discharged over such next five year period.

5. Plaintiffs and each of them and their agents and assigns are enjoined from extracting any more water from the San Bernardino Basin Area than is permitted under this Judgment. Changes in place

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of use of any such water from one service area to another shall not be made without the prior approval of Court upon a finding of compliance with Paragraph XV(b) of this Judgment. So long as San Bernardino Valley is in compliance with all its obligations hereunder, and Plaintiffs are allowed to extract the water provided for in this Judgment, Plaintiffs are further enjoined from bringing any action to limit the water extracted from the San Bernardino Basin Area for use within San Bernardino Valley.

6. Nothing in this Judgment shall prevent future agreements between San Bernardino Valley and Western under which additional extractions may be made from the San Bernardino Basin Area, subject to the availability of imported water not required by San Bernardino Valley, and subject to payment satisfactory to San Bernardino Valley for replenishment required to compensate for such additional extractions.

(c) San Bernardino Valley Replenishment. San Bernardino Valley shall provide imported water for replenishment of the San Bernardino Basin Area at least equal to the amount by which extractions therefrom for use within San Bernardino County exceed during any five year period the sum of: (a) five times the total average annual extractions determined under Paragraph V(b) hereof, adjusted as may be required by the natural safe yield of the San Bernardino Basin Area; and (b) any new conservation to which users within San Bernardino Valley are entitled. Such replenishment shall be

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supplied in the year following any five year period; provided that during the first five year period, San Bernardino Valley shall supply annual amounts on account of its obligations hereunder, and such amounts shall be not less than fifty percent of the gross amount of excess extractions in the previous year.

1. Against its replenishment obligation over any five year period San Bernardino Valley shall receive credit for that portion of such excess extractions that returns to the ground water of the San Bernardino Basin Area.

2. San Bernardino Valley shall also receive credit against any future replenishment obligations for all replenishment which it provides in excess of that required herein, and for any amounts which may be extracted without replenishment obligation, which in fact are not extracted.

(d) In this subparagraph (d), "person" and "entity" mean only those persons and entities, and their successors in interest, which have stipulated with the parties to this Judgment within six months after its entry to accept this Judgment.

San Bernardino Valley agrees that the base rights of persons or entities other than Plaintiffs to extract water from the San Bernardino Basin Area for use within San Bernardino Valley will be determined by the average annual quantity extracted by such person or entity during the five year period ending with 1963. After the natural safe yield of the San Bernardino Basin Area is determined hereunder, such

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base rights will be adjusted to such natural safe yield; the adjusted right of each such person or entity shall be that percentage of natural safe yield as determined hereunder from time to time which the unadjusted right of such person or entity is of the amount determined under Paragraph V(b).

San Bernardino Valley further agrees that in the event the right to extract water of any of such persons or entities in the San Bernardino Basin Area is adjudicated and legal restrictions placed on such extractions which prevent extracting of water by said persons or entities in an amount equal to their base rights, or after natural safe yield is determined, their adjusted rights, San Bernardino Valley will furnish to such persons or entities or recharge the ground water resources in the area of extraction for their benefit with imported water, without direct charge to such persons or entities therefor, so that the base rights, or adjusted rights, as the case may be, may be taken by the person or entity.

Under the provisions hereof relating to furnishing of such water by San Bernardino Valley, such persons or entities shall be entitled to extract in addition to their base rights or adjusted rights any quantities of water spread for repumping in their area of extractions, which has been delivered to them by a mutual water company under base rights or adjusted base rights included by the Watermaster under the provisions of Paragraph V (b) hereof. Extractions must be made within three years of spreading to so qualify.

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VII

WATER DISCHARGED ACROSS THE BUNKER HILL DIKE

San Bernardino Valley shall keep in force an agreement with the City of San Bernardino that the present annual quantity of municipal sewage effluent discharged across Bunker Hill Dike, assumed for all purposes herein to be 16,000 acre feet annually, shall be committed to the discharge of the downstream obligations imposed on San Bernardino Valley under this Judgment or under the Orange County Judgment, and that such effluent shall comply with the requirements of the Santa Ana River Basin Regional Water Quality Control Board in effect December 31, 1968.

VIII

EXTRACTIONS FROM COLTON BASIN AREA AND RIVERSIDE BASIN AREA IN SAN BERNARDINO COUNTY.

(a) The average annual extractions from the Colton Basin Area and that portion of the Riverside Basin Area within San Bernardino County, for use outside San Bernardino Valley, for the five year period ending with 1963 are assumed to be 3,349 acre feet and 20,191 acre feet, respectively; the correct figures shall be determined by the Watermaster as herein provided.

(b) Over any five year period, there may be extracted from each such Basin Area for use outside San Bernardino Valley, 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 20 percent, Western shall provide replenishment in the following year equal to the excess

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extractions over such 20 percent peaking allowance.

(c). To the extent that extractions from each such Basin Area for use outside San Bernardino Valley exceed the amounts specified in the next preceding Paragraph (b), Western shall provide replenishment. Except for any extractions in excess of the 20 percent peaking allowance, such replenishment shall be supplied in the year following any five year period, and shall not be from reclaimed water produced within San Bernardino Valley. Such replenishment shall also be of a quality at least equal to the water extracted from the Basin Area being recharged; provided, that water from the State Water Project shall be deemed to be of acceptable quality. Replenishment shall be supplied to the Basin Area from which any excess extractions have occurred and in the vicinity of the place of the excess extractions to the extent required to preclude influence on the water level in the three wells below designated; provided that discharge of imported water into the Santa Ana River or Warm Creek from a connection on the State Aqueduct near the confluence thereof, if released in accordance with a schedule approved by the Watermaster to achieve compliance with the objectives of this Judgment, shall satisfy any obligation of Western to provide replenishment in the Colton Basin Area, or that portion of the Riverside Basin Area in San Bernardino County, or the Riverside Basin Area in Riverside County.

(d) Extractions from the Colton Basin Area and that portion of the Riverside Basin Area within San Bernardino County, for use within San Bernardino Valley, shall not be limited. However, except for any required replenishment by Western, San Bernardino Valley shall provide the water to maintain the static water levels in the area, as determined by wells numbered

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1S 4W 21 Q3, 1S 4W 29 H1, and 1S 4W 29 Q1 at an average level no lower than that which existed in the Fall season of 1963. Such 1963 average water level is hereby determined to be 822.04 feet above sea level. In future years, the level shall be computed by averaging the lowest static water levels in each of the three wells occurring at or about the same time of the year, provided that no measurements will be used which reflect the undue influence of pumping in nearby wells, or in the three wells, or pumping from the Riverside Basin in Riverside County in excess of that determined pursuant to Paragraph IX(a) hereof.

(e) Extractions by Plaintiffs from the Colton Basin Area and the portion of the Riverside Basin Area in San Bernardino County may be transferred to the San Bernardino Basin Area if the level specified in Paragraph (d) above is not maintained, but only to the extent necessary to restore such 1963 average water level, provided that Western is not in default in any of its replenishment obligations. San Bernardino Valley shall be required to replenish the San Bernardino Basin Area in an amount equal to any extractions so transferred. San Bernardino Valley shall be relieved of responsibility toward the maintenance of such 1963 average water level to the extent that Plaintiffs have physical facilities available to accommodate such transfers of extractions, and insofar as such transfers can be legally accomplished.

(f) The Colton Basin Area and the portion of the Riverside Basin Area in San Bernardino County constitute a major source of water supply for lands and inhabitants in both San Bernardino Valley and Western, and the parties hereto have a mutual interest in the maintenance of water quality in these Basin Areas and in the preservation of such supply. If

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the water quality in such Areas, as monitored by the City of Riverside wells along the river, falls below the Objectives set therefor by the Santa Ana River Basin Regional Water Quality Control Board, the Court shall have jurisdiction to modify the obligations of San Bernardino Valley to include, in addition to its obligation to maintain the average 1963 water level, reasonable provisions for the maintenance of such water quality.

(g) The primary objectives of Paragraph VIII and related provisions are to allow maximum flexibility to San Bernardino Valley in the operation of a coordinated replenishment and management program, both above and below Bunker Hill Dike; to protect San Bernardino Valley against increased extractions in the area between Bunker Hill Dike and Riverside Narrows, which without adequate provision for replenishment might adversely affect base flow at Riverside Narrows, for which it is responsible under the Orange County Judgment; and to protect the area as a major source of ground water supply available to satisfy the historic extractions therefrom for use within Western, without regard to the method of operation which may be adopted by San Bernardino Valley for the San Bernardino Basin Area, and without regard to the effect of such operation upon the historic supply to the area below Bunker Hill Dike.

If these provisions should prove either inequitable or unworkable, the Court upon the application of any party hereto shall retain jurisdiction to modify this Judgment so as to regulate the area between Bunker Hill Dike and Riverside Narrows on a safe yield basis; provided that under such method of operation, (1) base rights shall be determined on the basis of total average annual extractions for use within San Bernardino Valley and Western, respectively, for the five year period ending

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with 1963; (2) such base rights for use in both Districts shall be subject to whatever adjustment may be required by the safe yield of the area, and in the aggregate shall not be exceeded unless replenishment therefor is provided; (3) in calculating safe yield, the outflow from the area at Riverside Narrows shall be determined insofar as practical by the base flow obligations imposed on San Bernardino Valley under the Orange County Judgment; and (4) San Bernardino Valley shall be required to provide replenishment for any deficiency between the actual outflow and the outflow obligation across Bunker Hill Dike as established by safe yield analysis using the base period of 1934 through 1960.

IX

EXTRACTIONS FROM THE PORTION OF RIVERSIDE BASIN AREA IN RIVERSIDE COUNTY WHICH IS TRIBUTARY TO RIVERSIDE NARROWS.

(a) The average annual extractions from the portion of the Riverside Basin Area in Riverside County which is tributary to Riverside Narrows, for use in Riverside County, for the five year period ending with 1963 are assumed to be 30,044 acre feet; the correct figures shall be determined by the Watermaster as herein provided.

(b) 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 20 percent, Western shall provide replenishment in the following year equal to the excess extractions over such 20 percent peaking allowance.

(c) To the extent that extractions from such Basin Area exceed the amounts specified in the next preceding

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Paragraph (b), Western shall provide replenishment. Except for any extractions in excess of the 20 percent peaking allowance, such replenishment shall be supplied in the year following any five year period, and shall be provided at or above Riverside Narrows.

(d) Western shall also provide such replenishment to offset any reduction in return flow now contributing to the base flow at Riverside Narrows, which reduction in return flow results from the conversion of agricultural uses of water within Western to domestic or other uses connected to sewage or waste disposal systems, the effluent from which is not tributary to the rising water at Riverside Narrows.

X

REPLENISHMENT TO OFFSET NEW EXPORTS OF WATER TO AREAS NOT TRIBUTARY TO RIVERSIDE NARROWS.

Certain average annual amounts of water extracted from the San Bernardino Basin Area and the area downstream therefrom to Riverside Narrows during the five year period ending in 1963 have been exported for use outside of the area tributary to Riverside Narrows and are assumed to be 50,667 acre feet annually as set forth in Table C-1 of Appendix "C"; the correct amount shall be determined by the Watermaster as herein provided. Western shall be obligated to provide replenishment at or above Riverside Narrows for any increase over such exports by Western or entities within it from such areas for use within areas not tributary to Riverside Narrows. San Bernardino Valley shall be obligated to provide replenishment for any increase over the exports from San Bernardino Valley for use in any area not within Western nor tributary to Riverside Narrows as set forth in Table C-2 of

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Appendix "C", such amounts being subject to correction by the Watermaster, or for any exports from the San Bernardino Basin Area for use in the Yucaipa, San Timoteo, Oak Glen and Beaumont Basins.

XI

REPLENISHMENT CREDITS AND ADJUSTMENT FOR QUALITY

(a) All replenishment provided by Western under Paragraph IX and all credits received against such replenishment obligation shall be subject to the same adjustments for water quality applicable to base flow at Riverside Narrows, as set forth in the Orange County Judgment.

(b) Western shall receive credit against its replenishment obligations incurred under this Judgment for the following:

1. As against its replenishment obligation under Paragraph VIII, any return flow to the Colton Basin Area or the portion of the Riverside Basin Area within San Bernardino County, respectively, resulting from any excess extractions therefrom; and as against its replenishment obligation under Paragraph IX, any return flow to the portion of the Riverside Basin Area in Riverside County, which contributes to the base flow at Riverside Narrows, resulting from any excess extractions therefrom, or from the Riverside Basin Area in San Bernardino County, or from the Colton Basin Area.

2. Subject to adjustment under Paragraph (a) hereof, any increase over the present amounts of sewage effluent discharged from

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treatment plants within Riverside County which are tributary to Riverside Narrows, and which results from the use of imported water.

3. Any replenishment which may be provided in excess of that required; any amounts which hereunder are allowed to be extracted from the Colton and Riverside Basin Areas without replenishment obligation by Western, and which in fact are not extracted; any storm flows conserved between Bunker Hill Dike and Riverside Narrows by works financed solely by Western, or entities within it, which would not otherwise contribute to base flow at Riverside Narrows; and any return flow from imported water used in Riverside County which contributes to base flow at Riverside Narrows; provided, however, that such use of the underground storage capacity in each of the above situations does not adversely affect San Bernardino Valley in the discharge of its obligations at Riverside Narrows under the Orange County Judgment, nor interfere with the accomplishment by San Bernardino Valley of the primary objectives of Paragraph VIII, as stated in Subdivision (g).

(c) The replenishment obligations of Western under this Judgment shall not apply during such times as amounts of base flow at Riverside Narrows and the amounts of water stored in the ground water resources below Bunker Hill Dike and tributary to the maintenance of such flow are found by Order of the Court to be sufficient to satisfy any obligation which San Bernardino Valley may have under this Judgment, or under the

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Orange County Judgment, and if the Court further finds by Order that during such times any such increase in pumping, changes in use or exports would not adversely affect San Bernardino Valley in the future.

(d) The replenishment obligations of San Bernardino Valley under Paragraph X of this Judgment for increase in exports from the Colton and Riverside Basin Areas within San Bernardino Valley below the Bunker Hill Dike shall not apply during such times as the amounts of water in the ground water resources of such area are found by Order of the Court to be sufficient to satisfy the obligations which San Bernardino Valley may have to Plaintiffs under this Judgment, and if the Court further finds by Order that during such times any such increases in exports would not adversely affect Plaintiffs in the future.

XII

CONVEYANCE OF WATER BY SAN BERNARDINO VALLEY TO RIVERSIDE NARROWS.

If San Bernardino Valley determines that it will convey reclaimed sewage effluent, or other water, to or near Riverside Narrows, to meet its obligations under this or the Orange County Judgment, the City of Riverside shall make available to San Bernardino Valley for that purpose any unused capacity in the former Riverside Water Company canal, and the Washington and Monroe Street storm drains, without cost except for any alterations or capital improvements which may be required, or any additional maintenance and operation costs which may result. The use of those facilities shall be subject to the requirements of the Santa Ana River Basin Regional Water Quality Control Board and of the State Health Department, and compliance

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therewith shall be San Bernardino Valley's responsibility.

XIII

WATERMASTER

(a) This Judgment and the instructions and subsequent orders of this Court shall be administered and enforced by a Watermaster. The parties hereto shall make such measurements and furnish such information as the Watermaster may reasonably require, and the Watermaster may verify such measurements and information and obtain additional measurements and information as the Watermaster may deem appropriate.

(b) The Watermaster shall consist of a committee of two persons. San Bernardino Valley and Western shall each have the right to nominate one of such persons. Each such nomination shall be made in writing, served upon the other parties to this Judgment, and filed in Court. Such person shall be appointed by and serve at the pleasure of and until further order of this Court. If either Western or San Bernardino Valley shall at any time nominate a substitute appointee in place of the last appointee to represent it, such appointee shall be appointed by the Court in place of such last appointee.

(c) Appendix "D" to this Judgment contains some of the data which have been used in preparation of this Judgment, and shall be utilized by the Watermaster in connection with any questions of interpretation.

(d) Each and every finding and determination of the Watermaster shall be made in writing certified to be by unanimous action of both members of the Watermaster committee. In the event of failure or inability of such Watermaster Committee to reach agreement, the Watermaster committee may determine to submit the dispute to a third person to be selected

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by them, or if they are unable to agree on a selection, to be selected by the Court, in which case the decision of the third person shall be binding on the parties; otherwise the fact, issue, or determination in question shall forthwith be certified to this Court by the Watermaster, and after due notice to the parties and opportunity for hearing, said matter shall be determined by order of this Court, which may refer the matter for prior recommendation to the State Water Resources Control Board. Such order of the Court shall be a determination by the Watermaster within the meaning of this Judgment.

(e) The Watermaster shall report to the Court and to each party hereto in writing not more than seven (7) months after the end of each year, or within such other time as the Court may fix, on each determination made by it pursuant to this Judgment, and such other items as the parties may mutually request or the Watermaster may deem to be appropriate. All of the books and records of the Watermaster which are used in the preparation of, or are relevant to, such reported data, determinations and reports shall be open to inspection by the parties hereto. At the request of any party this Court will establish a procedure for the filing and hearing of objections to the Watermaster's report.

(f) The fees, compensation and expenses of each person on the Watermaster shall be borne by the District which nominated such person. All other Watermaster service costs and expenses shall be borne by San Bernardino Valley and Western equally.

(g) The Watermaster shall initially compute and report to the Court the natural safe yield of the San Bernardino Basin Area, said computation to be based upon the cultural

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conditions equivalent to those existing during the five calendar year period ending with 1963.

(b) The Watermaster shall as soon as practical determine the correct figures for Paragraphs V(b), VI(b)1, VIII(a), IX(a) and X, as the basis for an appropriate supplemental order of this Court.

XIV

CONTINUING JURISDICTION OF THE COURT

(a) The Court hereby reserves continuing jurisdiction of the subject matter and parties to this Judgment, and upon application of any party, or upon its own motion, may review and redetermine, among other things, the following matters and any matters incident thereto:

1. The hydrologic condition of any one or all of the separate basins described in this Judgment in order to determine from time to time the safe yield of the San Bernardino Basin Area.

2. The desirability of appointing a different Watermaster or a permanent neutral member of the Watermaster, or of changing or more clearly defining the duties of the Watermaster.

3. The desirability of providing for increases or decreases in the extraction of any particular party because of emergency requirements or in order that such party may secure its proportionate share of its rights as determined herein.

4. The adjusted rights of the Plaintiffs as required to comply with the provisions hereof with respect to changes in the natural safe yield of the San Bernardino Basin

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Area. If such changes occur, the Court shall adjudge that the adjusted rights and replenishment obligations of each party shall be changed proportionately to the respective base rights.

5. Conforming the obligations of San Bernardino Valley under this Judgment to the terms of any new judgment hereafter entered adjudicating the water rights within San Bernardino Valley, if inconsistencies of the two judgments impose hardship on San Bernardino Valley.

6. Adjusting the figures in Paragraphs V(b), VI(b) 1, VIII(a) IX(a), and X, to conform to determination by the Watermaster.

7. Credit allowed for return flow in the San Bernardino Basin Area if water levels therein drop to the point of causing undue hardship upon any party.

8. Other matters not herein specifically set forth which might occur in the future and which would be of benefit to the parties in the utilization of the surface and ground water supply described in this Judgment, and not inconsistent with the respective rights of the parties as herein established and determined.

(b) Any party may apply to the Court under its continuing jurisdiction for any appropriate modification of this Judgment if its presently available sources of imported water are exhausted and it is unable to obtain additional supplies of imported water at a reasonable cost, or if there is any substantial delay in the delivery of imported water through the State Water Project.

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XV

SAVING CLAUSES

(a) Nothing in this Judgment precludes San Bernardino Valley, Western, or any other party from exercising such rights as it may have or obtain under law to spread, store underground and recapture imported water, provided that any such use of the underground storage capacity of the San Bernardino Basin Area by Western or any entity within it shall not interfere with any replenishment program of the Basin Area.

(b) Changes in the place and kind of water use, and in the transfer of rights to the use of water, may be made in the absence of injury to others or prejudice to the obligations of either San Bernardino Valley or Western under Judgment or the Orange County Judgment.

(c) If any Plaintiff shall desire to transfer all or any of its water rights to extract water within San Bernardino Valley to a person, firm, or corporation, public or private, who or which is not then bound by this Judgment, such Plaintiff shall as a condition to being discharged as hereinafter provided cause such transferee to appear in this action and file a valid and effective express assumption of the obligations imposed upon such Plaintiff under this Judgment as to such transferred water rights. Such appearance and assumption of obligation shall include the filing of a designation of the address to which shall be mailed all notices, requests, objections, reports and other papers permitted or required by the terms of this Judgment.

If any Plaintiff shall have transferred all of its said water rights and each transferee not theretofore bound by this Judgment as a Plaintiff shall have appeared in this action

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and filed a valid and effective express assumption of the obligations imposed upon such Plaintiff under this Judgment as to such transferred water rights, such transferring Plaintiff shall thereupon be discharged from all obligations hereunder. If any Plaintiff shall cease to own any rights in and to the wate: supply declared herein and shall have caused the appearance and assumption provided for in the third preceding sentence with respect to each voluntary transfer, then upon application to this Court and after notice and hearing such Plaintiff shall thereupon be relieved and discharged from all further obligations hereunder. Any such discharge of any Plaintiff hereunder shall not impair the aggregate rights of defendant San Bernardino Valley or the responsibility hereunder of the remaining Plaintiffs or any of the successors.

(d) Non-use of any right to take water as provided herein shall not result in any loss of the right. San Bernardino Valley does not guarantee any of the rights set out herein for Western and the other Plaintiffs as against the claims of third parties not bound hereby. If Western or the other Plaintiffs herein should be prevented by acts of third parties within San Bernardino County from extracting the amounts of water allowed them by this Judgment, they shall have the right to apply to this Court for any appropriate relief, including vacation of this Judgment, in which latter case all parties shall be restored to their status prior to this Judgment insofar as possible.

(e) Any replenishment obligation imposed hereunder on San Bernardino Valley may be deferred until imported water first is available to San Bernardino Valley under its contract with the California Department of Water Resources and the

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obligation so accumulated may be discharged in five approximately equal annual installments thereafter.

(f) No agreement has been reached concerning the method by which the cost of providing replenishment will be financed, and no provision of this Judgment, nor its failure to contain any provision, shall be construed to reflect any agreement relating to the taxation or assessment of extractions.

XVI

EFFECTIVE DATE

The provisions of Paragraphs III and V to XII of this Judgment shall be in effect from and after January 1, 1971; the remaining provisions are in effect immediately.

XVII

COSTS

No party shall recover its costs herein as against any other party.

THE CLERK WILL ENTER THIS JUDGMENT FORTHWITH.

DATED: April 17, 1969

ENTERED

APR 17 1969

JUDGMENT BOOK 124 PG 42

JUDGE OF THE SUPERIOR COURT

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2015 San Bernardino Valley RUWMP

Appendix J

Copy

OF

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OF

JUDGMENT

Rendered in the Superior Court of San Bernardino County, California, on January 28th, 1924, in Action No. 17030 and Entitled:

"City of San Bernardino vs. Fontana Water Co. et al."

Recorded in Book 829, Page 293 of Deeds, San Bernardino County Records

Judgment

In the Superior Court of the State of California in and for the County of San Bernardino

CITY OF SAN BERNARDINO,
a municipal corporation,

Plaintiff.

vs.

FONTANA WATER COMPANY, a corporation, FONTANA UNION WATER COMPANY, a corporation, FONTANA POWER COMPANY, a corporation, FONTANA FARMS COMPANY, a corporation, FONTANA COMPANY, a corporation, LYTLE CREEK WATER AND IMPROVEMENT COMPANY, a corporation, CITIZENS LAND AND WATER COMPANY OF BLOOMINGTON, a corporation, RIVERSIDE HIGHLAND WATER COMPANY, a corporation, RANCHERIA WATER COMPANY, a corporation, MUTUAL LAND AND WATER COMPANY OF RIALTO, a corporation, TERRACE WATER COMPANY, a corporation, THE GAGE CANAL COMPANY, a corporation, RIVERSIDE TRUST COMPANY, LIMITED, a corporation, RIVERSIDE

No. 17030

ORANGE COMPANY, LIMITED, a corporation, CITY OF COLTON, a municipal corporation, GATE CITY ICE AND PRECOOLING COMPANY, a corporation, COLTON CITY WATER COMPANY, a corporation, MEEKS AND DALEY WATER COMPANY, a corporation, FONTANA LAND COMPANY, a corporation, JOHNHUB WATER COMPANY, a corporation, FONTANA DEVELOPMENT COMPANY, a corporation, NORTH COLTON WATER COMPANY, a corporation, LAWSON WELL COMPANY, a corporation, ALTA VISTA WATER COMPANY, a corporation, CLARA VISTA WATER COMPANY, a corporation, ORCHARD MUTUAL WATER COMPANY, a corporation, EAST RIVERSIDE WATER COMPANY, a corporation, JAMES BARNHILL, JOHN DOE, RICHARD ROE, SAM BLACK, JOE WHITE, SAM WHITE, CHARLES WHITE, TOM BROWN, SARAH BROWN, CHARLES BROWN, MARY BROWN, CHARLES LOW and JOHN LOW, and RIALTO DOMESTIC WATER COMPANY, a corporation,

Defendants.

WHEREAS there has been filed in this action a stipulation for judgment, duly executed by and on the part of the plaintiff above named and by and on the part of each and all of the following named defendants in this action, to-wit: Fontana Water Company, a corporation;

Fontana Union Water Company, a corporation; Fontana Power Company, a corporation, Fontana Farms Company, a corporation; Fontana Land Company, a corporation, Lytle Creek Water and Improvement Company, a corporation; Citizens Land and Water Company of Bloomington, a corporation; Riverside Highland Water Company, a corporation; Rancheria Water Company, a corporation; Mutual Land and Water Company of Rialto, a corporation; Terrace Water Company, a corporation; City of Colton, a municipal corporation; Rialto Domestic Water Company, a corporation; and James Barnhill (said Barnhill being erroneously sued herein, under the name of "W. W. Barnhill"),

NOW THEREFORE, by reason of said stipulation, and pursuant to the terms and provisions thereof,

IT IS HEREBY ORDERED, ADJUDGED AND DECREED by the Court as follows:

I.

This action is hereby dismissed as to each and all of the defendants, other than those above named as parties to said stipulation; and each and all cross-complaints or cross-actions, filed or pending by or between any of the parties to said stipulation, above named are dismissed.

II.

As between the plaintiff and each and all of the defendants, above named, as parties to said stipulation, and as to each and all of said defendants as between themselves, excepting as set forth in Paragraph XXI hereof, it is further

ADJUDGED AND DECREED, as follows:

III.

That an inch of water, as the term is used herein, shall mean such quantity of water, in continuous flow, as will supply one-fiftieth part of a cubic foot of water per second of time.

IV.

That from time immemorial, there has flowed, and now flows, in Lytle Creek Canyon, in San Bernardino County, California, a natural stream, known as "Lytle Creek," and there exists below the mouth of said canyon, a certain pressure pipe line, belonging to said Power Company, and the cement intake diverting water into said pipe line, is situate on the west side of said stream, very near the mouth of said canyon, and at a distance of about 1662 feet north of a point in the north boundary of the Muscupiabe Rancho, between stations 48 and 49 thereof, where said boundary intersects the center line of Riverside Avenue, as delineated on the map showing subdivision of the lands of the Semi-Tropic Land and Water Company, (said location of said intake having been sometimes heretofore erroneously designated in the pleadings herein and elsewhere, as being about 2375 feet north of said point of intersection), said Map being recorded in the office of the County Recorder of said County, in Book 6 of Maps, page 12 thereof; and said Power Company, for more than five years last past, has been and now is diverting from said creek, at said intake, by means of said pipe line, the waters of said Creek, flowing at said intake not exceediig 3000 inches, and is conducting said waters to the power house of said Power Company, situated on Farm Lot 66, designated on said Map, which waters,

upon being discharged from said Power House, belong to and are distributed to sundry parties, for their use, in proportion to their rights and interests therein.

V.

That in the San Bernardino Valley in said County, there exists, and lies below, and to the southeast of the mouth of said canyon, an area of land herein designated as "Lytle Creek Region" which, for the purposes of this decree, is defined and described as follows:

Commencing at a point in the center line of Mill Street, in the City of San Bernardino, in said County, situate 300 feet east of the center line of Mt. Vernon Avenue; thence north 400 feet; thence west to the center line of Mt. Vernon Avenue; thence running north along the center line of Mt. Vernon Avenue, to the intersection thereof with the center line of Fourth Street, (said street being identical with Foothill Boulevard); thence running west along the center line of Fourth Street, to a point where the center line of Fourth Street would intersect the center line of Muscott Avenue, if said Avenue were extended south; thence running north to the point of intersection of center line of Muscott Avenue with center line of Base Line; thence running west along center line of Base Line, to the southeast corner of Section 31, Township 1 North, Range 4 West, S. B. B. & M.; thence running north to the southwesterly boundary of the right of way of Atchison, Topeka and Santa Fe Railway Company (on which right of way are located the main railroad tracks of said Railroad Company, running from said City, through Cajon Pass); thence following along said southwesterly boundary of said right of way, to the point of intersection thereof, with the State Highway

at Verdemont; thence following said Highway to the point of intersection thereof, with the north line of Township 1 North, Range 5 West, San Bernardino Base and Meridian; thence running west, along the north line of Township 1 North, Range 5 West, San Bernardino Base and Meridian, to the northwest corner of said last mentioned township; thence running southeasterly to a point situate five feet east of the most easterly point of said intake of said pipe line of said Power Company, thence running southeasterly and following upon and along a line parallel with the east side of that certain cement canal, formerly known as the "Semi-Tropic Canal" (the intake of which canal is identical with said intake of said pipe line), and at all points five feet distant in a northeasterly direction from the east side of said Canal, to a point where said line would intersect the northwesterly line of Farm Lot 68, designated on said Map, if said northwesterly line of said Lot were projected southwest; thence along said northwesterly line of said Lot, to the foot of the ridge or bluff known as the "Rialto Bench," thence running southeasterly along the foot of said bluff, to a point where the foot of said bluff intersects the center line of said Mill Street; running thence east, along the center line of Mill Street, to the place of beginning.

VI.

That whenever there shall be discharge from said Power House, surplus water in excess of the quantity at the time required to satisfy the domestic and irrigation needs of the respective parties, entitled to receive and use water discharged from said Power House, all of such surplus water, so discharged, shall be used for

replenishing the underground water sources of said Lytle Creek Region, and to that end, shall be delivered by said Power Company, to and upon the wash of said Lytle Creek, by a cement conduit, at the highest point on the westerly margin of said wash, to which such water can reasonably be conducted by gravity flow from said Power House. Such replenishment work, as to the water so delivered upon said wash, shall be performed under the supervision and direction of the Committee hereinafter mentioned.

VII.

That all water flowing at said intake of said pipe line of said Power Company, between the 15th day of December, and the 15th day of the next succeeding month of April, of each year hereafter elapsing, shall be diverted and applied in the manner and in accordance with the priorities hereinafter set forth, to-wit:

First: To supply to said pipe line 2000 inches of water, or such larger quantity as may, at the time, be required and taken for immediate use for irrigation or domestic purposes, by the parties entitled to receive and use water discharged from said Power House, not exceeding the extent of their respective rights to such water.

Second: To supply additional water to said pipe line, to the extent of an aggregate amount of 3000 inches, (inclusive of the water specified in the next preceding subdivision "First"), except and provided that all or any part of such additional water shall be allowed to flow past said intake, into the wash or channel of said creek, for replenishing the underground water of said

Region, whenever so requested in writing by the said Improvement Company, except during periods:

(a) When the quantity of water flowing in said creek at said intake, exceeds 4000 inches, in which event such excess water may be diverted through said pipe line, until the total quantity of water, diverted therethrough, amounts to 2500 inches, or

(b) When the quantity of water, flowing in said creek, at said intake exceeds 5000 inches, in which event, such excess water may be diverted through said pipe line, until the total quantity of water, diverted therethrough, amounts to 3000 inches.

Third: All water, so permitted to pass said intake, shall be used, as far as reasonably practicable, for replenishing the underground water contained in the entire area of the Lytle Creek Wash, situate below said intake, provided that at all times, so far as is reasonably practicable, the upper portion of said wash shall be so replenished with water until no more water can be sunk therein, before such replenishment is performed on the portion of said wash lying south of Highland Avenue, or lying east of the west boundary of the lands in said Region now owned by the Muscoy Water Company.

Fourth: If, at the end of five years, from date hereof, said Improvement Company or their successors in interest, decide that the water producing capacity of wells, situate south of an east and west line drawn through said Power House, and north of said Highland Avenue, would be benefited and increased by conducting at said intake, into said pipe line, a quantity of water not exceeding 3000 inches, then and in that event, all of the water flowing at said intake, shall at all times

thereafter, be turned into said pipe line, to the extent of said 3000 inches, instead of permitting a portion of such waters to flow past said intake, as aforesaid, and at said Power House, all surplus water, in excess of the quantity at the time required to meet the then requirements of the respective parties, entitled to receive and use water discharged from said Power House, shall be used in accordance with, and be subject to the provisions of Paragraph VI hereof.

VII-a

That no water shall ever be conducted by any party hereto, from that certain tract of land, situated in said San Bernardino County, described as follows:

Beginning at a point on the center line of hereinbefore mentioned Muscott Avenue, said point being situate one-half mile north of said Base Line; running thence south to the center line of said Fourth Street; running thence west, along said center line of Fourth Street, to the point of intersection thereof with the center line of the right of way, for electrical transmission line, of Southern Sierras Power Company; running thence northwesterly along said center line of said right of way, to a point where said center line of said right of way would intersect a line drawn due west from said point of beginning; thence running east to said point of beginning.

VIII.

That in order to conserve, in the most economical and effectual method, all waters which, under the provisions hereof, are from time to time to be used for replenishing the underground water sources of said Region, and also, for further replenishing the underground water

supply of said Region, to conserve, so far as may be reasonably practicable, the surplus, or flood waters, of streams or canyons tributary to said Region, a committee of five persons shall annually be appointed in the month of September of each year, which committee shall have full charge and direction of such water conservation work, and of all expenditures relating thereto, provided that, in case of disagreement or difference of opinion, the power of such committee shall be exercised by concurrence of a majority of its members. One of the members of said committee shall be so appointed by said Improvement Company; one by said Citizens Company; one by said Union Water Company, one by said Mutual Company, Rancheria Water Company, Riverside Company and said City of San Bernardino; and one by said Terrace Water Company, James Barnhill and City of Colton, and each of said members shall serve for one year, and until his successor is appointed and no member of said committee shall receive any compensation for serving thereon. Vacancies on said committee shall also be filled by appointment, to be made in like manner as aforesaid, by the party or parties which made the appointment of the member whose place so becomes vacant, and any person appointed to fill such vacancies shall fill out the unexpired term of his predecessor. Subject to the provisions hereof, said committee is hereby authorized to, from time to time, install any water conservation works, including the construction of dams, ditches, cuts, obstructions, and shafts on land in said Lytle Creek Wash, lying north of Fourth Street, (said street being identical with Foothill Boulevard) and also in and along any canyon, the waters of which are tributary to said Region, and take all other steps,

as in its uncontrolled discretion may be deemed expedient, in order to accomplish the underground conservation of such waters, provided that nothing herein shall be construed as authorizing said committee to trespass upon the property or rights of any party or to do any act that would infringe upon or impair or interfere with the right of any party to the use of any water to which such party shall be entitled. The expense of installing such system and maintaining the same, and carrying on said work of water conservation, shall be borne and paid, subject to the provisions hereof, by the Fontana Companies, Citizens Company, Riverside Company, Improvement Company, Mutual Company, Rancheria Water Company, Rialto Domestic Water Company, City of Colton, City of San Bernardino, Terrace Water Company, and James Barnhill, in the same proportions that the maximum quantity of water which each of said eleven parties (or group of parties), is allotted hereunder, the right to pump from said Region, bears to the aggregate maximum quantity of water which all of said parties are alloted hereunder the right to pump from said Region, provided that in the event of any other person or corporation joining in said conservation work, and paying a proportion of the expense thereof, the proportions of said expense to be borne by said parties, as hereinbefore set forth, shall be correspondingly and equitably reduced. Said committee, in the month of October of each year, and from time to time thereafter, as they may deem proper, shall make an estimate of the amount of money at the time required to be paid to said committee by said eleven parties hereto above named, in order to meet the expense for conservation work as aforesaid, at the

time being undertaken, or in contemplation by said committee.

Said committee shall thereupon present to each of said eleven parties, a bill for the proportionate amount so to be paid by such party, and if any party shall fail to pay such bill, within thirty days after it shall be so presented to such party, then said committee may bring, and it shall be its duty to bring, suit against such party for the amount of such bill, together with costs, including a reasonable attorneys' fee to be fixed by the court in which such suit shall be brought.

Any and all lands, owned by any of said specified parties who are to bear the expense of said conservation work as aforesaid, situate in said Lytle Creek Region, and lying north of said "Fourth Street," and not suitable for the growing of crops thereon, may be used at any and all times for spreading water thereon, and sinking and conserving water therein, by means of dams, obstructions, ditches, cuts and shafts, or by taking such other steps as may be deemed expedient by said committee, provided however, that such water conservation work shall not be done in such a manner as to injure or interfere with the use of any pumping plant, structure or other improvement, situate on any land where such work is performed.

IX.

That the maximum quantity of water which said plaintiff, City of San Bernardino, shall be, and is entitled to take from said Region, and use beyond the confines thereof, is such quantity of water, which when added to the water said plaintiff is entitled to have delivered to it, from said Lytle Creek, will amount in the

aggregate, (inclusive of said Lytle Creek Water) to 325 inches of water, and said plaintiff shall not be entitled to divert, at any time, from said Region, an amount of water in excess of said 325 inches. Of said quantity of water, 225 inches and no more may be pumped or diverted from that certain tract of land in said Region, comprising 10.09 acres, and forming a part of tract known as the "McKenzie Tract" (said tract of 10.09 acres being more particularly described in that certain deed running from William L. McKenzie, and others, to said plaintiff, and recorded in Book 109 of Deeds, at page 303 thereof, in the office of the County Recorder of said San Bernardino County), and none of said 225 inches shall ever be diverted by plaintiff from any other portion of said Region.

Said plaintiff is also the owner of the right to take, divert and use water from that portion of the San Bernardino Valley, lying east of the easterly boundary line of said Lytle Creek Region and east of a line beginning at the point of intersection of the State Highway with the south boundary line of Section 34, Township 2 North, Range 5 West, S. B. B. & M., and running thence to the northwest corner of said Section 34, and north of the center line of Mill Street, extended east to Sterling Avenue, and from streams tributary to said portion of said valley, situate in said portion of said valley, either from the surface flow of such streams, or from wells bored or to be bored in said portion of said valley, to such extent as may be reasonably necessary to supply the needs of said city and its inhabitants with water for supplying needs and purposes within said City. The right of said plaintiff to take water from the surface flow of Lytle Creek, to the extent of 100 inches, shall

not be affected or diminished by any claims of the Fontana Companies, or any of them to salvage water, by reason of any water of Lytle Creek being conducted or conveyed in or through pipe lines, or conduits of any kind.

X.

That, subject to the provisions of this paragraph, the maximum quantity of water which said Rialto Domestic Water Company shall be, and is entitled to take from said Region and use beyond the confines thereof, is such quantity of water which, when added to the water said Company is entitled to have delivered to it from said Lytle Creek, will amount in the aggregate (inclusive of said Lytle Creek Water) to 143.22 inches of water, and said Company shall not be entitled to divert, at any time from said Region, an amount of water in excess of said quantity hereinbefore in this paragraph specified. Of said quantity of water, 100 inches and no more may be pumped from said Region by said Company, provided that:

(a) None of said 100 inches of water shall be taken from any well or water development situate south of a line located parallel to, and situate three-fourths of a mile north of, Highland Avenue.

(b) The right of said Company to so pump and take said one hundred inches of water, shall be exercised only to such extent as shall be necessary to supply the City of Rialto, and the inhabitants thereof, with water for municipal and domestic uses and purposes, and for the irrigation of flowers, trees and lawns, within said City, and then only during such times as the 43.22 inches of water (now supplied by said Company to the

inhabitants of said City) is inadequate, or unsuitable for such purposes or uses.

(c) None of said 100 inches of water shall, at any time, be used outside of the now, or hereafter existing corporate limits of said City of Rialto, except to the extent that said 43.22 inches is now being used outside said City.

(d) Nothing in this Paragraph X contained shall be construed as vesting in said Company the right to take any portion of said 100 inches of water from any well or water development, without the consent of the owner of the land on which such well or water development is situated.

(e) The right to pump and take said 100 inches of water from said region shall be exercised only in the event such right shall be transferred to the City of Rialto.

(f) The water derived from said 100 inches water right, other than water supplied for fire hydrants, sewers, stores and buildings, not used for dwellings, shall not be furnished to the inhabitants of said City of Rialto, except through meters and when charged for at meter rates.

XI.

That the maximum quantity of water which said Improvement Company shall be, and is entitled to take from said Region, and use beyond the confines thereof, is, such quantity of water, which when added to the water said Company is entitled to have delivered to it from said Lytle Creek, will amount in the aggregate (inclusive of said Lytle Creek Water), to 1026.23 inches, and said Improvement Company shall not be en-

titled to divert at any time, from said Region, an amount of water in excess of said quantity in this paragraph hereinbefore specified. Of said quantity of water, only 700 inches may be pumped and diverted from said Region, by said Improvement Company, except during such periods when the quantity of water said Company is deriving from said Lytle Creek, is temporarily reduced to a quantity of less than 326.23 inches, during which periods additional water may be pumped and diverted from said Region by said Company, but only to an extent sufficient to supply such deficiency of said Lytle Creek Water, and only so long as such deficiency continues. Said pumping of said 700 inches of water by said Improvement Company shall be confined to the Ferguson Ranch, (said Ranch being the real property described in that certain deed, dated November 20th, 1908, and executed by Fontana Development Company, and recorded in the office of the County Recorder of said San Bernardino County, in Book 429 of Deeds, page 103 thereof), and said Company is not entitled to pump any water from any other part of said Region.

XII.

That the maximum quantity of water, which said Mutual Company shall be, and is entitled to take and conduct from said Region, and use beyond the confines thereof, is 125 inches of water, and said Mutual Company shall not be entitled to divert at any time, from said Region, an amount of water in excess of said 125 inches, all of which said quantity of water may be pumped by said Company from said Region, but all of said water shall be taken from wells, or water de-

velopments situate south of Highland Avenue, and north of Base Line.

XIII.

That the maximum quantity of water which said Riverside Company shall be, and is entitled to take from said Region, and use beyond the confines thereof, is 450 inches of water, and said Riverside Company shall not be entitled to divert at any time, from said Region, an amount of water in excess of said 450 inches, all of which said quantity of water may be pumped or diverted by said Company from said Region, but all of said water shall be taken from wells or water developments situate south of Highland Avenue, and north of Base Line.

XIV.

That the maximum quantity of water which said Rancheria Water Company shall be, and is entitled to take from said Region, and use beyond the confines thereof, is 120 inches of water, and said Company shall not be entitled to divert at any time from said Region, an amount of water in excess of 120 inches, all of which said quantity of water may be pumped or diverted by said Company from said Region, but all of said water shall be taken from wells or water developments, situate south of Highland Avenue, and north of said Fourth Street.

XV.

That the maximum quantity of water which said Citizens Company shall be, and is entitled to take from

said Region, and use beyond the confines thereof, is 1300 inches of water, and said Citizens Company shall not be entitled to divert, at any time, from said Region, an amount of water in excess of said 1300 inches, all of which said quantity of water may be pumped or diverted by said Company from said Region, provided that:

(a) No more than 200 inches shall ever be diverted or pumped by said Citizens Company, from that part of said Ferguson Ranch specified in that certain deed, executed by the Semi-Tropic Land and Water Company, to the Rialto Irrigation District, and recorded in the office of the County Recorder of said San Bernardino County, in Book 187 of Deeds, at page 213 thereof, and

(b) No more than 585 inches shall ever be diverted from said Region by said Citizens Company, from the northeast quarter of Section 36, Township 1 North, Range 5 West, S. B. B. & M., and

(c) No more than 150 inches shall ever be diverted or pumped by said Citizens Company, from that certain tract of land, situate in said Region, described as follows, to-wit:

Commencing at a point on the Base Line two thousand and fifty feet east of the southwest corner of Township 1 North, Range 4 West, San Bernardino Base and Meridian, and running thence due east 250 feet; thence north 14 degrees west, 344 feet; thence north 24 degrees 10 minutes West, 839.7 feet; thence north 39 degrees, 56 minutes west, 1096 feet; thence due west 674 feet; thence south 8 degrees, 20 minutes east, 500 feet; thence south 34 degrees, 15 minutes east, 1119 feet; thence south 58 degrees, 35 minutes east, 998-7/10 feet, to the place of beginning.

(d) None of the remaining quantity of said 1300 inches of water shall ever be diverted or pumped by said Citizens Company, from any lands in said Region, lying to the north of Base Line, but nothing herein contained shall be construed as obligating said Citizens Company, to divert any specific quantity of water from lands lying north of Base Line, to the end that any quantity of water may be diverted by said Company, from lands in said Region lying south of Base Line, so long as such quantity, when added to the quantity of water which said Company may be then contemporaneously taking from said Region, from lands north of Base Line, shall not exceed in the aggregate, said maximum quantity of 1300 inches of water; provided however, that in the event of said Company diverting at any time from said Region, a total quantity of water, exceeding 1100 inches, then all of such excess water shall be taken by said Company from lands in said Region lying south of a line drawn parallel to, and situate 2500 feet south of Base Line.

(e) Said Citizens Company shall never be entitled to divert any water from that certain tract of land situate in said Region, and described as follows:

Beginning at the southeast corner of the northeast quarter of the northeast quarter of Section 36, Township 1 North, Range 5 West, San Bernardino Base and Meridian; running thence west, 11.89 chains to a post, thence north 3 degrees 10 minutes west, 20 chains to a post on the north line of said Section, thence east 1 chain, thence south 32 degrees east, 8.32 chains to a post; thence south 2 degrees west, 2.06 chains to a post; thence south 54 degrees east, 4.59 chains to a post; thence south 83 degrees east, 4.40 chains to the east line

of said Section, thence south 8.48 chains to the place of beginning.

XVI.

The maximum quantity of water which James Barnhill (sued herein under the erroneus name of "W. W. Barnhill"), shall be, and is entitled to take from said Region, and use beyond the confines thereof, is seventy-five inches of water and said Barnhill shall not be entitled to divert, at any time, from said Region, an amount of water in excess of said 75 inches, all of which said quantity of water may be pumped by him from said Region, but all of said water shall be taken from wells, or water developments, situate south of the existing right of way of Atchison, Topeka and Santa Fe Railway Company (on which said right of way are located the railroad tracts extending from said City of San Bernardino, to the City of Rialto), and north of said Mill Street.

XVII.

That the maximum quantity of water, which said Terrace Water Company shall be, and is entitled to take from said Region, and use beyond the confines thereof, is 150 inches of water, and said Terrace Water Company shall not be entitled to divert, at any time, from said Region, an amount of water in excess of said 150 inches, but all of said water shall be taken from wells or water developments, situate south of said right of way of said Railway Company mentioned in the next preceding paragraph hereof, and north of said Mill Street. All of said water may be pumped.

XVIII.

That the maximum quantity of water which said City of Colton shall be, and is entitled to take from said

and its tributaries, and from said Lytle Creek Region, and conduct from said Region, and use beyond the confines thereof, shall amount to an aggregate quantity of 3480.78 inches, and said Fontana Companies shall never be entited either collectively or separately to divert, beyond said confines, at any time from said water sources, or any of them, an amount of water in excess of said quantity in this paragraph hereinbefore specified. Of said 3480.78 inches of water, 1300 inches and no more may be pumped and diverted from said Region, by said Fontana Companies, provided that:

(a) No more than three hundred inches shall ever be pumped from the next hereinafter described tract of land, and said 300 inches shall be pumped from no other place; said tract being that certain tract, in said Region, described as follows:

That portion of the Southwest portion of the Muscupiabe Rancho, described as follows:

Beginning at station O of the north boundary of the Muscupiabe Rancho, which point is situate near the northeasterly bank of Lytle Creek, and near the mouth of Lytle Creek Canyon;

Thence following and along the northerly boundary of said Muscupiabe Ranch, South 67 degrees, 52 minutes East, thirty-five and fifty-three hundredths (35.53) chains to station 1 of said Muscupiabe Rancho; thence south 48 degrees, 14 minutes west, fifty-six and seventy-six hundredths (56.76) chains to the southwesterly corner of Farm Lot Ten (10) designated on the Map showing SUBDIVISION OF LANDS BELONGING TO SEMI-TROPIC LAND AND WATER COMPANY, recorded in Book 6 of Maps, at page 12, in the office of the County Recorder of said San Bernardino County;

Region, and use beyond the confines thereof, is 600 inches of water, and said City shall not be entitled to divert, at any time, from said Region, an amount of water in excess of said 600 inches, all of which said quantity of water may be pumped by said City from said Region, but all of said water shall be taken from wells or water developments situate south of the last mentioned right of way of said Railway Company, and north of said Mill Street, and none of said water shall be used west of the highway, running approximately north and south, situate on the Rialto Bench, and known as "Rancho Avenue."

XIX.

As used herein, (1) the term "Fontana Companies," refers to Fontana Water Company, Fontana Union Water Company, Fontana Power Company, Fontana Farms Company, and Fontana Land Company; (2) the term "Citizens Company" refers to the Citizens Land and Water Company of Bloomington; (3) the term "Riverside Company" refers to the Riverside Highland Water Company; (4) the term "Improvement Company" refers to the Lytle Creek Water and Improvement Company; (5) the term "Mutual Company" refers to the Mutual Land and Water Company of Rialto; (6) the term "Power Company" refers to the Fontana Power Company, and (7) the term "Union Water Company" refers to Fontana Union Water Company.

XX.

That the maximum quantity of water which said Fontana Companies shall be, and are collectively entitled to take from the surface and sub-surface waters of said Lytle Creek, and from said Lytle Creek Canyon,

Thence north 24 degrees, 43 minutes west, eighty-four and twenty-four hundredths (84.24) chains to a point in the north boundary of said Muscupiabe Rancho; said point being identical with the north corner of Farm Lot One (1), designated on said Map; thence, following and along the north boundary of the Muscupiabe Ranch, south fifty-one degrees, thirty minutes east, eleven and fifty-hundredths (11.50) chains to Station 49 thereof;

Thence, south 63 degrees, 00 minutes east, 40 chains to Station 0 of said Muscupiabe Rancho, the place of beginning.

Containing two hundred twelve and nineteen hundredths (212.19) acres.

(b) No more than 200 inches shall ever be pumped and diverted from said Region, from that certain tract of land in said Region, described as follows:

Commencing at a point on Line 2-3 of the northeasterly boundary of the southwest portion of the Rancho Muscupiabe, said point being north 45 degrees, 0 minutes west, one hundred thirty-seven and three-tenths chains from the southeast corner of Section 25, Township 1 North, Range 5 West, San Bernardino Base and Meridian; thence following the northeasterly boundary line of lands heretofore conveyed by the Fontana Development Company, to the Lytle Creek Water and Improvement Company, by deed recorded in Book 429 of Deeds, page 103, south 71 degrees, 13 minutes west, thirty-four and twenty-eight hundredths chains; thence still following said boundary north eighty-two degrees, fifty-nine minutes west, eighteen and seventy-three hundredths chains, for a point of beginning; thence from said point of beginning north fifty-four degrees,

fifteen minutes west, eighty-three and four hundredths chains; thence south 35 degrees, 45 minutes west, along the boundary line of the land conveyed by the Fontana Development Company to the Fontana Union Water Company, by deed recorded in Book 505 of Deeds, page 274, to the northwesterly corner of Lot 64, of Map showing subdivision of lands belonging to the Semi-Tropic Land and Water Company, as per plat recorded in Book 6 of Maps, page 12, of the records of said County, including the western portion of the Muscupiabe Grant, as per plat recorded in Book 7 of Maps, page 23, of the records of said County; thence from said northwesterly corner of said Lot 64, easterly and along the northeast line of Lots 64, 66, 68, 70, 72, 74 and 76, to the westerly point of land conveyed by the Fontana Development Company to the Lytle Creek Water and Improvement Company, by deed recorded in Book 429 of Deeds, page 103, et. seq.; thence following the north boundary of said tract south 82 degrees, 59 minutes east, twenty-six and twenty-seven hundredths chains, more or less, to point of beginning.

(c) None of the remaining 800 inches, or any portion of said 1300 inches of water, shall ever be pumped by said Fontana Companies, or any of them, from any portion of said Region lying to the south, or southeasterly of a line drawn from the southeast corner of Farm Lot 68, designated on said Map, to that certain point situate on the boundary of said Muscupiabe Rancho, designated or known as "Stake No. 3" (which said last mentioned point is situate very near to the northeast corner of Section 22, Township 1 North, Range 5 west, S. B. B. & M.); thence running due east to the southwesterly boundary of said right of way of

said Atchison, Topeka and Santa Fe Railway Company, hereinbefore mentioned, save and except that 150 inches of said 1300 inches of water may be pumped or diverted from lands in said Region lying below or to the south or southeasterly of said line.

(d) No water, pumped in said Region by any of said Fontana Companies, shall ever be conducted east of the west boundary of the lands in said Region now owned by the Muscoy Water Company, a corporation, provided however, that if any of the said Fontana Companies shall exercise the right to substitute for 150 inches of the surface waters of said Lytle Creek other water (said right being specifically provided for in that certain judgment rendered by the Superior Court of said San Bernardino County, in Action numbered 9383 in said Court, a copy of which judgment is recorded in the office of the County Recorder of said County, in Book 369 of Deeds at page 323 thereof, which said judgment is based upon that certain contract, dated October 26, 1891, wherein John L. Campbell granted to the Semi-Tropic Land and Water Company, the right to make such substitution of such water), then and in that event, such substituted water, not exceeding 150 inches, may be conducted anywhere.

(e) No water, except the 300 inches permitted to be pumped hereunder, from the tract of land described in Subdivision (a) of this Paragraph XX, shall ever be pumped and diverted by any of said Fontana Companies, from said Region, except and provided that whenever the quantity of water which said Fontana Companies are deriving from said Lytle Creek, at said intake, when added to any water that shall at the time be actually pumped from said tract (there shall be no

obligation to pump any water from said tract), shall amount in the aggregate to less than 2500 inches, then, so long as such deficiency shall continue, said Fontana Companies may take and divert from said Region from any or all of said other areas hereinbefore specified (but not more from any one of said areas than the maximum that they are entitled to take from such tract as hereinbefore stated) such quantity of water as may be necessary to make up such deficiency and maintain such aggregate supply of 2500 inches.

(f) Said quantity of 2500 inches and said maximum quantity of 3480.78 inches of water, hereinbefore referred to in this Paragraph XX, both relate exclusively to water which said Fontana Companies are entitled to take for their own use for irrigation and other beneficial purposes, beyond the confines of said Region.

XXI.

Nothing herein contained shall settle, bind or affect any question, matter or right existing between any of said Fontana Companies only, the purpose of this decree being to define and adjudicate the rights involved herein, of each and all of the respective parties hereto, other than said Fontana Companies, and also to adjudicate the collective rights of all of said Fontana Companies, constituting one group of defendants, without affecting any right which any of said Fontana Companies may have against any other of said Fontana Companies.

XXII.

That, except as provided in Paragraph XXIV hereof, no well shall ever be sunk hereafter by any party to

this action, within a distance of 200 feet of the north boundary line of said Ferguson Ranch, and it is further decreed that none of said Fontana Companies shall be entitled to hereafter pump any water in said Lytle Creek Canyon, at any time when such water is not needed for irrigation purposes.

XXIII.

Nothing contained herein shall be construed as permitting or shall permit, any water to be diverted from said Region, or from any water sources herein menitoned, at any time when the water so diverted is not reasonably needed for some useful or beneficial purpose, and it shall not be deemed a useful or beneficial purpose within the meaning of this paragraph, to use water:

(a) For irrigating, between the 15th day of November and the 15th day of March, of the next succeeding year, any grain or cereal crop, unless such crop is growing in an orchard;

(b) For saturating or causing water to sink in lands, lying outside of the said Region and canyon, for the purpose of accomplishing underground storing of water, or of adding to the water contained in such lands, nor for excercising unreasonable irrigation of crops or trees growing thereon.

XXIV.

That none of the parties to this action shall ever be entitled hereafter, to sink any well within a distance of 500 feet from any other well, owned, or operated by any other party to this action, except for substituting a new well in lieu of any now existing well, within said distance, for the sole purpose of maintaining, but not in-

creasing, the quantity of water now taken by such existing well, within such distance, provided however, that if it is desired to sink such new well within said distance, then such new well shall be always located as near as reasonably practicable to the existing old well for which it is to be substituted, as aforesaid.

XXV.

That each and all of the parties to this action, when taking any water from any water source mentioned herein, shall install, and at all times maintain respectively, at every point at which such water is so taken, such measuring box or weir or other measuring device, as will show readily and accurately the quantity of water at the time being taken at such point, which box and weir or other device, shall be installed and maintained as directed by, and to the satisfaction of said committee on water conservation, and shall at all times be open to inspection by an member of said committee, and by any party to this action.

XXVI.

Nothing herein contained shall be construed as vesting any new right in any of the parties hereto, to enter upon and take water from any water development or well situate on any property of any other party hereto, but the provisions of this paragraph shall not impair or affect any existing right of any party hereto.

XXVII.

That the rights of each and all of the said parties to pump water from said Region, as hereinbefore specified and defined are, as between said parties, equal and cor-

relative, without any priority or superiority of right, except as hereinbefore specifically stated or provided as to a particular interest or right, as between particular specified parties.

XXVIII.

That every provision of this decree in favor of, or applying to any party hereto, shall also apply to, and inure to the benefit of, and also bind each and all of the heirs, legal representatives, successors and assigns of such party.

XXIX.

That nothing herein decreed shall impair, abridge, or affect any existing right of any party hereto, which is now established by decree of court, or by other record, to have delivered, or to share in water from the surface flow of said Lytle Creek, except as may hereinbefore be otherwise specifically provided. Nothing herein decreed shall impair, abridge or affect any existing right of any party hereto to practice water conservation by sinking water in said Lytle Creek Canyon.

XXX.

That each and all of the parties hereto, and the agents and employees of each of them, are hereby perpetually restrained and enjoined from doing any act or thing in violation of the provisions of this decree.

XXXI.

None of the several maximum quantities of water which the parties hereto are respectively entitled to take from said Region, and use beyond the confines thereof, as herein specified, shall be increased or affected by the

future acquiring of additional lands in said Region by any of said parties; provided, however, anything to the contrary herein contained notwithstanding, should any party hereto hereafter purchase from any other party hereto the herein specified right to divert water of such other party, such purchasing party shall be entitled to exercise such purchased right of diverting water from said Region, in addition to the right allotted hereunder to such purchasing party.

XXXII.

No objection shall ever be made by any of said parties as to the interest or right of any party, as hereinbefore specified and defined, or as to the validity of this judgment in so specifying or defining such interest or right, on the ground that such interest or right, as so specified or defined, is not consistent with or warranted by the pleadings relative thereto; and if, in any case, it shall appear that any such interest or right, as so specified and defined, is in fact not consistent with or warranted by such pleading as actually filed, then such pleading shall be deemed and treated as amended, to conform to and sustain such interest and right as hereinbefore specified and defined.

XXXIII.

Each of said parties waives all right of appeal from this judgment, and no appeal shall be taken by any party or parties from this judgment or any part thereof.

XXXIV.

No party to this judgment shall be entitled to recover costs from any other party.

Dated: January 28th, 1924.

BENJAMIN F. WARMER,
Judge.

Endorsed:
Filed Jan. 28, 1924

HARRY L. ALLISON, Clerk
By M. L. ALDRIDGE, Deputy.

Docketed: Jan. 30, 1924, at 1:35 o'clock P. M.

Entered: Jan. 28, 1924, Book 41, Page 154.

HARRY L. ALLISON, Clerk
By R. M. SCHMIDT, Deputy Clerk

STATE OF CALIFORNIA,
COUNTY OF SAN BERNARDINO, } ss.

I, HARRY L. ALLISON, County Clerk and ex-officio Clerk of the Superior Court, do hereby certify the foregoing to be a full, true and correct copy of the original on file in my office.

Witness my hand and seal of the Superior Court, this 14th day of Feb., 1924.

HARRY L. ALLISON, County Clerk.
By R. M. SCHMIDT, Deputy.

Recorded at request of Leonard, Surr & Hellyer, Feb. 16, 1924, at 28 minutes past 9.00 A. M., in Book 829, Page 293, of Deeds, Records San Bernardino County.

FULTON G. FERAUD, County Recorder.
By IRENE MCINERNY, Deputy Recorder.
Fee $13.50.

I hereby certify that I have correctly tanscribed this instrument on the records in the office of the Recorder of San Bernardino County.

R. EASTON, Copyist.

Compared:
M. ALEXANDER,—R. EASTON.

2015 San Bernardino Valley RUWMP

Appendix K

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Attorneys at Law
599 Arrowhead Avenue
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Telephone: TUrner 4-4704

Attorneys for Lytle Creek Water and Improvement Company and Citizens Land and Water Company of Bloomington

Entered Dec 13 1961
By [illegible] Deputy

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ATTORNEYS AT LAW
SAN BERNARDINO, CALIFORNIA

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SAN BERNARDINO

THE LYTLE CREEK WATER AND IMPROVEMENT COMPANY, a corporation,

Plaintiff,

vs.

FONTANA RANCHOS WATER COMPANY, a corporation; HIGHLAND AVENUE WATER COMPANY, a corporation; CITIZENS LAND AND WATER COMPANY OF BLOOMINGTON, a corporation; CITY OF RIALTO, a municipal corporation; and CITY OF COLTON, a municipal corporation; et al.,

Defendants.

No. 81264 -

DECREE

WHEREAS, there has been filed in the above-entitled action a Stipulation for Judgment duly executed by and on the part of each and all of the following named parties to said action (who are collectively hereinafter referred to as "stipulating parties"), to-wit: The Lytle Creek Water and Improvement Company, a corporation (hereinafter referred to as "Lytle Creek"); Citizens Land and Water Company of Bloomington, a corporation (hereinafter referred to as "Citizens"); Fontana Union Water Company, a corporation (hereinafter referred to as "Fontana Union"); City of Colton, a municipal corporation (hereinafter referred to as "Colton"); City of Rialto, a municipal corporation (hereinafter referred to as "Rialto"); and Semi-Tropic County Water District, a county water district organized and existing under the California County Water District Law (hereinafter referred to as "Semi-Tropic"); and

WHEREAS, the Fontana Union was sued herein as John Doe

Company No. 1 a corporation and the Complaint herein should be amended accordingly; and

WHEREAS it appears that Semi-Tropic should be joined as a defendant in this action; and

WHEREAS, the action has been dismissed as to each of the defendants Fontana Ranchos Water Company, a corporation, and Highland Avenue Water Company, a corporation; and

WHEREAS the Court has heard and considered evidence on the part of the various stipulating parties; and

WHEREAS the parties have in said Stipulation for Judgment waived Findings of Fact and Conclusions of Law;

NOW, THEREFORE, IT IS HEREBY ORDERED, ADJUDGED, AND DECREED as follows:

1. The Complaint herein is hereby amended to set forth the true name of the defendant John Doe Company No. 1, a corporation, which is Fontana Union Water Company, a corporation.

2. Semi-Tropic County Water District is hereby joined as a defendant in this action.

3. As used herein the terms listed below shall have the respective meanings next following them, viz:

(a) "Rialto Basin" or "Basin" shall mean that certain territory in the County of San Bernardino State of California, which is more particularly described on Exhibit "1".

(b) "Year" shall mean a twelve month period commencing on October 1 and ending on the next following September 30.

(c) "Acre Foot" of water shall mean that quantity of water which will cover one acre to a depth of one foot, also being 43,560 cubic feet, and which also is equal to a flow of 25.208 miner's inches of water for 24 hours.

4. Except as provided herein no stipulating party shall have any priority to take water from the Basin, and the rights of the parties to take

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water from the Basin as between themselves are set forth herein.

5. Subject to the pro rata reductions hereinafter set forth, the amount of water in acre feet to which the stipulating parties are respectively entitled to extract from the Basin in each year are as follows:

Colton	3,010 acre feet
Rialto	1,580 acre feet
Citizens	3,260 acre feet
Fontana Union	550 acre feet
Lytle Creek	3,600 acre feet
Semi-Tropic	-0- acre feet

6. The following described wells in the Basin are designated and referred to herein as index wells for the purpose of determining the elevation above sea level of the ground waters within the Basin. These wells are as follows:

(a) "Duncan Well" - presently owned by Rialto, having State Location No. 1S/5W-3A1, State Serial No. D-1084, located 109 feet South of the center line of Baseline and 233 feet West of the center line of Cactus Avenue.

(b) "Willow Street Well" - presently owned by Lytle Creek, having State Location No. 1S/5W-2K1, State Serial No. D-1085, located 202 feet East of the center line of Willow Street and 133 feet North of the center line of Victoria Avenue.

(c) "Boyd Well" - presently owned by Citizens, having State Location No. 1S/5W-12L1, State Serial No. D-1095, located 109 feet West of the center line of Eucalyptus Street and 155 feet North of the center line of Wilson Street.

For the purpose of determination of the elevation of water above sea level in the said index wells, the elevation above sea level of each of the index wells is established as follows:

(a) "Duncan Well"	1352.79
(b) "Willow Street Well"	1287.00
(c) "Boyd Well"	1177.19

If for any reason any or all of said wells shall not be available

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for measurement the identity and location of a substitute index well or wells may be determined by a written stipulation executed by at least three-fourths in number of the stipulating parties (or their successor(s) in interest) and filed in this action or in default of said stipulation, by order of this Court.

The elevation of the water level above sea level of each of the index wells shall be measured in each of the months of March, April, and May in each year. Each stipulating party shall be entitled from time to time to designate one individual to be present and observe such measurements. Measurements shall be made by the owners of the respective wells or such other person, firm or corporation which three-fourths in number of the stipulating parties shall designate to do so. Such measurements shall be made at such times as the index well measured is not being pumped and has not been pumped within the preceding twenty-four hours.

7 As used herein the term "spring-high water level" for a year at each of the index wells shall mean the highest elevation in feet above sea level of the surface of the water table which shall be measured in each respective index well at any one of the monthly measurements during either March, April, or May.

In any year in which the average of the elevation of the spring-high water level in the three index wells is above elevation 1002.3 feet above mean sea level, no stipulating party shall be limited in the amount of water which may be pumped from the Basin. However, no stipulating party shall acquire any additional right to extract water from the Basin by reason of extracting more than such party is entitled under paragraph 5 above.

In any year in which the average of the elevations of the spring-high water level in the three index wells is between 1002.3 feet above mean sea level and 969.7 feet above mean sea level, each party shall be entitled to pump from the Basin in such year only the amount of water to which such party is entitled as specified in paragraph 5 above.

In any year in which the average of the elevations of the spring-high water level in the three index wells is below 969.7 feet above mean sea level, then the amount of water which the stipulating parties shall

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be entitled to pump from the Basin during such year shall be reduced one per cent (1%) for each one (1) foot that the said average is below 969.7 feet above mean sea level, and not cumulatively to be reduced more than fifty per cent (50%).

9 If any stipulating party acquires any of the wells located within the Basin which are described on Exhibit "2", which is attached hereto and hereby incorporated herein, such party shall have the additional right to extract water from the Rialto Basin annually in the amount set forth on said Exhibit "2" opposite the description of the respective wells.

10. Each stipulating party shall maintain records of all its extractions of water from the Basin so that it can be determined therefrom what extraction of water was taken from each well or combination of wells or other water sources in the Basin from which such party received water in each year. Each stipulating party shall equip each of its wells with a water metering device which shall accurately measure the entire quantity of water pumped from the well. Each stipulating party shall allow the other stipulating parties access upon reasonable notice to the wells of such party to permit of inspection and testing the metering equipment.

Upon written demand of any stipulating party, the party keeping such records shall within thirty (30) days after receipt of such demand supply to the party making such demand or other person designated by such party in such demand a written statement of the amount of water (in acre feet) so taken from each such well or combination of wells or other sources for each year after 1961 with respect to which no such statement has previously been supplied.

11. Every provision of this judgment in favor of all applies to any party hereto and also applies to and inures to the benefit of and shall also bind all of the heirs, legal representatives successors and assigns of such party.

12. Nothing in this judgment contained shall prevent any stipulating party from selling or otherwise disposing of or purchasing or otherwise acquiring any rights to extract water from the Basin which may be adjudged to belong to any other stipulating party; but any such right to acquire or to dispose of shall remain subject to any limitation or restrictions herein expressed.

13. The stipulating parties will unite in opposing any new taking

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SAN BERNARDINO, CALIFORNIA

of water from the Basin by other than a stipulating party or parties and will prorate the expenses in making such opposition, including litigation or engineering expenses, provided that:

(a) The term "new taking" shall not include any water development in the Basin hereafter made for the sole purpose of maintaining but not increasing any quantity of water now being taken from the Basin by the person who may hereafter make such development; or in the exercise by any person of an overlying right who is not a stipulating party.

(b) If any stipulating party does not join in prosecuting any future suit to prevent, enjoin or limit any such new or unlawful taking, such stipulating party not so joining shall bear proratably the expenses of such suit, including attorneys' fees and engineering fees, only if final judgment is rendered in such suit preventing enjoining or limiting such taking.

14. No stipulating party shall be entitled to recover court costs from any other stipulating party in this proceeding.

15. The court will retain jurisdiction to enter modifications of this decree upon a finding of changed circumstances.

16. In the event through litigation of the supply of water in the Basin, or by reason of adjudication in any subsequent action, the stipulating parties in the aggregate shall be unable to pump and extract from the Basin a quantity of water so great as the aggregate water is set forth herein, the stipulating parties shall prorate the aggregate quantity of water available in the Basin as long as such inability shall continue.

17. The listing herein of any number of acre feet for any party to this action other than a stipulating party shall not be deemed an admission by any stipulating party that a non-stipulating party is entitled to any water whatsoever from the Basin, nor as to the quantity which such non-stipulating party may take from the Basin, but each such figure for any non-stipulating party is listed in order that the stipulating parties may between themselves agree as to their rights to extract water on account of acquisition of the wells of non-stipulating parties.

18. As between stipulating parties only no extraction of water

from the Basin by any stipulating party in excess of the amount herein provided to be taken by such party shall be deemed adverse to any other stipulating party, and each stipulating party hereby waives as against each other stipulating party the right to plead any statute of limitation or latches with respect to water extracted by such party in excess of such amount.

19. No objection shall ever be made by any party to this judgment as to the interest or right of any such party as herein defined or as to the validity of this judgment not so defining such interest or right on the ground that such interest or right as so defined is not consistent with or warranted by the pleadings in this action relative thereto, and if in any case it shall appear that any such interest or right as so defined is in fact not consistent with or warranted by such pleadings then such pleadings shall be deemed and treated as amended to conform to and sustain such interest and right as herein defined, and said pleadings shall be deemed sufficient to support this judgment.

Each of the parties to this judgment waives all right of appeal therefrom and no appeal shall be taken by any party hereto from this judgment or any part thereof and the same shall constitute a final judgment.

DONE IN OPEN COURT this 24th day of November, 1964.

Judge of the Superior Court

BURR & MELLYER
ATTORNEYS AT LAW
SAN BERNARDINO, CALIFORNIA

DESCRIPTION OF BOUNDARIES OF RIALTO BASIN

BEGINNING at a point on the centerline of Meridian Avenue, as shown on plat of Town of Rialto and Adjoining Subdivisions, as recorded in Map Book 4, page 11, records of the County Recorder of said County, said point being 950 feet North of the intersection of said Meridian Avenue and San Bernardino Avenue, thence Northwesterly to a point on the centerline of Rialto Avenue (Arrow Route) as shown on said subdivision plat, said point being 400 feet East of the intersection of West Rialto Avenue and Cactus Avenue; thence Northwesterly to a point on the center line of Foothill Boulevard (State Highway Route No. 9), said point being 1,050 feet East of the intersection of said Foothill Boulevard and Linden Avenue, said intersection being the Southwest corner of Section 3, T1S, R5W, SBB&M; thence Northwesterly to a point in said Linden Avenue, said point being 700 feet North of said Foothill Boulevard; thence Northwesterly to a point in the centerline of Laurel Avenue as shown on said subdivision plat, said point being 3,600 feet North of said Foothill Boulevard; thence Northwesterly to the intersection of Alder Avenue and Baseline Road, said intersection being the Southeast corner of Section 32, T1N, R5W, SB9&M; thence Northwesterly to a point at the base of the San Gabriel Mountains, said point being 1,100 feet North and 1,400 feet West of the Southeast corner of Section 15, T1N, R6W, SBE&M; thence Northeasterly along the base of the San Gabriel Mountains in a direct line to a point in the East line of Section 13, T1N, R6W said point being 3,700 feet North of the Southeast corner of said Section 13; thence Northeasterly along the base of the San Gabriel Mountains in a direct line to a point in fractional Section 7, T1N, R5W, said point being 2,200 feet North and 3,700 feet East of the Southwest corner of said Section 7; thence Southeasterly to a point in Muscupiabe Rancho, said point being 2,500 feet North and 950 feet East of the Southwest corner of fractional Section 22, T1N, R5W, SBB&M; thence Southeasterly to a point in said Muscupiabe Rancho, said point being 700 feet North and 3,700 feet East of the Southwest corner of said fractional Section 22, thence Southeasterly to a point in said Muscupiabe Rancho, said point being 4,000 feet North and 2,500 feet East of the Southwest corner of fractional Section 26, T1N, R5W, SBB&M; thence Southeasterly to a point in fractional Section 6, T1S, R4W, SBB&M, said point being 1,500 feet North and 4,300 feet East of the Southwest corner of said fractional Section 6; thence Southeasterly to a point on the centerline of Mill Street, as shown on plat The Martin Tract, as recorded in Map Book 3, page 27, Records of the County Recorder of said County, said point being 1,050 feet West of the intersection of said Mill Street and Mt. Vernon Avenue; thence Southwesterly to the point of beginning.

Exhibit 1

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1S/4W-18B2	E-70c	705 feet South of center line Mill Street, 1,085 feet West of Rancho Avenue	370
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1S/4W-18K1	E-70e	47 feet South of center line Citrus Avenue, 87 feet East of West line of Northeast 1/4 of Section 18	360
1N/5W-17K1	D-1170b	3,937 feet measured Southeasterly along the center line of Riverside Avenue from its intersection with the North line of Section 17, and 352 feet Southwest of the center line of Riverside Avenue measured at right angles	90
1N/5W-17G1	D-1170d	3,625 feet measured Southeasterly along the center line of Riverside Avenue from its intersection with the North line of Section 17, and 161 feet Southwest of the center line of Riverside Avenue measured at right angles	90
1N/5W-28J1	D-1177a	63 feet West of Linden Avenue, 45 feet South of Vineyard 0.36 miles North of Highland Avenue	40
1N/5W-31A1	D-1166	66 feet South of center line of Highland Avenue 361 feet East of center line of Juniper	370

Exhibit "2"

SURR & HELLYER
Attorneys at Law
599 Arrowhead Avenue
San Bernardino, California
Telephone: TUrner 4-4704

Attorneys for Lytle Creek Water and Improvement Company and Citizens Land and Water Company of Bloomington



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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SAN BERNARDINO

THE LYTLE CREEK WATER AND IMPROVEMENT COMPANY, a corporation, Plaintiff, vs. FONTANA RANCHOS WATER COMPANY, a corporation; HIGHLAND AVENUE WATER COMPANY, a corporation; CITIZENS LAND AND WATER COMPANY OF BLOOMINGTON, a corporation; CITY OF RIALTO, a municipal corporation; and CITY OF COLTON, a municipal corporation; et al., Defendants.	No. 81264 DECREE

WHEREAS, there has been filed in the above-entitled action a Stipulation for Judgment duly executed by and on the part of each and all of the following named parties to said action (who are collectively hereinafter referred to as "stipulating parties"), to-wit: The Lytle Creek Water and Improvement Company, a corporation (hereinafter referred to as "Lytle Creek"); Citizens Land and Water Company of Bloomington, a corporation (hereinafter referred to as "Citizens"); Fontana Union Water Company, a corporation (hereinafter referred to as "Fontana Union"); City of Colton, a municipal corporation (hereinafter referred to as "Colton"); City of Rialto, a municipal corporation (hereinafter referred to as "Rialto"); and Semi-Tropic County Water District, a county water district organized and existing under the California County Water District Law (hereinafter referred to as "Semi-Tropic"); and

WHEREAS, the Fontana Union was sued herein as John Doe

Company No. 1, a corporation, and the Complaint herein should be amended accordingly; and

WHEREAS, it appears that Semi-Tropic should be joined as a defendant in this action; and

WHEREAS, the action has been dismissed as to each of the defendants Fontana Ranchos Water Company, a corporation, and Highland Avenue Water Company, a corporation; and

WHEREAS, the Court has heard and considered evidence on the part of the various stipulating parties; and

WHEREAS, the parties have in said Stipulation for Judgment waived Findings of Fact and Conclusions of Law;

NOW, THEREFORE, IT IS HEREBY ORDERED, ADJUDGED, AND DECREED as follows:

1. The Complaint herein is hereby amended to set forth the true name of the defendant John Doe Company No. 1, a corporation, which is Fontana Union Water Company, a corporation.

2. Semi-Tropic County Water District is hereby joined as a defendant in this action.

3. As used herein the terms listed below shall have the respective meanings next following them, viz:

(a) "Rialto Basin" or "Basin" shall mean that certain territory in the County of San Bernardino, State of California, which is more particularly described upon Exhibit "1", and which also includes all percolating water and underground water and water sources underlying said territory.

(b) "Year" shall mean a twelve month period commencing on October 1 and ending on the next following September 30.

(c) "Acre Foot" of water shall mean that quantity of water which will cover one acre to a depth of one foot, also being 43,560 cubic feet, and which also is equal to a flow of 25.208 miner's inches of water for 24 hours.

4. Except as provided herein no stipulating party shall have any priority to take water from the Basin, and the rights of the parties to take

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water from the Basin as between themselves are set forth herein.

5. Subject to the pro rata reductions hereinafter set forth, the amount of water in acre feet to which the stipulating parties are respectively entitled to extract from the Basin in each year are as follows:

Colton	3,010 acre feet - 3400
Rialto	1,580 acre feet - 3100
Citizens	3,260 acre feet
Fontana Union	550 acre feet — 970 - 7000
Lytle Creek	3,600 acre feet

6. The following described wells in the Basin are designated and referred to herein as index wells for the purpose of determining the elevation above sea level of the ground waters within the Basin. These wells are as follows:

(a) "Duncan Well" - presently owned by Rialto, having State Location No. 1S/5W-3A1, State Serial No. D-1084, located 109 feet South of the center line of Baseline and 233 feet West of the center line of Cactus Avenue.

(b) "Willow Street Well" - presently owned by Lytle Creek, having State Location No. 1S/5W-2K1, State Serial No. D-1085, located 202 feet East of the center line of Willow Street and 133 feet North of the center line of Victoria Avenue.

(c) "Boyd Well" - presently owned by Citizens, having State Location No. 1S/5W-12L1, State Serial No. D-1095, located 109 feet West of the center line of Eucalyptus Street and 155 feet North of the center line of Wilson Street.

For the purpose of determination of the elevation of water above sea level in the said index wells, the elevation above sea level of each of the index wells is established as follows:

(a) "Duncan Well"

(b) "Willow Street Well"

(c) "Boyd Well"

If for any reason any or all of said wells shall not be available

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for measurement, the identity and location of a substitute index well or wells may be determined by a written stipulation executed by at least three-fourths in number of the stipulating parties (or their successor(s) in interest) and filed in this action, or in default of said stipulation, by order of this Court.

The elevation of the water level above sea level of each of the index wells shall be measured in each of the months of March, April, and May in each year. Each stipulating party shall be entitled from time to time to designate one individual to be present and observe such measurements. Measurements shall be made by the owners of the respective wells or such other person, firm or corporation which three-fourths in number of the stipulating parties shall designate to do so. Such measurements shall be made at such times as the index well measured is not being pumped and has not been pumped within the preceding twenty-four hours.

7. As used herein the term "spring-high water level" for a year at each of the index wells shall mean the highest elevation in feet above sea level of the surface of the water table which shall be measured in each respective index well at any one of the monthly measurements during either March, April, or May.

In any year in which the average of the elevation of the spring-high water level in the three index wells is above elevation 1002.3 feet above mean sea level, no stipulating party shall be limited in the amount of water which may be pumped from the Basin. However, no stipulating party shall acquire any additional right to extract water from the Basin by reason of extracting more than such party is entitled under paragraph 5 above.

In any year in which the average of the elevations of the spring-high water level in the three index wells is between 1002.3 feet above mean sea level and 969.7 feet above mean sea level, each party shall be entitled to pump from the Basin in such year only the amount of water to which such party is entitled as specified in paragraph 5 above.

In any year in which the average of the elevations of the spring-high water level in the three index wells is below 969.7 feet above mean sea level, then the amount of water which the stipulating parties shall

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be entitled to pump from the Basin during such year shall be reduced ten per cent (10%) for each one (1) foot that the said average is below 969.7 feet above mean sea level.

9. If any stipulating party acquires any of the wells located within the Basin which are described on Exhibit "2", which is attached hereto and hereby incorporated herein, such party shall have the additional right to extract water from the Rialto Basin annually in the amount set forth on said Exhibit "2" opposite the description of the respective wells.

10. Each stipulating party shall maintain records of all extractions of water from the Basin so that it can be determined therefrom what extraction of water was taken from each well or combination of wells or other water sources in the Basin from which such party received water in each year.

Upon written demand of any stipulating party, the party keeping such records shall within thirty (30) days after receipt of such demand supply to the party making such demand, or other person designated by such party in such demand, a written statement of the amount of water (in acre feet) so taken from each such well or combination of wells or other sources for each year after 1961 with respect to which no such statement has previously been supplied.

11. Every provision of this judgment in favor of all applies to any party hereto and also applies to and inures to the benefit of and shall also bind all of the heirs, legal representatives, successors and assigns of such party.

12. Nothing in this judgment contained shall prevent any stipulating party from selling or otherwise disposing of or purchasing or otherwise acquiring any rights to extract water from the Basin which may be adjudged to belong to any other stipulating party; but any such right to acquire or so dispose of shall remain subject to any limitation or restrictions herein expressed.

13. The stipulating parties will unite in opposing any new taking of water from the Basin other than a stipulating party or parties and will prorate the expenses in making such opposition, including litigation or engineer-

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ing expenses, provided that:

(a) The term "new taking" shall not include any water development in the Basin hereafter made for the sole purpose of maintaining but not increasing any quantity of water now being taken from the Basin by the person who may hereafter make such development.

(b) If any stipulating party does not join in prosecuting any future suit to prevent, enjoin or limit any such new or unlawful taking, such stipulating party not so joining shall bear proratably the expenses of such suit, including attorneys' fees and engineering fees, only if final judgment is rendered in such suit preventing enjoining or limiting such taking.

14. No stipulating party shall be entitled to recover court costs from any other stipulating party in this proceeding.

15. The Court will render jurisdiction to enter modifications of this decree.

16. In the event through litigation of the supply of water in the Basin, or by reason of adjudiciation in any subsequent action, the stipulating parties in the aggregate shall be unable to pump and extract from the Basin a quantity of water so great as the aggregate water is set forth herein, the stipulating parties shall prorate the aggregate quantity of water available in the Basin as long as such inability shall continue.

17. The listing herein of any number of acre feet for any party to this action other than a stipulating party shall not be deemed an admission by any stipulating party that a non-stipulating party is entitled to any water whatsoever from the Basin, nor as to the quantity which such non-stipulating party may take from the Basin, but each such figure for any non-stipulating party is listed in order that the stipulating parties may between themselves agree as to their rights to extract water on account of acquisition of the wells of non-stipulating parties.

18. As between stipulating parties only no extraction of water from the Basin by any stipulating party in excess of the amount herein provided to be taken by such party shall be deemed adverse to any other stipulating party, and each stipulating party hereby waives as against each other stipulating

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party the right to plead any statute of limitation or latches with respect to water extracted by such party in excess of such amount.

19. No objection shall ever be made by any party to this judgment as to the interest or right of any such party as herein defined or as to the validity of this judgment not so defining such interest or right on the ground that such interest or right as so defined is not consistent with or warranted by the pleadings in this action relative thereto, and if in any case it shall appear that any such interest or right as so defined is in fact not consistent with or warranted by such pleadings then such pleadings shall be deemed and treated as amended to conform to and sustain such interest and right as herein defined, and said pleadings shall be deemed sufficient to support this judgment.

Each of the parties to this judgment waives all right of appeal therefrom and no appeal shall be taken by any party hereto from this judgment or any part thereof and the same shall constitute a final judgment.

DONE IN OPEN COURT this _____ day of _____, 1961.

_____
Judge of the Superior Court

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SAN BERNARDINO, CALIFORNIA

DESCRIPTION OF BOUNDARIES OF RIALTO BASIN

BEGINNING at a point on the centerline of Meridian Avenue, as shown on plat of Town of Rialto and Adjoining Subdivisions, as recorded in Map Book 4, page 11, records of the County Recorder of said County, said point being 950 feet North of the intersection of said Meridian Avenue and San Bernardino Avenue; thence Northwesterly to a point on the centerline of Rialto Avenue (Arrow Route) as shown on said subdivision plat, said point being 400 feet East of the intersection of West Rialto Avenue and Cactus Avenue; thence Northwesterly to a point on the center line of Foothill Boulevard (State Highway Route No. 9), said point being 1,050 feet East of the intersection of said Foothill Boulevard and Linden Avenue, said intersection being the Southwest corner of Section 3, T1S, R5W, SBB&M; thence Northwesterly to a point in said Linden Avenue, said point being 700 feet North of said Foothill Boulevard; thence Northwesterly to a point in the centerline of Laurel Avenue as shown on said subdivision plat, said point being 3,600 feet North of said Foothill Boulevard; thence Northwesterly to the intersection of Alder Avenue and Baseline Road, said intersection being the Southeast corner of Section 32, T1N, R5W, SBB&M; thence Northwesterly to a point at the base of the San Gabriel Mountains, said point being 1,100 feet North and 1,400 feet West of the Southeast corner of Section 15, T1N, R6W, SBB&M; thence Northeasterly along the base of the San Gabriel Mountains in a direct line to a point in the East line of Section 13, T1N, R6W, said point being 3,700 feet North of the Southeast corner of said Section 13; thence Northeasterly along the base of the San Gabriel Mountains in a direct line to a point in fractional Section 7, T1N, R5W, said point being 2,200 feet North and 3,700 feet East of the Southwest corner of said Section 7; thence Southeasterly to a point in Muscupiabe Rancho, said point being 2,500 feet North and 950 feet East of the Southwest corner of fractional Section 22, T1N, R5W, SBB&M; thence Southeasterly to a point in said Muscupiabe Rancho, said point being 700 feet North and 3,700 feet East of the Southwest corner of said fractional Section 22, thence Southeasterly to a point in said Muscupiabe Rancho, said point being 4,000 feet North and 2,500 feet East of the Southwest corner of fractional Section 26, T1N, R5W, SBB&M; thence Southeasterly to a point in fractional Section 6, T1S, R4W, SBB&M, said point being 1,500 feet North and 4,300 feet East of the Southwest corner of said fractional Section 6; thence Southeasterly to a point on the centerline of Mill Street, as shown on plat The Martin Tract, as recorded in Map Book 3, page 27, Records of the County Recorder of said County, said point being 1,050 feet West of the intersection of said Mill Street and Mt. Vernon Avenue; thence Southwesterly to the point of beginning.

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1N/5W-31A1	D-1176	66 feet South of center line of Highland Avenue 361 feet East of center line of Juniper	370

Exhibit "2"

2015 San Bernardino Valley RUWMP

Appendix L

AGREEMENT BETWEEN

RIVERSIDE HIGHLAND WATER COMPANY AND CITY OF RIVERSIDE

THIS AGREEMENT is entered into as of the 15th day of January, 1992 by and between RIVERSIDE HIGHLAND MUTUAL WATER COMPANY (hereinafter "COMPANY"), and the CITY OF RIVERSIDE, a California Charter City (hereinafter "CITY").

R E C I T A L S

A. The CITY intends to provide domestic water within the current corporate limits of the City of Riverside to various developments including the Hunter Industrial Park.

B. The COMPANY presently provides water to its shareholders within this area for the purposes of agricultural and domestic supply, and the shareholders desire to continue to obtain agricultural water for agricultural purposes within the area until the land is developed for other purposes.

C. The parties to this AGREEMENT desire to define and set the service area to be served by each entity to provide for the orderly provision of water service within a developing area formerly served by the COMPANY.

C O V E N A N T S

NOW THEREFORE, in consideration of the preceding recitals and the mutual covenants contained herein, the parties agree as follows:

Section 1. BOUNDARIES. The parties agree that the boundaries of that portion of the service area of the COMPANY will be described as depicted in EXHIBIT "A" attached hereto and incorporated herein by reference. These boundaries include certain areas outside the corporate limits of the City of Riverside which lie below the 1200 foot elevation, south of Marlborough Avenue and west of Michigan Avenue. The parties further agree that these boundary changes shall be recorded with the Riverside County Recorder and filed with the California Department of Corporations and shall be considered the fixed service area of the COMPANY.

Section 2. SHAREHOLDERS OF COMPANY. The COMPANY agrees to identify those of its existing shareholders who or which will be affected by the provision of water service by the CITY within the area covered by this AGREEMENT and the number of shares each shareholder holds.

Section 3. CITY TO PURCHASE SHARES. The CITY agrees to make a good faith effort to purchase the COMPANY shares (approximately 1337) as development occurs from the shareholders within the Hunter Industrial Park area or other areas identified by the COMPANY at a price negotiated between the CITY and the shareholders. The City shall provide the COMPANY with a written notification for any shareholder declining to sell shares to the CITY. The COMPANY shall make available, and the CITY shall purchase, such additional shares from the COMPANY at the then current price established by the COMPANY for "treasury shares" up to an amount equivalent to the number of shares within the service area of the CITY within the Hunter Industrial Park area or other developments. Pursuant to the acquisition of the shares of the COMPANY, the CITY shall maintain all the voting rights consistent with the voting rights of other shareholders, except the CITY agrees to limit its representation on the COMPANY'S Board of Directors at any time to no more than two (2) members.

Section 4. SERVICE AND TERM.

Section 4.1. COMPANY TO PROVIDE SERVICE. The COMPANY agrees to provide domestic/drinking water directly to the CITY transmission system in an equivalent amount, per share, as is delivered to all other shareholders. Currently, this amount is 0.37 acre feet per year per share of stock. CITY agrees to pay for such water, on a bimonthly basis, the adopted domestic water rate established by the COMPANY for all shareholders, as set forth in Exhibit "B" attached hereto and incorporated herein by reference. CITY agrees to pay the COMPANY for assessments levied on shares held by the CITY under the same terms and conditions as all other shareholders. Said payment for assessments shall continue for a minimum of ten (10) years after the shares are purchased.

Section 4.2 IRRIGATION BY COMPANY. CITY agrees that COMPANY may continue to supply irrigation water for agricultural purposes to its remaining shareholders within the water service area annexed to the CITY.

Section 4.3 MINIMUM TERM OF AGREEMENT. The initial term of this agreement shall be ten (10) years from the date of execution hereof. At the conclusion of that initial term, the CITY may sell its COMPANY shares to third parties, terminate the payment of the assessment, take no further water from the COMPANY,

and relinquish the shares to the COMPANY as undistributed treasury shares.

Section 5. ELECTION BY THE CITY. The CITY may elect not to take water deliveries directly from COMPANY, but in lieu thereof to extract from CITY wells within the Bunker Hill Basin the amount of water equivalent to the amount of entitlement under the COMPANY shares held by the CITY, and deliver the water directly to the distribution system of the CITY. The COMPANY does not warrant the quality of water taken by the CITY under this election. If the CITY elects to extract its entitlement from CITY wells, CITY shall pay to the COMPANY, in addition to the assessment as provided in Section 4, an amount to cover the cost of accounting for the water extracted from CITY wells. Said amount shall be $10.00 per month plus $3.02 per acre foot of water per year subject to adjustment by the same percentage that the COMPANY applies for annual increases to its customers. Such election shall not adversely affect the water rights of the COMPANY within the Bunker Hill Basin as set forth in the judgement entitled Western Municipal Water District, et al, v. east San Bernardino County Water District, et al, Riverside County Superior Court No. 78426.

Section 6. METER. The City shall install a meter and appropriate appurtenances at a mutually agreeable location or locations to measure the water delivered in accordance with this AGREEMENT. The COMPANY agrees that no meter fee will be charged for this connection to the COMPANY'S water system. The CITY shall maintain such meter at no expense to the COMPANY, and will allow the COMPANY to inspect and test the meter at the COMPANY's expense.

Section 7. INDEMNIFY COMPANY. The City shall indemnify and hold the COMPANY harmless from any litigation brought by any third parties challenging the terms, provisions, or legality of the AGREEMENT or any action of the CITY taken pursuant thereto.

Section 8. NOTICES. Any notice, tender or delivery to be given hereunder by either party to the other shall be effected by personal delivery in writing or by registered or certified mail, postage prepaid, return receipt requested, and shall be deemed communicated as of mailing or, in case of personal delivery, as of actual receipt. Mailed notices shall be addressed as set forth below, but each party may change its address by written notice in accordance with this section.

TO: RIVERSIDE HIGHLAND WATER COMPANY
1450 Washington Street
Colton, CA. 92324

TO: CITY OF RIVERSIDE
Public Utilities Department
3900 Main Street
Riverside, CA. 92522

Section 9. ARBITRATION OF DISPUTES. Any dispute or controversy arising out of, under, or in connection with or in relation to this AGREEMENT, or any amendments hereof, or the breach hereof, shall be submitted to arbitration in accordance with the following procedures:

A party desiring arbitration ("First Party") shall give written notice to the other party ("Second Party") containing a general description of the issues to be arbitrated, and designating by name and address, three proposed arbitrators acceptable to the First Party, each of whom shall have agreed to act as arbitrator, if selected. If the Second Party agrees upon one of the three proposed arbitrators, the Second Party shall so advise the First Party in writing within ten (10) business days of receipt of the First Party's written notice.

The arbitrator selected shall promptly give written notice of a proposed arbitration hearing which shall take place within sixty (60) days of the date of the arbitrator's selection.

The arbitration hearing shall take place in Riverside, California. If the Second Party fails to agree to the selection of one of the three proposed arbitrators within the ten (10) business day period, an arbitrator shall be appointed in accordance with the California Arbitration Act, Section 1280 through 1294.2 of the Code of Civil Procedure.

The cost of the arbitration shall be paid by the Parties equally. Except as otherwise provided herein, the arbitration shall be conducted and enforced in accordance with the provisions of the California Arbitration Act, Section 1280 through 1294.2 of the Code of Civil Procedure.

Section 10. ATTORNEYS' FEES. If a dispute arises, which cannot be resolved by arbitration, regarding breach, enforcement, or arbitration, of the provisions of this AGREEMENT, the prevailing party in any legal action brought in connection therewith shall be entitled to recover all attorneys' fees or other costs actually incurred therewith. In any action brought, the entitlement to recover attorneys' fees and costs will be considered an element of costs and not of damages.

Section 11. AMENDMENTS. This is an entire AGREEMENT and supersedes any and all prior agreements, oral or written, between the parties. This AGREEMENT may only be amended in writing, with specific reference hereto by parties authorized to be charged. Failure by either party to enforce any provisions shall not constitute a waiver of said partys' right to enforce the provision upon subsequent violation thereof or any other provisions.

Section 12. SUCCESSORS AND ASSIGNS. This AGREEMENT shall be binding upon and insure to the benefit of the successors and assigns of the parties.

Section 13. CAPTIONS. The captions of section and subsections of this AGREEMENT are for reference only and are not to be construed in any way as a part of this agreement.

Section 14. VALIDITY. This Agreement will be construed in accordance with the laws of the State of California.

IN WITNESS WHEREOF, the parties have caused this AGREEMENT to be executed by their respective officers as of the date first above written.

RIVERSIDE HIGHLAND MUTUAL WATER COMPANY

By _____
President

CITY OF RIVERSIDE

APPROVED AS TO FORM
_____
ASST. CITY ATTORNEY
1/4/92

By _____
Mayor

By _____
KAREN E. [illegible]
City Clerk

_____
[illegible]

EXHIBIT "B"

DOMESTIC WATER RATES

1. Domestic Water Billing (Section 4.1) Subject to Periodic Rate Adjustment by the Board of Directors as for All Other Domestic Water Users:

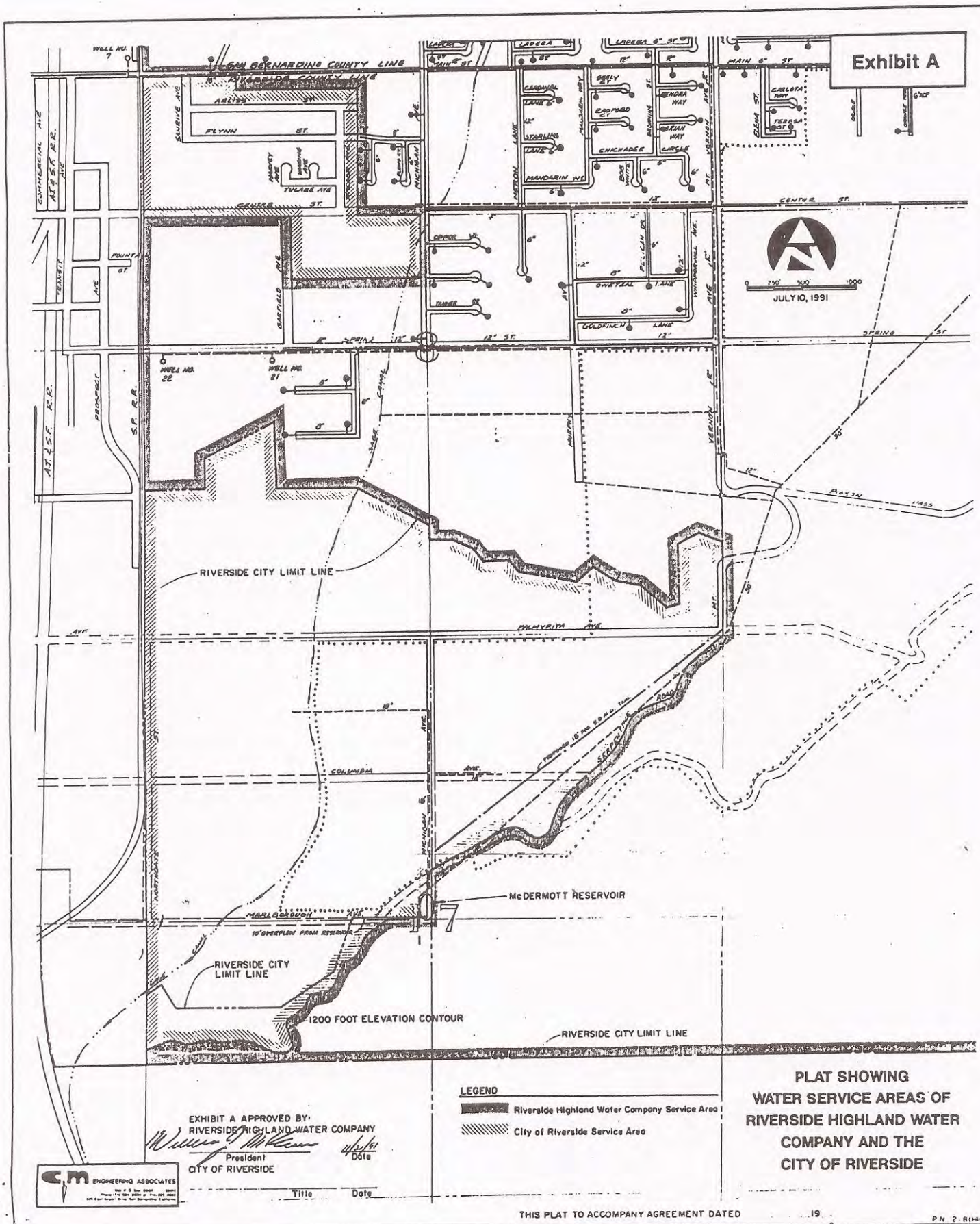
   A. Published Share Assessment as of April 1, 1991:

      Bimonthly Assessment = $4.25 per share

   B. Bimonthly Bill for Water - using Domestic Consumption Rate as of April 1, 1991:

      0 to 119.7 acre feet @ $0.56/100 cu. ft.

      119.7 to 214.87 acre feet @ $0.72/100 cu. ft.


Exhibit A
SAN BERNARDINO COUNTY LINE
RIVERSIDE CITY LIMIT LINE
McDERMOTT RESERVOIR
10' OVERFLOW FROM RESERVOIR
RIVERSIDE CITY LIMIT LINE
1200 FOOT ELEVATION CONTOUR
RIVERSIDE CITY LIMIT LINE
JULY 10, 1991
0 250' 500' 1000'
LEGEND
Riverside Highland Water Company Service Area
City of Riverside Service Area
PLAT SHOWING
WATER SERVICE AREAS OF
RIVERSIDE HIGHLAND WATER
COMPANY AND THE
CITY OF RIVERSIDE
EXHIBIT A APPROVED BY:
RIVERSIDE HIGHLAND WATER COMPANY
President
Date
CITY OF RIVERSIDE
Title
Date
C.M ENGINEERING ASSOCIATES
THIS PLAT TO ACCOMPANY AGREEMENT DATED 19
P.N. 2-8(H&R)
CM 6383

2015 San Bernardino Valley RUWMP

Appendix M

Lease Agreement Between

Western Municipal Water District of Riverside County
And
Riverside Highland Water Company

This Agreement is entered into this 1 day of January, 2015 ("Effective Date"), by and between WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY ("WESTERN") and RIVERSIDE HIGHLAND WATER COMPANY ("RHWC")

Recitals

a. Under the Judgment in Western Municipal Water District of Riverside County v. East San Bernardino County Water District, et al., Riverside County Superior Court Case No. 78426 (1969) ("Western Judgment" or "Judgment"), RHWC or its predecessors in interest are entitled to produce and export water from the San Bernardino Basin Area ("SBBA").

b. During the Calendar Year 2015, Western wishes to lease up to 1,500 acre-feet of RHWC's Adjusted Right[1], as defined in Western Judgment and as adjusted for New Conservation[2], to produce and export water from the SBBA.

c. Western owns two shares of stock in RHWC and is current on all assessments related to stock ownership in RHWC.

NOW, THEREFORE, the parties agree as follows:

1. Commencing on January 1, 2015, and terminating on December 31, 2015, RHWC agrees to lease to Western up to 1,500 acre-feet of RHWC's Adjusted Right to produce and export water from the SBBA.

2. Western agrees to pay RHWC $139 per acre-foot of water produced and delivered pursuant to this Agreement.

3. RHWC is not responsible for any cost related to the San Bernardino Valley Water Conservation District "Groundwater Charge" for water produced for Western by the City of Riverside pursuant to this lease.

4. Watermaster will account for the production of the actual amount of leased water against RHWC's Adjusted Right for Calendar Year 2015.

---

[1] The Judgment provides that the annual "adjusted right" of each Plaintiff (including RHWC) to extract and export water from the SBBA is the sum of (a) its base right, which was determined based on a percentage of safe yield; and (b) a proportionate percentage of any new conservation, provided the conditions described in the Judgment are met.

[2] "New Conservation" is defined in the Western Judgment as "[a]ny increase in replenishment from natural precipitation which results from operation of works and facilities not now in existence, other than those works installed and operations which may be initiated to offset losses caused by increased flood control channelization."

5. Upon termination of this Agreement, Western may request that RHWC purchase the shares of RHWC stock owned by Western. If Western so requests, RHWC will repurchase the shares within sixty (60) days of Western's request, at the then-prevailing value for such shares.

6. This lease is contingent upon the ability of the City of Riverside to produce and convey the leased water rights for delivery to Western during the Calendar Year 2015.

7. Western agrees to indemnify and hold RHWC free and harmless from any liability, loss or other damage claims or financial obligations caused by, or arising from, such lease.

By: _____

John Rossi, General Manager
Western Municipal Water District of Riverside County

By: _____

Don Hough General Manager
Riverside Highland Water Company

2015 San Bernardino Valley RUWMP

Appendix N

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Attachment 1 – Earthquake Literature Search

1 Background

This appendix addresses vulnerability of the region's water supply system to catastrophic events that may interrupt the water supply system in the Upper Santa Ana IRWM Plan Region (region). California Water Code Section 10632 (c) requires that Urban Water Management Plans address catastrophic supply interruptions. While not the only cause for catastrophic water supply interruption, the postulated Magnitude 8+ Earthquake certainly will be the predominant example in the region. Since a large magnitude earthquake is generally considered the most significant event for the region, we will concentrate on earthquake effects as our primary water supply interruption, knowing that other events would be treated similarly. Literature to be reviewed includes post-earthquake surveys of water system damage, earthquake planning reports, purveyor's Urban Water Management Plans and available reports prepared by the Department of Water Resources. We have concentrated the following discussions with a magnitude 8+ earthquake. Other catastrophic interruptions caused by regional power failure, terrorist attack, or other man-made or natural catastrophic event could cause similar conditions and issues to water supply systems in the region. For purposes of this report, a major earthquake is defined as an earthquake on the San Andreas Fault (SAF) on the order of 8.0.[1]

The work conducted for this appendix is intended to be the first step and is at the conceptual level. Additional detailed work should be conducted in the future to further evaluate options to effectively address water supply system vulnerabilities. This appendix includes the discussion of the following:

- An earthquake literature search of major earthquake events and what has been learned from such events.
- Evaluation of Catastrophic interruption of the regional facilities
- Vulnerabilities of region's water supply system to SWP supply interruption.
- Vulnerably of local purveyors' system to an earthquake .
- Summary of Finding and Recommendations including Water Shortage Contingency Plan

[1] The California Division of Mines and Geology has prepared two "Planning Scenarios" for major earthquakes in southern California. The first was a Magnitude 8.3 Earthquake on the San Andreas Fault (California, 1982). The second was a magnitude 7 earthquake on the San Bernardino Valley segment of the San Jacinto Fault (California, 1993).

- Options to reduce the impacts in case of catastrophic water supply system failure.
- Water Shortage contingency planning.

The region is located in a seismically active area of Southern California. Four major fault zones are found in the region, including the San Jacinto Fault, the Chino-Corona segment of the Elsinore Fault, the Cucamonga Fault, and the San Andreas Fault (SAF). Numerous other minor faults associated with these larger fault structures may also present substantial hazards.

The SAF is a right-lateral strike-slip fault that runs approximately 800 miles through western and southern California. The fault marks a transform boundary between the Pacific Tectonic Plate and the North American Tectonic Plate.

In Southern California, the SAF runs along the southern base of the San Bernardino Mountains, crosses through Cajon Pass, and continues northwest along the northern base of the San Gabriel Mountains. Historical records indicate that massive earthquakes have occurred in the central section of the SAF in 1857 and in the northern section in 1906 (the San Francisco Earthquake). In 1857, an estimated magnitude 8+ earthquake occurred on the San Andreas Fault rupturing the ground for 200 to 275 miles, from near Cholame to Cajon Pass and possibly as far south as San Gorgonio Pass. The recurrence interval for a magnitude 8 earthquake along the total length of the fault is estimated to be between 50 and 200 years. It has been 147 years since the 1857 rupture. A study completed by Yuri Fialko (2005) suggests that the SAF in Southern California has been stressed to a level sufficient for an earthquake of magnitude 7.0 or greater.

A detailed earthquake-related literature search was conducted to prepare this report. The literature search included review of the following events and reports:

- Loma Prieta Earthquake of October 17, 1989
- Northridge Earthquake of January 17, 1994
- Santa Clara Valley Water District Water Infrastructure Reliability Project
- San Simeon Earthquake of December 22, 2003
- Denali Earthquake of November 3, 2002
- City of San Diego Water Supply Study
- City of Vancouver Regional Water Distribution System Study
- San Fernando Earthquake of 1971
- Kobe (Japan) Earthquake of January 17, 1995
- California Division of Mines and Geology Planning Scenarios

Attachment A summarized this literature search.

2 Evaluation of a Catastrophic Interruption to Regional Facilities

The California Aqueduct has been designed to "break" at the Devil Canyon Powerplant in a large earthquake.

Some of Valley District's pipelines cross the San Andreas Fault. This section evaluates the impact of a catastrophic interruption on Valley District's regional facilities used to convey SWP water supplies and specific actions that may be taken to minimize the impact on water deliveries.

2.1 Facility Evaluation

The individual facilities that were examined in this analysis are as follows:

- Foothill Pipeline
- Santa Ana River Connector (SARC) Pipeline
- Greenspot Pump Station
- Morton Canyon Connector
- Greenspot Pipeline
- Tate Pump Station
- Crafton Hills Pump Station
- Crafton Hills Reservoir
- Crafton Hills Pipeline, portion of EBX
- Yucaipa Pipeline
- Bryant Street Pipeline
- Lytle Pipeline
- Baseline Feeder System

Given a loss of each of the above facilities, the examination will include:

- How the water supply needs of the affected service area could be met.
- To what degree local groundwater and/or surface water can replace the loss of the SWP
- What projects would be required to mitigate the loss of the facility.

- What projects could be implemented to mitigate the impact of catastrophic failures of these facilities.

Figure AF-1 shows the location of Valley District's major facilities relative to fault lines.

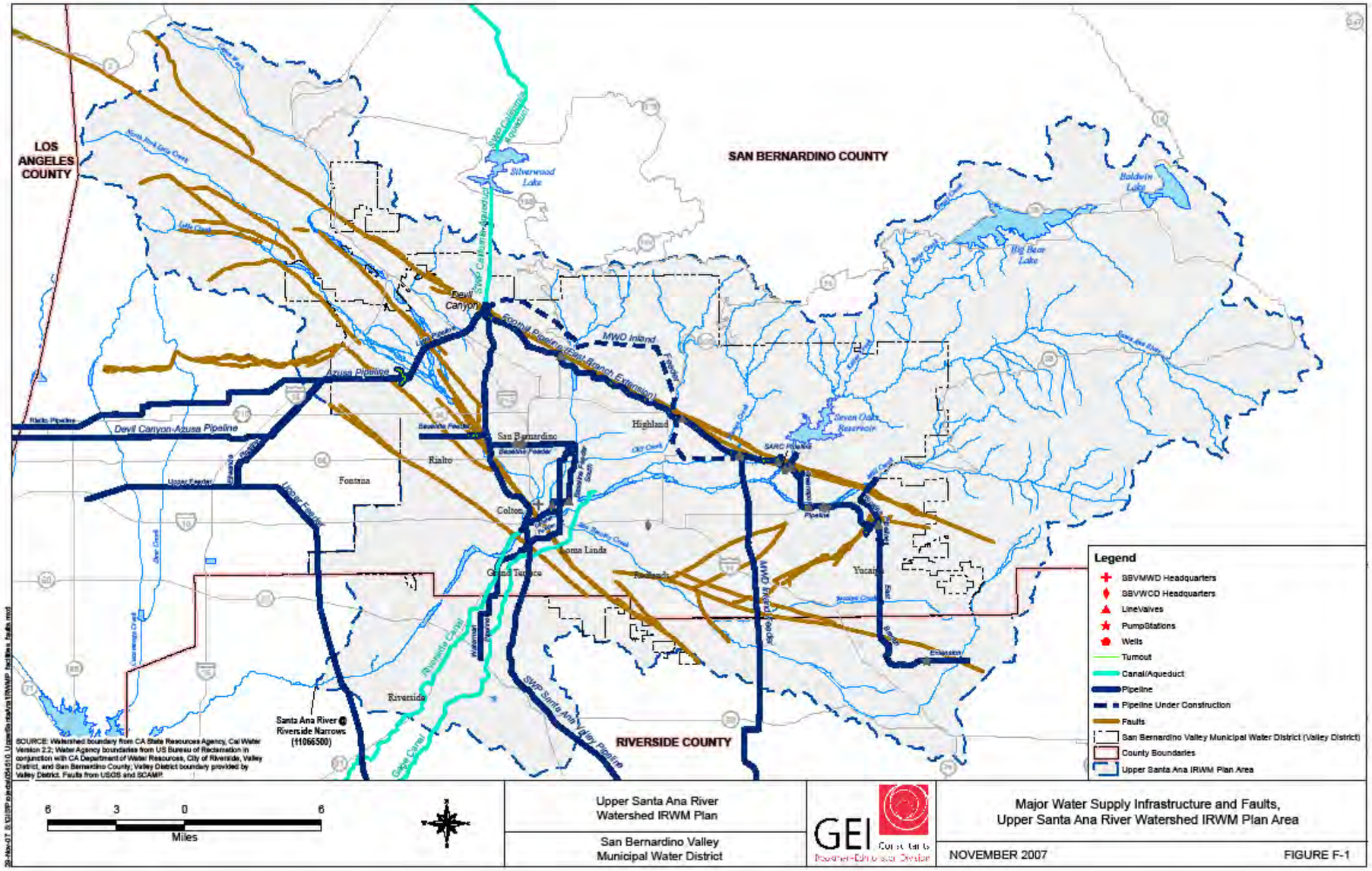
In general, Valley District direct deliveries are to surface water treatment plants that were built to treat local surface water and SWP water. Local surface water, collected and conveyed by the purveyor's own system is the least costly and highest quality. Valley District's SWP deliveries supplement these supplies.

Valley District also makes direct deliveries for irrigation. These deliveries are assumed to be able to be suspended during severe events and will not be investigated further.

Table AF-1 shows the Valley District conveyance facilities and the surface water treatment plants that receive deliveries of imported and surface water from those facilities. This table shows how interruption in each of the Valley District facilities may impact water deliveries for the local purveyors. Valley District's conveyance system is used to implement the Santa Ana-Mill Creek Cooperative Water Project and effect deliveries of local surface water and exchanges of local surface water and SWP water. Furthermore, these facilities could be used to convey local surface water from the Santa Ana River and/or Mill Creek in the east to delivery points in the west along the Lytle Creek Pipeline. In the past, Valley District has demonstrated this capability by delivering local surface water from the Santa Ana River to Devil Canyon where it was transferred to Metropolitan Water District of Southern California and conveyed to the Weymouth Water Filtration Plant.

It should also be mentioned that the California Division of Mine and Geology planning scenario for a major earthquake on the San Jacinto Fault concludes that the Santa Ana Valley (a SWP facility) Pipeline will also be damaged extensively as the fault and pipeline cross several times. Since Valley District does not have any current delivery points along this pipeline, it is not considered in this analysis.

Figure F-1
Water Supply Infrastructure and Faults



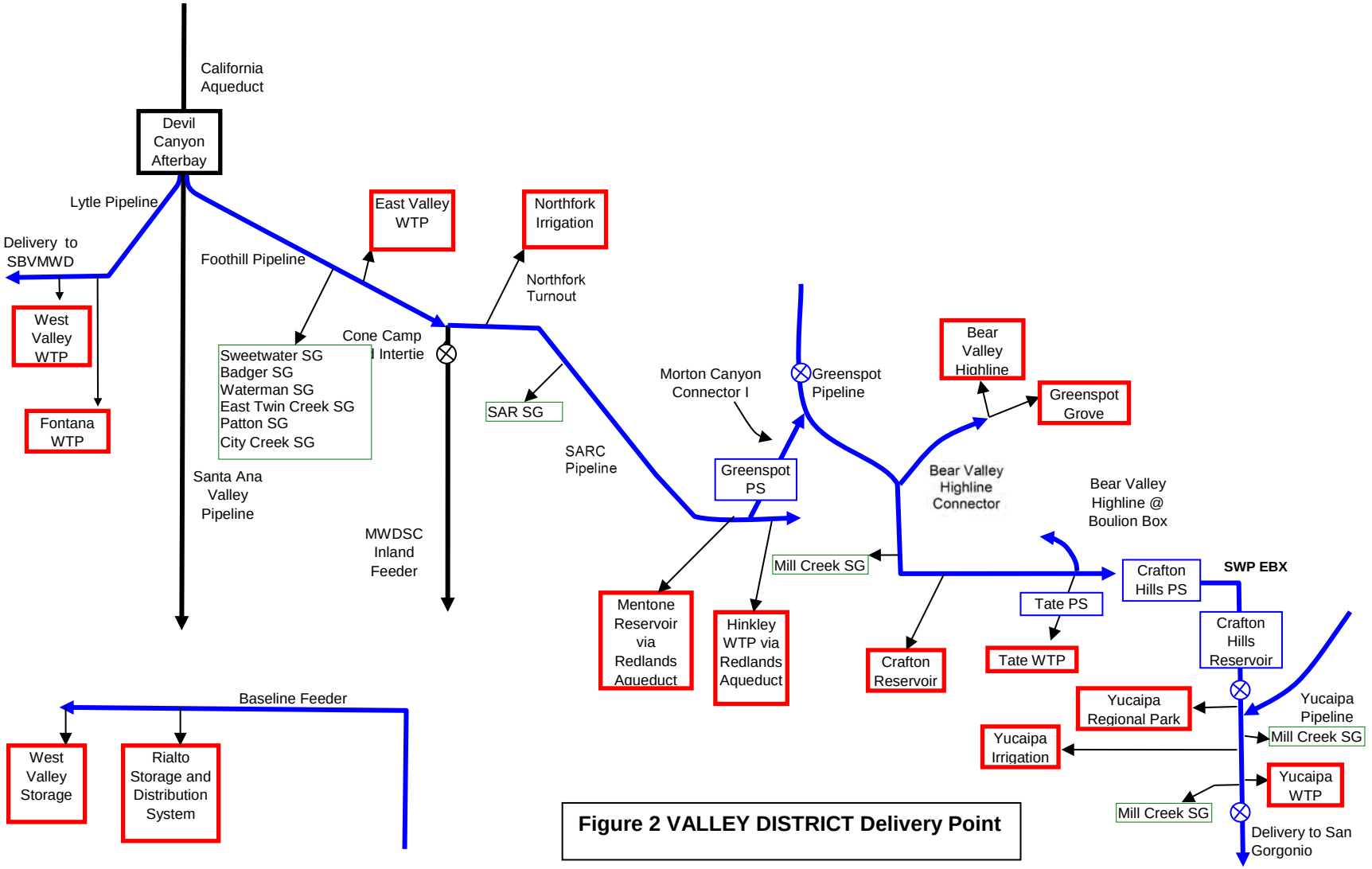


Figure 2 VALLEY DISTRICT Delivery Point

NOTE: Arrows indicate the primary flow direction. In some cases, water can also flow in the opposite direction, in an emergency, for short durations.

Table AF-1
Valley District Facilities Used to Deliver Water to Retail Agencies

Agency	Foothill Pipeline	SARC Pipeline	Morton Canyon Connector	Green-spot Pipeline	Green-spot Pump Station	Devil Canyon - Azusa	Tate Pump Station	Crafton Hills PS	Crafton Hills Reservoir	EBX[1] Reach 1 Pipeline	EBX Reach 2 Pipeline	Yucaipa Pipeline	Baseline Feeder
San Bernardino Municipal Water Department	✓	✓[2]	✓[2]	✓[2]	- -	- -	- -	- -	- -	- -	- -	- -	- -
East Valley Water District	✓	✓[2]	✓[2]	✓[2]	- -	- -	- -	- -	- -	- -	- -	- -	- -
City of Redlands – Hinckley	✓	✓	✓[3]	✓[3]	✓[3]	- -	- -	- -	- -	- -	- -	- -	- -
City of Redlands – Tate	✓	✓	✓	✓	✓	- -	✓	- -	- -	- -	- -	- -	- -
Bear Valley MWC - In lieu obligation and irrigation	✓	✓	✓	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Yucaipa Valley Water District	✓	✓	✓	✓	✓	- -	- -	✓	✓	✓	✓	✓	- -
Fontana Water Company	✓[2]	✓[2]	✓[2]	✓[2]	- -	✓	- -	- -	- -	- -	- -	- -	- -
West Valley Water District	✓[2]	✓[2]	✓[2]	✓[2]	- -	✓	- -	- -	- -	- -	- -	- -	✓
City of Rialto (SWP thru WVWD)	✓[2]	✓[2]	✓[2]	✓[2]	- -	✓	- -	- -	- -	- -	- -	- -	✓

Notes:

[1]EBX: East Branch Extension of the California Aqueduct

[2] Used only in an emergency condition to deliver Santa Ana River and/or Mill Creek water in a westerly direction.

[3] Could be used to receive a water delivery from Bear Valley Mutual Water Company

Valley District's conveyance system is used to implement the Santa Ana-Mill Creek Cooperative Water Project and effect deliveries of local surface water and exchanges of local surface water and State Project water.

The Devil Canyon - Azusa Pipeline is owned by San Gabriel Valley Municipal Water District. Valley District owns 50% of the conveyance capacity of the pipeline from Devil Canyon to the Lytle Creek area and uses this capacity to convey water to West Valley, Rialto, and Fontana. It could also be used in an emergency to convey local surface water.

The Baseline Feeder is used to convey groundwater to Rialto and West Valley. The groundwater is produced by the City of San Bernardino on behalf of Valley District and by Rialto for Rialto.

Valley District deliveries to San Bernardino Municipal Water Department are for recharge. Changes in recharge impact well hydrographs in six to seven months.

2.2 Findings and Recommendations

Table AF-1 summarizes the Valley District facilities which purveyors utilize. This table also includes Valley District facilities that could be used to make other deliveries in an emergency situation. Table AF-1 shows that all purveyors listed could be impacted by interruption in the Foothill Pipeline, SARC Pipeline and Morton Canyon Connector. Therefore, these four pipelines are the most vulnerable Valley District facilities in the case of a major earthquake along the San Andreas Fault. Specific recommendations to manage the catastrophic interruption are discussed below.

2.2.1 Alternative Local Supplies

2.2.1.1 Interties between Purveyors

Table AF-2 lists interconnections between purveyors. These interties could be used to balance supplies between purveyors. An interconnection between the City of San Bernardino and East Valley is currently being used to facilitate blending. This use is anticipated to end in the near future.

Table AF-2 – System Interties between Purveyors

Transfer	Direction	Capacity (MGD)	Remarks/data source
City of San Bernardino/East Valley	Either	4	Three interties. One currently used to facilitate blending.
City of San Bernardino/Riverside	To San Bernardino	2	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/West Valley	Either	3	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Loma Linda	Either	5	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Colton	To Colton	3	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Rialto	Either	3.6	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/ Riverside Highland	To Riverside/ Highland	3	(San Bernardino UWMP, Pg 2-10)
Fontana/Cucamonga Valley	Either	3.6	Fontana UWMP (2500 gpm)
West Valley/Fontana	Either		West Valley UWMP.
West Valley/Rialto	Either		West Valley UWMP.
West Valley/Colton			West Valley UWMP.
Redlands/Loma Linda	To Loma Linda		Greg Gage
Rialto[1]/Marygold	To Marygold		Rialto has historically conveyed 1,500 afy of groundwater to Marigold. The agreement under which this was accomplished is expiring.

Sources: San Bernardino Municipal Water Department 2005 UWMP; Jack Nelson, Yucaipa Valley; Ron Buchenwald, East Valley; Greg Gage, Valley District, West Valley 2005 UWMP.

[1] Rialto has several connections with other systems, including four connections with West Valley Water District, and connections with City of San Bernardino, Fontana Water Company, and Riverside Highland Water Company.

Based on the limited sources of data, this list may be incomplete.

2.2.1.2 Use of Big Bear Lake

Big Bear Lake has a capacity of over 70,000 acre-feet. The goal of Big Bear Lake Municipal Water District is stabilization of the level of Big Bear Lake by managing the amount of water released to the downstream water rights holder. That is, water is kept stored in the lake at all times for recreational use. Bear Valley Mutual Water Company (Mutual) has rights to a large portion of the lake. Through an agreement with Big Bear Municipal Water District (Big Bear), Valley District provides SWP water to Mutual instead of water being released from the lake. However, in an emergency situation, it may be possible for water to be released from the lake for a short duration. A legal framework could be established to make this water available in case of a catastrophe that prevented Valley District from making its deliveries under the agreement with Big Bear.

2.2.2 Increased Groundwater Production Capacity and Reliability

In general, the groundwater basin is presently able to meet peak demands using wells without Valley District facilities. If the catastrophe is an earthquake, the most likely impact on groundwater production capacity will be damage to the electrical system of the well or to the electricity supplier's system, and backup power supplies at key production wells will be necessary

Thus, depending on the system of each purveyor, increasing the purveyor's groundwater production capacity and the reliability of that capacity may improve the area's ability to operate after a catastrophic failure.

2.2.3 Alternative Conveyance of Surface Water

2.2.3.1 Alternatives to Foothill Pipeline System

As stated earlier, Foothill Pipeline together with Santa Ana River Connector Pipeline are the most vulnerable facilities if a major earthquake were to occur along the San Andreas Fault and the most critical during a catastrophic interruption. The following systems could provide some alternative conveyance of surface water should portions of the Foothill Pipeline System fail:

- Metropolitan's Inland Feeder can provide redundancy of the Foothill Pipeline to the intertie at Opal Avenue. The Inland Feeder could also be used to pump water from Diamond Valley Lake north to the intertie with the Valley District Foothill Pipeline. The conveyance capacity of the Inland Feeder operating from Diamond Valley Lake to the north is reported to be 250 cfs.

- The proposed conjunctive use project would include facilities that could convey stored groundwater from the San Bernardino Basin Area to purveyors as a substitute for imported water.

2.2.4 Additional Surface Storage

If the ability to import SWP water is lost or the region is faced with major interruption of regional and local facilities due to a catastrophic event, it is important to have ample local surface storage to meet immediate water demands. While there may be significant water stored below ground, the ability to extract and deliver this water may also be disrupted by a catastrophic event. The following suggestions could further prepare the Region for such an emergency:

- Inventory surface water storage facilities throughout the region and determine the amount of existing storage capacity compared to need to satisfy emergency water

demands. The Valley District should conduct an evaluation of feasible storage needs for the Region.

- Select appropriate delivery methods for the waters (i.e., trucking or alternative or backup pipelines).
- Rank agencies by their current amount of surface water storage and their operating storage amounts to determine which areas of the Region are in need of additional surface storage. (How far would people have to walk or drive to get to water? Which cities or communities are most at risk for water shortages?)
- Investigate adding additional local surface water storage facilities that could supply water to the entire Region in the event of an emergency. (North and South Lake projects and conservation pool behind Seven Oaks Dam.)

3 Vulnerability of Region's Water Supply System to SWP Supply Interruption

The scenario considered by this document is a large earthquake along the San Andreas Fault severing the State Water Project (SWP) California Aqueduct just above Devil Canyon power plant. In addition to the threat of earthquake, a disruption on the SWP could be caused by levee failure in the Sacramento-San Joaquin Delta or by other disruptions in transmissions facilities. These two disasters would have an impact on the delivery of SWP water into the region. This chapter will investigate the effects of an interruption of the SWP system on Valley District's customers.

3.1 Valley District SWP Deliveries

Deliveries of SWP water to Valley District have averaged approximately 15,000 acre-feet per year (1999-2003 Western-San Bernardino watermaster records). San Gorgonian Pass Water Agency is also receiving SWP water that would be affected by interruption of SWP deliveries. These direct deliveries are projected to increase to 34,000 acre-feet per year by 2030 based on the UWMP projections within the Region. Historically, direct deliveries have peaked during summer months with the greatest deliveries in July, August, and September. In the event that State Water Project deliveries are severely reduced, more demand will be placed on local groundwater supplies. For example, in a one-month shutdown, additional demands on groundwater within the Valley District service area would be 3,000 to 6,000 acre-feet (current to future demands, shut down in the summer); in a six-month shutdown, additional groundwater demands would be 10,000 to 30,000 acre-feet (current to future demands, shut down in May to September); and in a 12-month shutdown, additional demands on groundwater would be 15,000 to 34,000 acre-feet (current to future demands).

3.2 Overview of Known Earthquake Vulnerabilities of State Water Project

Publications available from the Department of Water Resources address the institutional requirements of responding to an emergency.

3.2.1 California Division of Mines and Geology Planning Scenarios

The California Division of Mine and Geology planning scenario for a major earthquake on the San Jacinto Fault concludes that the Santa Ana Valley Pipeline of the SWP will be damaged extensively as the fault and pipeline cross several times.

The planning scenario for a magnitude 8.3 earthquake north of the San Bernardino area and on the San Andreas Fault concludes that though all of the SWP facilities of the California Aqueduct are designed to resist the effects of a great earthquake comparable to the scenario event, widespread damage to the aqueduct will inevitably occur. For planning purposes, a minimum of three months will be required to accomplish those repairs necessary to restore water deliveries to southern California. Severe damage to the East Branch where it crosses the San Andres Fault at Barrel Springs is expected. No major damage to aqueduct facilities between Lake Silverwood and the Devil Canyon Power Plant is expected (this scenario assumes that surface fault rupture would terminate some 25 km northwest of Devil Canyon). The Santa Ana Valley Pipeline would be subjected to intense shaking and possible ground failure.

3.2.2 Seismic Risk Analysis for California State Water Project – Reach C

The objective of this study (Shah, 1976) was to develop a seismic hazard map for the east branch of the SWP. The study concluded that with respect to the pumping and power plants, the hazard or probability of exceeding the design load level employed for the substructures and superstructures during the next 50 years was very small (on the order of 5 percent). For the switchyards, however, the probability of exceeding their design load level during the next 50 years is large (on the order of 30 to 60 percent).

The following recommendations were made as a result of the above study.

- "The risk of damage or destruction to the pumping and power plant substructures and superstructures is minimal during the next 50 to 100 years, and therefore no action is required. However, for the mechanical and electrical equipment within these plants it is recommended that a thorough survey be made to evaluate their ability to resist seismic loads."

- "All switchgear equipment should be modified so as to resist a minimum peak ground acceleration of 0.3 g. This load level corresponds to a return period of approximately 200 years or more along [the East Branch]."

- "Since the ground shaking along the Santa Ana Valley pipeline is relatively high, in excess of 0.5 g for a 1000 year return period), an investigation should be made to determine the advisability of providing a cut-off facility for this portion of the [East Branch]."

- "Because of the large risk potential, a central operations and maintenance center with facilities and capabilities for dealing with earthquake induced damage should be set up for the region south of the Devil Canyon Power Plant."

3.3 Finding and Recommendations

Valley District currently requires the agencies it serves to have a back-up water supply in case the State Water Project (SWP) supply is not available. Assuming the back-up supply is groundwater produced from the San Bernardino Basin Area (SBBA), 15,000 additional acre-feet per year of groundwater production would be needed if the earthquake happened in the near future, and potentially 34,000 acre-feet of additional groundwater production if the earthquake happened around 2030.

The average instantaneous pumping rate for the 199 wells (with data available) of the major water purveyors in the SBBA is approximately 1,438 gpm. Based on well production rates at 70 percent of their instantaneous pumping rate, annual production would be about 323,100 acre-feet. For the remaining wells without instantaneous pumping rate data, the total maximum annual production between 2001 and 2005 was about 60,800 acre-feet. This yields a total maximum annual groundwater production capability of 383,900 acre-feet. The projected actual groundwater pumping for the Baseline Run 1 ranged from between 193,200 acre-feet in 2010 to 289,100 acre-feet in 2034, with an annual average of 248,900 acre-feet per year for the period 2006-2044. Thus, the additional groundwater production that could be used if the state aqueduct was severed is approximately 95,000 acre-feet (383,935 – 289,105) which is greater than the estimated 2030 need of 34,000 acre-feet. The 95,000 acre-feet represents approximately 9 percent of the 1,000,000 acre-feet of usable storage in the SBBA.

In the event of a SWP shutdown, there is sufficient groundwater storage, production facilities and transmission facilities to likely provide short-term water deliveries to customers in the Valley District service area. To prepare for such an outage, SWP and local supplies should be stored in the local groundwater basins, whenever available.

3.3.1 Pipeline Redundancy

Pipeline redundancy in the region is important if interruption occurs in the region along the Foothill Pipeline. On a regional-scale, projects like the Baseline Feeder, the proposed conjunctive use project and the MWDSC Inland Feeder provide additional options of conveyance in an emergency situation.

Although a loss of SWP water for a short period of time can be overcome, the SWP is critical to long-term management of the groundwater basin. The following suggestions are intended to help further prepare the Region for a shutdown of the State Water Project.

3.3.2 Recharge with SWP Water when it is Available

The SBBA is essentially an underground storage reservoir that contributes to the water reliability of the Region during periods of drought. By recharging water from the SWP when it is available, the Region can prepare in advance for drought or disruptions in the SWP

system. This is a primary management strategy of the San Bernardino Valley Regional Urban Water Management Plan and the Upper Santa Ana River Watershed Integrated Regional Water Management Plan.

3.3.3 Surface Storage in the Region

Additional surface storage in the region can help provide water supplies during a catastrophic failure of the California Aqueduct.

3.3.4 Exchange and Banking Program Utilizing Santa Ana River Water

In years when water available from the Santa Ana River exceeds the capacity of local treatment plants and spreading grounds, the excess amount could physically be delivered to the Inland Feeder and into Metropolitan's water system in exchange for SWP water from Metropolitan. This banked water could be recovered and delivered to the region if a catastrophe occurs along the California Aqueduct.

4 Vulnerabilities of Local Purveyors Water Supply System to an Earthquake in the Region

A catastrophic 8.0 earthquake near San Bernardino could lead to pipeline rupture, loss of electricity, and well failure, substantially reducing water supplies available in the Region. The quality of both surface and groundwater supplies could also be affected by the failure of existing wastewater treatment facilities. Figure AF-1 shows the San Andreas Fault trace through the Valley District service area with a five mile fault buffer zone. In the case of a 7.8 earthquake, anything within five miles of the fault is likely to be damaged or destroyed (Caltech meeting, July 31, 2007). In addition, regional infrastructure within this zone includes the SWP CA Aqueduct coming from Lake Silverwood to Devil Canyon, regional water facilities owned by Valley District (Foothill Pipeline, Greenspot Pipeline, Lytle Canyon Pipeline, and the East Branch Extension), and Metropolitan's Inland Feeder will be impacted. Prudent preparation for a catastrophic earthquake would suggest planning for no water deliveries from the SWP.

4.1 Overview of Known Earthquake Vulnerabilities of Purveyor's Systems

This section has been prepared based on review of Urban Water Management Plans of agencies receiving direct deliveries from Valley District. California Water Code Section 10632 (c) requires that Urban Water Management Plans address catastrophic supply interruptions.

4.1.1 San Bernardino Municipal Water Department

San Bernardino Municipal Water Department's Supplemental Emergency Plan is designed for implementation during emergency water shortages that could occur as a result of earthquake, flood, fire, or other catastrophes. SBMWD maintains portable backup power supply and diesel- and/or natural gas-driven wells at critical locations within the distribution system to provide domestic water for emergency purposes during sustained power outages. Additionally, they have entered into a Mutual Aid Agreement with surrounding water agencies.

4.1.2 East Valley Water District

East Valley has in place back-up power supplies at critical locations within the distribution system. The District maintains portable pumps that can be used to transfer water between zones, but cannot be used for production. East Valley's storage capacity of 25.5 million gallons would provide a potable supply for customers' non-irrigation uses (assumes

implementation of Water Shortage Contingency Plan) for an estimated two to three days. A Mutual Aid Agreement with surrounding water agencies is also in place for the provision of water supply and/or manpower.

East Valley has an agreement with Arrowhead Drinking Water Company to deliver potable water tanks to selected sites within the District's service area. The trucks will be manned by District personnel to distribute water to customers for drinking purposes.

Were surface water deliveries to East Valley disrupted, East Valley has adequate groundwater production capacity to meet peak day. This presumes that East Valley's facilities remained intact.

4.1.3 West Valley Water District

Extended multi-week supply shortages due to natural disasters or accidents that damage all West Valley water sources are unlikely. The District's 23 storage reservoirs hold 65.6 million gallons, which is sufficient water to meet the health and safety requirements of 50 gallons per day per capita for the 60,121 customers for 21 days. This assumes zero non-residential use. Under emergency power outages or catastrophic earthquake conditions, the existing storage is expected to provide a minimum supply of 3.5 days of average day demand or 1.7 days under maximum summer demand.

The District is planning to construct an additional 12.5 million gallons of storage within the next few years for a total of 78.11 million gallons, which would give the District 4.2 days of average day demand. The District also has interconnections with three other agencies for emergency supplies.

The District has portable back-up generators that can be used in the event of an area-wide power outage. These generators can be located on both wells and booster stations to continue water production. These generators will be located in the northern part of the distribution system. Water can then be boosted to higher zones or gravity fed to the lower zones. In addition to the portable generators, the District is constructing back-up generators at the Zone 5 and 6 booster stations.

West Valley's groundwater production capacity is approximately 80 percent of peak day demand. It obtains water from two Valley District facilities, the Lytle Pipeline and the Baseline Feeder. These facilities are required to meet peak day demand.

4.1.4 Yucaipa Valley Water District

Yucaipa Valley's Major Disaster Plan and Alerting Procedures deal with non-drought-related water shortages, including those that might result from earthquakes. It outlines the responsibilities of the District's designated emergency response personnel, alerting

procedures, alternate headquarters, communications, transportation, and relationships with regional and state emergency response officials.

To the extent well capacity exists, the Yucaipa basin can be temporarily exercised beyond its long-term safe yield in response to shortages.

It is East Valley's intent to maintain groundwater production facilities adequate to meet peak day demand without use of surface water.

4.1.5 City of Redlands

The Redlands UWMP notes that the Redlands Municipal Utilities Department has an emergency plan that supplements the Citywide Emergency Plan. It notes that in case of an earthquake, required actions are to "coordinate the resources necessary for repair of water infrastructure," and to "utilize vendor lists to identify available water haulers, temporary water lines, piping, heavy equipment, etc."

Redlands does not have adequate capacity to meet peak day demand without use of surface water. Redlands obtains surface water from Mill Creek and SWP wheeled by SBVWMD. During a typical summer, Mill Creek is the main source during early summer, but this supply is substantially reduced by late summer. SWP water is the dominate source in late summer. Depending on the supply of Mill Creek water, Redlands may not be able to meet peak day demands without SWP water.

4.1.6 Fontana Water Company

Fontana is dependent on imported surface water to meet demands. Presently, the water is all delivered via the Lytle Pipeline. It is possible that in the future, some of the imported water will be conveyed by Metropolitan's Foothill Feeder (also known as the Rialto Pipeline). These two lines are parallel, however, and it is reasonable to presume that the same event that damages one will damage the other.

4.1.7 City of Rialto

Rialto's UWMP notes that the city's storage reservoirs can meet the health and safety requirements of 50 gallons per day per capita for 11 days. This assumes no non-residential use. The City is retrofitting key well sites to enable the City to bring in portable generators for use during a power outage.

Rialto obtains water from two Valley District facilities, the Lytle Pipeline and the Baseline Feeder. It is believed that both these facilities are required to meet peak day demand.

4.2 Findings and Recommendations

- The purveyors in the region will primarily rely on groundwater during catastrophic events. Therefore, they must ensure they have reliable and adequate backup power supplies at critical locations within the distribution system as well as key production wells. The backup power supplies should be tested periodically to ensure proper operations during emergencies.

- Local purveyors should examine their current storage and interties capacities and plan for additional storage and interties to ensure adequate water supply is available for health and safety during catastrophic events.

5 Summary of Findings and Recommendations

5.1 Findings

These findings have been developed from a search of literature reporting the impacts of major earthquakes and limited work by water purveyors. More detailed, site-specific analyses are needed to better quantify and identify impacts from major earthquakes or other catastrophic outages.

- **Reliability of Groundwater Wells.** Review of post-earthquake lifeline performance reports reveals little discussion of groundwater well failure. However, loss of commercial power, damage to electrical equipment and aboveground appurtenances, or damage to the distribution system may effectively put the well out of service. Liquefaction, especially in areas where there is high groundwater levels between depths of 5 to 50 feet, may cause ground settlement and interfere with continued well operation.

  No discussion of the performance of well head treatment systems during earthquakes was found. This may be due to the limited amount of well head treatment in place during prior earthquakes. As well head treatment typically includes purchased equipment installed in a field location, there is significant opportunity for lapses in the seismic design.

  The groundwater basin and the groundwater production wells are a reliable part of the water supply system for the San Bernardino area.

- **Reliability of Pipelines**. Pipelines are generally the most fragile part of a water system. Generally, damage is a function of displacement rather than shaking. Empirical algorithms have been developed to predict seismic reliability of pipelines.
- **Reliability of Pump Stations**. Past earthquakes indicate that the structural and mechanical elements of a pump station are highly resistant to earthquake damage. The most likely failures are to the electrical equipment and loss of commercial power.
- **Reliability of Surface Water Treatment Facilities**. The major elements of a surface water treatment system are typically concrete structures that are very resistant to damage. However, these facilities include a large variety of mechanical equipment, much of it long and light weight that is subject to damage not only from the direct force of an earthquake, but also to the wave action created by the earthquake. Similar to a pump station, power supply and electrical equipment are fragile.

- **Reliability of the State Water Project**. While little specific information was found on anticipated damage to the SWP, the high susceptibility of the Santa Ana Valley Pipeline is recognized. A major vulnerability of the SWP is the Sacramento-San Joaquin Delta. The SWP does have a Business Resumption Plan and an Emergency Operations Plan.
- **Length of Outages.** The Loma Prieta earthquake affected a large number of separate systems. The San Jose Water Company serves most of San Jose and all of Los Gatos. Los Gatos was hard hit and half of the water customers lost water service. In San Francisco, the worst hit area was the Marina District. Fires and liquefaction both affected the district. East Bay Municipal Water District serves 1.1 million customers and suffered $3.7 million in damage. Damage included a break in a 60-inch raw water line.

  After the Northridge earthquake, the Los Angeles Aqueducts No. 1 and 2 were in and out of service for temporary and permanent repairs over several months, these facilities were not critical at that time. Alternate supplies were available and drought conditions limited supply to these aqueducts.

  Table AF-3 shows the length of outages for water operation during the Loma Prieta and Northridge earthquakes.

  Valley District's Emergency Operations Plan includes estimates for repair of Valley District facilities. Electrical and pipe repairs are estimated to take 35 to 77 days. Pump repairs are estimated to take 168 to 273 days.

  Tables AF-4 and AF-5 summarize the degree to which purveyors depend on Valley District facilities for deliveries over a period of days to one year. These tables presume normal operations by the purveyor with the exception that non-potable deliveries (West Valley and Yucaipa) are suspended.

Table AF-3 – Length of Outages for Water Operation during Loma Prieta and Northridge Earthquakes

Earthquake	Purveyors	Time to Restore Water Operation
Loma Prieta	San Jose WC	36 hrs/98%
	San Francisco	6 days/most areas
	East Bay MWD	3 days/normal operation
Northridge	City of L.A.	12-65 days

Table AF-4 – Percent of Present (P) and Future (F) Peak Day, Potable Demand conveyed by SBVWMD facilities when no local surface water is available. Assumes imported water used prior to local groundwater

Purveyor	Foothill Pipeline	SARC Pipeline	Greenspot Pump Station	Morton Canyon Connector	Greenspot Pipeline	Tate Pump Station	Crafton Hills PS	Crafton Hills Reservoir	Crafton Hills Pipeline	Bryant Street Pipeline	Yucaipa Pipeline	Lytle Pipeline	Baseline Feeder
San Bernardino Municipal Water Dept	0	0		0	0								
East Valley Water District	12 (P) 24 (F)	12 (P) 24 (F)		12 (P) 24 (F)	0								
Redlands	36 (P) 41 (F)	36 (P) 41 (F)	24 (P) 25 (F)	51 (P) 35 (F)	24 (P) 25 (F)	24 (P) 25 (F)							
Yucaipa Valley Water District	24(P) 49 (F)	24(P) 49 (F)	24(P) 49 (F)	24(P) 49 (F)	24(P) 49 (F)		24(P) 49 (F)	24(P) 49 (F)	24(P) 49 (F)	24(P) 49 (F)	0		
Fontana Water Company	0	0		0	0							unknown	
West Valley Water District	0	0		0	0							23 (P) 36 (F)	12(P) 27 (F)
City of Rialto	0	0		0	0							7 (P) 6 (F)	unknown

Notes:
San Bernardino Municipal Water Department figure does not include deliveries of surface water for wells under the influence of surface water as it takes six to seven months for the hydrographs of these wells to respond. If these deliveries were included, they would be 14% of peak day demand.
Does not include deliveries for irrigation or indirect deliveries.
Gray shading indicates a conveyance facility that cannot under any circumstances be used to convey water to the agency.

Table AF-5 – Groundwater and Local Surface Water Production Capacity as percent of peak day demand

Purveyor	Percentage	Remarks
San Bernardino Municipal Water Department	113%	
East Valley Water District	104%	
Redlands	≈ 75 to 85%	Assumes late summer when local surface water supplies are low. When local surface water supplies are high, Redlands can produce approximately 85 to 95% of demand.
Yucaipa Valley Water District	95%	Yucaipa's intent is to maintain groundwater production facilities adequate to meet peak demand. As of August 2007, they do not meet this goal.
Fontana Water Company	Significantly less than 100%	
West Valley Water District	78%	Projected to decrease to 59% in the future.
Rialto	unknown	
Notes: Does not include non-potable use by West Valley and Yucaipa.		

5.2 Recommendations for Disaster Preparedness

This section includes the consultants recommendations based on the literature review and discussions with District staff and purveyors. The following recommendations have not been included in the administrative draft of the IRWM Plan. After these recommendations, the projects already included in the IRWM Plan that would enhance disaster preparedness will be reviewed.

5.2.1 General Recommendations

- Consider a Seismic Improvement Program/Water Infrastructure Reliability Project to review the adequacy of Valley District facilities to withstand an earthquake. East Bay Municipal Utilities District and Santa Clara Valley Water District (Santa Clara Valley Water District, 2005) are two agencies that have performed such studies. High priority facilities include Foothill Pipeline, Santa Ana River Connector, Morton Canyon Connector, and Greenspot Pipeline.
- Consider the opportunities that Big Bear Lake presents as an emergency source of water after an earthquake that interrupts SWP deliveries for many weeks.
- Consider using the existing MWD agreements to allow the use of Metropolitan Water District facilities to bypass failed Valley District facilities (and the reverse).

- Review ability to provide drinking water immediately following an earthquake. Arrangements to provide bottled water may be appropriate.
- The USGS Multi-hazards Demonstration Project (MHDP) is leading an effort to create a scenario document for a future M7.8 southern San Andreas Fault earthquake. The document will describe in detail the effects of the earthquake. It will form the basis for a November 2008 statewide earthquake response exercise. The USGS contact for this project is Dale Cox, dacox@usgs.gov, 916/997-4209. It is probable that useful information for disaster preparedness planning will come out of this effort.

5.2.2 Proposed Projects to Provide Conveyance System Redundancies for the Regional Facilities

The proposed conjunctive use project could provide the backup well production needed for the retail water agencies in an emergency when SWP supplies have been severed.

5.3 Alternative Local Supplies

This section is intended to initiate a discussion of options that would improve the water supply reliability in case of a catastrophic failure of portions of the Valley District water system.

5.3.1 Interties between Purveyors

Table AF-6 lists interconnections between purveyors. These interties could be used to balance supplies between purveyors. An interconnection between the City of San Bernardino and East Valley is currently being used to facilitate blending. This use is anticipated to end in the near future. Fontana Water Company has historically depended on supplies delivered through its interconnection with Cucamonga Valley to meet peak day demand.

Table AF-6 – System Interties between Purveyors

Transfer	Direction	Capacity (MGD)	Remarks/data source
City of San Bernardino/East Valley	Either	4	Three interties. One currently used to facilitate blending.
City of San Bernardino/Riverside	To San Bernardino	2	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/West Valley	Either	3	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Loma Linda	Either	5	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Colton	To Colton	3	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/Rialto	Either	3.6	(San Bernardino UWMP, Pg 2-10)
City of San Bernardino/ Riverside Highland	To Riverside/ Highland	3	(San Bernardino UWMP, Pg 2-10)
Fontana/Cucamonga Valley	Either	3.6	Fontana UWMP (2500 gpm)
West Valley/Fontana	Either		West Valley UWMP.
West Valley/Rialto	Either		West Valley UWMP.
West Valley/Colton			West Valley UWMP.
Redlands/Loma Linda	To Loma Linda		Greg Gage
Rialto[1]/Marigold	To Marigold		Rialto has historically conveyed 1,500 afy of groundwater to Marigold. The agreement under which this was accomplished is expiring.

Sources: San Bernardino Municipal Water Department 2005 UWMP; Jack Nelson, Yucaipa Valley; Ron Buchenwald, East Valley; Greg Gage, Valley District, West Valley 2005 UWMP.

[1] Rialto has several connections with other systems, including four connections with West Valley Water District, and connections with the City of San Bernardino, Fontana Water Company, and Riverside Highland Water Company.

Based on the limited sources of data, this list may be incomplete.

5.3.2 Big Bear Lake

Big Bear Lake has a capacity of over 70,000 acre-feet, most of which is owned by the Bear Valley Mutual Water Company. To enhance tourism, Big Bear Municipal Water District entered into an agreement with BVMWC and Valley District whereby Valley District makes deliveries to BVMWC "in lieu" of BVMWC taking delivery from the lake. The net effect is that water remains in the lake to enhance tourism. An agreement could be written that might make water from the lake available for municipal use in case of a catastrophe.

5.3.3 Increased Groundwater Production Capacity and Reliability

If the catastrophe is an earthquake, the most likely impact on groundwater production capacity will be damage to the electrical system of the well or to the electricity supplier's system.

Thus, providing emergency generators for "key" wells would help improve the area's ability to operate after a catastrophic failure.

5.4 Alternative Conveyance of Surface Water

5.4.1 Alternatives to Foothill Pipeline System

The following systems could provide some alternative conveyance of surface water should portions of the Foothill Pipeline System fail:

- Metropolitan's Inland Feeder parallels the Foothill Pipeline from Devil Canyon to Opal Avenue. The Inland Feeder could also be used to convey water stored in Diamond Valley north to the Valley District service area. The conveyance capacity of the Inland Feeder operating from Diamond Valley Lake to the north is reported to be 250 cfs.

- The proposed conjunctive use project would increase the ability to convey groundwater between agencies following a catastrophe.

- The proposed East Branch Extension Phase II will convey SWP water from the eastern portion of the Foothill Pipeline to Crafton Hills Pump Station. This will provide redundancy for the SARC Pipeline, Greenspot Pump Station, Morton Canyon Connector I, and Greenspot Pipeline.

5.4.2 Alternatives to the Lytle Pipeline

- Metropolitan's Foothill Feeder, also called the Rialto Pipeline, parallels the Lytle Creek Pipeline from Devil Canyon east for approximately nine miles. With turnouts it could provide alternative conveyance to West Valley's and Fontana's surface water treatment plants.

- The Baseline Feeder conveys groundwater to West Valley and Rialto. This groundwater is an alternative to SWP water conveyed by the Lytle Pipeline. It should be noted that Rialto's connection to Lytle Pipeline is not yet completed.

5.4.3 Alternatives to Baseline Feeder System

- The Lytle Creek Pipeline conveys SWP water to West Valley and can convey SWP water to Rialto when the connection is completed. This surface water is an enhancement to groundwater conveyed by the Baseline Feeder.

5.5 Back-Up Power Supplies

5.5.1 Power Supplies for Groundwater Wells

A catastrophic earthquake may cause loss of electricity for an indeterminate amount of time. In order to ensure water supplies in the immediate aftermath and weeks following a major earthquake, it is critical to have back-up generators or internal combustion engines for important production wells throughout the Region.

- Inventory wells in the Region with back-up generators.
- Determine the number of wells that could be equipped with internal combustion engines.
- Rank groundwater wells by their ability to supply water to purveyors. Wells with higher production capacities, more conveyance connections, or delivery pipeline options are preferential.
- Select a distribution of wells across the basin to be provided with back-up generators or internal combustion engines, decreasing the likelihood of a localized event impacting a majority of the most important wells.

5.5.2 Back-Up Power Supplies for Other Water Supply Facilities:

Similar evaluations should be conducted for other facilities such as water treatment plants and the key pumping plants, and back-up power generation should be put in place for use during emergencies.

6 Water Shortage Contingency Plan

Each water agency in the region is required by law to have a water shortage plan and emergency catastrophe plan. If there is a shutdown in the SWP system or a long-term drought that affects imported or local supplies, each agency in the region should participate in conservation activities that maximize use of the shared water supplies, both local surface water and ground water. These conservation efforts should be coordinated at a regional level.

The following provides examples of rules, regulations, and procedures that could be implemented to restrict or reduce water use. These could be implemented upon determination that there exists, or there is a threat of, a water shortage that affects the region's ability to provide adequate potable water supplies for the purveyors to deliver to their customers. Each agency should have a water shortage plan that is tailored to their customers in order to reach water conservation targets.

6.1 Stage I Conservation – Additional 20% Reduction

Upon determination that additional water conservation is needed, the following prohibitions can be considered and adopted with the goal of achieving an additional **20 percent** reduction in water consumption—the water conservation measures referenced in Stage I, and the following:

(a) All outdoor irrigation should occur only after 8 p.m. and before 7 a.m.

(b) Prohibit the use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground, and other hard-surface areas by direct application.

(c) Prohibit the use of non-drinking-water fountains, except for those using recycled water.

(d) Prohibit the use of water that results in any flooding or run-off in gutters or streets. Limit water deliveries to residential and non-residential users to 90 percent of their water consumption for the same billing cycle during a pre-determined Base Year.

(b) Levy a surcharge of **200 percent** on all water use in excess of the maximum water use allotment referenced in subparagraph (a) above, assessed to the account of the customer.

(c) Limit the use of water from fire hydrants to fire suppression and/or other activities immediately necessary to maintain health, safety, and welfare of residents.

(d) Prohibit the use of potable water for dust control and compaction for construction projects.

(e) Prohibit the washing of automobiles, trucks, trailers, boats, and other types of mobile equipment not occurring upon the immediate premises of a commercial car wash and/or commercial service station that uses recycled water.

(f) Encourage restaurants to refrain from serving water to their customers, except upon specific request.

(g) Limit the use of potable water to irrigate grass, lawns, ground cover, shrubbery, crops, vegetation, ornamental trees, etc., to Saturdays, Mondays, and Wednesdays for even-numbered addresses and Sundays, Tuesdays, and Thursdays for odd-numbered addresses, or as otherwise established by resolution from the Board of Directors of the respective agencies.

(h) Limit water main flushing to emergency situations only.

(i) Wait list applications for Intent to Serve Letters and suspend their further processing.

Pursue a vigorous public information campaign regarding current water supply conditions and the need to reduce water consumption by such means deemed appropriate.

Meet with other water purveyors, public school districts, park agencies, and golf courses that use water sources other than purveyor-supplied water, to seek voluntary reduction in irrigation of decorative landscape and reduce irrigation of turf and play areas.

In addition to those measures stated above, adoption of water conservation measures on an urgency basis may be warranted.

6.2 Stage II Conservation – Additional 35% Reduction

Upon determination that additional water conservation is needed, the following prohibitions can be considered and adopted with the goal of achieving up to an additional **35 percent** reduction in water consumption. The water conservation measures referenced in Stage I and Stage II, and the following:

(a) Limit water deliveries for residential uses to **65 percent** of their water consumption for the same billing cycle during a pre-determined Base Year.

(b) Levy a surcharge of **400 percent** on all water use in excess of the maximum water use allotment reflected in subparagraph (a) above, and that can be assessed to the account of the customer.

(c) Require all swimming pools to be covered when not in use.

(d) Prohibit the use of potable water to irrigate grass, lawns, ground cover, shrubbery, crops, vegetation, ornamental trees, etc., and lock all irrigation meters.

(e) Suspend Intent-To-Serve Letters. However, the expiration period can be extended commensurate with the time of suspension.

In addition to those measures stated above, adoption of water conservation measures on an urgency basis may be necessary.

6.3 Stage III Conservation – Additional 50% Reduction

Upon determination that additional water conservation is needed, the following prohibitions can be considered and adopted with the goal of achieving up to an additional **50 percent** reduction in water consumption. The water conservation measures referenced in Stage I, II, and III above, and the following:

(a) Limit water deliveries for residential uses to **50 percent** of their water consumption for the same billing cycle during a pre-determined Base Year.

(b) Levy a surcharge of **500 percent** on all water use in excess of the maximum water use allotment reflected in subparagraph (a) above, and that can be assessed to the account of the customer.

(c) Prohibit the setting of new water meters and suspend all Will-Serve Letters.

In addition to those measures stated above, adoption of additional water conservation measures on an urgency basis may be necessary.

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Yashinsky, Mark and Eidinger, John. Performance of Lifelines during the November 3, 2002 Denali, Alaska Earthquake. http://www.asce.org/pdf/denalieartquake.pdf

Conversations with:

Sam Fuller, San Bernardino Valley MWD, July 2007
Ron Buchwald, East Valley, August 2007
Tom Crowley, West Valley, August 2007. Email on August 28.
Chris Diggs, Redlands, August 2007
Jack Nelson, Yucaipa Valley, August 2007
Matt Litchfield, August 2007

2005 Urban Water Management Plans:

East Valley Water District
Fontana Water Company
City of Redlands
West Valley Water District
Yucaipa Valley Water District

Attachment 1

Earthquake Literature Search

This section has been prepared based on the insights included in reports prepared by water agencies outside this IRWM Plan area that summarize their experience and include their after-action reports prepared following earthquakes.

Loma Prieta, California, Earthquake of October 17, 1989.

The U.S. Geological Survey's Professional Paper on the performance of the built environment in the Loma Prieta Earthquake was compiled of a number of separate papers. Information from two of those papers that focused on water systems is discussed here (Schiff, 1998).

A section of the Professional Paper (Le Val Lund, primary author) had the following conclusions:

"On the basis of this preliminary reconnaissance survey, the 1989 Loma Prieta earthquake has reinforced the lessons learned in previous earthquakes that water and wastewater systems should do the following.

- Provide emergency power for critical operating, treatment, and support facilities
- Maintain portable light plants, generators, chlorinators, and pumps
- Develop a separate radio-communication system, independent of the telephone system
- Maintain an inventory of repair materials, parts, and fuel
- Improve the State-wide and mutual-aid programs
- Establish guidelines for State-wide emergency water-quality sampling and public notification
- Conduct an earthquake-response assessment of system facilities
- Develop an emergency-response plan
- Incorporate into local or regional emergency-response plans a more active participation by water and wastewater agencies
- Provide a method, possibly computer based, for logging problems and system operations to establish priority for repair activities
- Conduct a cross-training program to include all personnel in emergency response
- Train personnel in appropriate communication procedures
- Conduct regular periodic emergency-response exercises
- Provide flexible pipe joints
- Provide flexible pipe connections to wells, tanks, pumps, and other rigid structures

- Provide adequate anchorage for air valves and other heavy appurtenances that are installed in an inverted-pendulum position
- Design mechanical appurtenances in treatment-plant basin facilities for wave action
- Provide for a breakaway or fusible connections and (or) safety cables or chains to prevent malfunctioning mechanical equipment from interfering with other equipment in treatment-based basins
- Provide for redundancy in water and wastewater systems
- Install isolation valves and establish a regular valve-maintenance program
- Anchor water-quality-testing equipment and supply cabinets"

A separate section of the Professional Paper (Mark Pickett, primary author) focused in part on the lessons learned from the Loma Prieta Earthquake for utility operations, including preparedness and response. A brief review of the points made on utility operations is below:

- **Organization**. Important improvements in organization that were frequently identified were (1) better definition of leadership roles, (2) clearer statement of unit duties, (3) improved emergency planning to reflect the detailed events that must be dealt with in real disasters, and (4) better preparation through "what if" thinking and plan exercising.
- **Energy Sources**. Points that could provide better preparedness for loss of electrical power included:
    - Maintain close relationships with the local electrical-power company to ensure priorities of the utility and the water agency are understood.
    - Portable electrical-power generators should be provided with the proper fittings and connections for each intended use. Generators should be periodically tested.
    - Permanent engine-driven generator sets should be provided at critical support facilities.
    - Regularly scheduled periodic tests should be conducted under load.
- **Portable Equipment.** All utility personnel noted that more portable equipment was needed than was on hand in their organization. Portable equipment needs scheduled maintenance and safe and accessible storage. Personnel need to know how to operate the equipment and the equipment limitations.
- **Communications and Public Information.** Pre-disaster preparation includes development of "fill-in-the-blank" media-release forms, development of procedures to disseminate information to the media, securing of communications equipment and access to communications networks, and preparation for post-disaster investigations.

- **Inventory.** Adequate supplies and access to those supplies needs to be maintained.
- **Emergency-Response Planning**. In general, utility emergency-response plans were not well documented or pre-exercised before the earthquake.
- **Mutual-Aid Planning.** Adequate mutual-aid planning includes coordination with other water agencies, participation in regional meetings and test exercises, preparation to provide aid to adjacent Federal and State organizations, and authorization from fire department officials for utilization of fire engines as booster equipment.
- **Training**. Extensive training of employees is required.
- **Long-Term Recovery Planning.** Recovery planning needs to take into account reconstruction, rate-structure changes, integration of new knowledge into operations, collection of revenues, and record keeping for State or Federal reimbursement.

Northridge Earthquake, California, Magnitude 6.8 Earthquake of January 17, 1994

The National Institute of Standards and Technology report on the lifeline performance in the Northridge Earthquake had the following observations and recommendations concerning the performance of water facilities (Schiff, 1997).

"Seismic performance of dams, large buried reservoirs, and wells in the 1994 Northridge earthquake showed significant improvement from the 1971 San Fernando earthquake. Facilities constructed since the San Fernando earthquake that incorporated lessons learned from that earthquake performed well. These include concrete tanks and pumping stations that were subjected to very strong ground motions. The prestress-concrete water tanks were constructed using criteria more conservative than those contained in AWWA Standards for Wire-Wound Circular Prestressed Water Tanks (AWWA D110)."

"There is a need for performance criteria for water systems so that piping systems and other water system facilities and equipment can be evaluated and seismic specification established in a consistent manner. With performance criteria, water systems performance and the consequences of disruption can be evaluated. With this information a case can be made for getting public support to enhance system performance in a timely and cost-effective manner."

"The largest impact on water system performance was the failure of water lines, both large supply lines and smaller lines in the distribution system. Most pipeline damage has the result of ground deformations. This earthquake had no surface faulting, but there were many areas with ground deformations in locations that had not previously been predicted. Thus, a general level of improved materials and methods may be needed to improve system performance rather than concentrating on special problems of fault crossings. The uncertainty in predicting the location of damage increases the importance of system

redundancy and alternate supplies from other sources, such as groundwater basins and alternate aqueduct systems for water supplies."

"Many of the pipe failures appear to be related to cracks in bells that are probably associated with their method of fabrication. There is a need to study the seismic strength of welded steel bell and spigot joints and methods to improve the seismic performance of the joint. The joint performance should be compared with the current (AWWA) Standard for Welded Steel Pipe."

"The performance of surface-supported tanks was poor and damage was similar to that observed in previous earthquakes. Many of the damaged tanks were old and predate current seismic design standards. The loss of tank contents was frequently associated with failure of input and output pipe connections. These failures are due to the use of cast iron fittings and inadequate flexibility to accommodate the movement of the tank, which was typically lifting rather than sliding. The roofs and upper parts of side walls on several tanks were damaged due to sloshing. Several examples of elephant foot buckling were observed."

"There is a need for follow up surveys to determine the performance of tanks constructed using current seismic standards and to determine the relative performance of anchored and unanchored tanks. Methods to address the damage due to sloshing should be identified for existing and new tanks. Based on the effect of tank performance on water system performance, the need for reducing the risk of tank damage by improving anchorage, stiffening to prevent buckling, and reducing effects of sloshing can be determined."

"Sloshing in large basins in water filtration and water reclamation plants caused damage in both 1989 Loma Prieta and the Northridge events. Although not critical, the damaged equipment can cause malfunction of other equipment. For example, sloshing caused the jamming of the chain drive sludge scrapers in seven out of 44 final clarifiers of a water reclamation plant. There is a continuing need to consider sloshing and shaking in the design of mechanical equipment and baffles in large basins of water and wastewater treatment plants."

"Air and vacuum valves on pipelines are configured in an inverted pendulum above the ground surface. In the Northridge event many valves toppled, had cracked bodies or damaged floats (balls). Also the damage may have been caused by transient pressures in the pipeline. A study is required to improve the performance of these valves in an earthquake."

"The disruption of commercial power emphasizes the need for reliable emergency power supplies. While emergency power for pumping stations and treatment plants performed well, there were indications that testing units under full load may enhance performance.

"The 1971 San Fernando and 1987 Whittier Narrows earthquakes experience had encouraged water agencies to prepare emergency response plans and establish emergency operations centers. These plans have been tested and implemented by lifeline agencies. Water system emergency response plans generally worked well in the Northridge earthquake. This was attributed to their periodic testing. It is important that plans address expected problems in communicating with personnel and with transportation problems. Because of transportation problems and the disruption of several lifelines, it is important that water system disaster plans make provisions for supporting most needs of their workers, including food and temporary housing. In the recovery after the earthquake, outside contractors may be retained to speed the recovery. It is important that all personnel be aware of OSHA requirements for entering confined spaces, such as large diameter pipes, conduits and tunnels. To improve the performance of utility work crews, utilities should consider providing support for worker families that have been directly affected by the earthquake. For example, this could include providing assistance with getting shelter or help in evaluating damage to homes."

"Boil water orders were issued as a precaution. Because of the time needed to confirm that water is safe once an order is issued, the public may be needlessly inconvenienced. Consideration should be given to developing a mobile water quality laboratory to expedite, in the field after repairs have been made, the determination if the water is safe for drinking. More rapid methods for evaluating the safety of water should be explored."

"There is a need for adequate documentation of emergency response and recovery costs. For public utilities, as is the case for most water systems, a record is needed for reimbursement from FEMA. Documentation is also needed to substantiate insurance claims."

"The disruption of the water supply demonstrated that many critical facilities were not prepared with emergency water supplies or even a means for connecting an external source into their system."

"This is a need for better public education about the consequences of water system disruption and use of appropriate mitigation measures."

"While the performance of customer water is outside of the jurisdiction of water utilities, damage to these systems was costly and disruptive in the Northridge earthquake. The Oliveview Hospital, which was reconstructed after experiencing severe damage in the San Fernando earthquake had to be evacuated due to the failure of water systems within the hospital. The vulnerability of water systems in buildings should be evaluated and standards improved to reduce the losses and disruption from these systems."

This report also addresses damage and repair of supply pipelines. Since supply pipelines are the main facilities of SBVWMD, these estimates may be of particular interest. They are summarized in Table 1.

Table 1– Repair of Supply Pipelines after Northridge Earthquake

Pipeline Description	Repair time	Remarks
54- to 33-inch modified prestressed concrete cylinder pipe	65 days	Castaic Lake Water Agency's pipeline from treatment plant to service area. 35 leaks. New fabricated sections were installed and pulled rubber gasket joints were welded in place.
SWP – West Branch, 85-inch welded steel pipe to Jensen WTP	2 days	10-foot section of damaged pipe replaced with pipe fabricated at MWD yard.
Los Angeles Aqueduct No.1		Aqueduct No. 1 had damage at four locations; and it was able to be operated at very low flow for about a week to allow repairs to Aqueduct No. 2, then shut down for repairs. Operated at one-half capacity, after temporary repairs were made, during a planned Metropolitan shutdown. It was out of service from April 1 until summer for permanent repairs.
Los Angeles Aqueduct No. 2	One week	Out of service for the first week after earthquake for repairs.
78-inch North Branch Feeder (Metropolitan)	45 days	From Jensen Plant to Simi Valley. 15 to 20 major pulled pints and 500 cracks. Replacement air and vacuum valves delivered by manufacturer in two days.
48-inch, Granada Trunk Line (LADWP)	12 days	Welded Steel Pipe and modified prestressed concrete cylinder pipe. Four major pulled mechanical couplings and two tension and compression failures.
68-inch, WSP, Rinaldi Trunk Line (LADWP)		Welded Steel Pipe. Three pulled welded bell and spigot joints and a tension and compression failure.

Santa Clara Valley Water District Water Infrastructure Reliability Project

At the time of Santa Clara's Water Infrastructure Reliability Report, the system could suffer up to a 60-day outage if a major event, such as a 7.9 magnitude earthquake on the San Andreas Fault, were to occur.

Recommended improvements to the system included:

- Life Safety – retrofit of all operations buildings
- Emergency Planning and Studies – Recovery Plan and Retailer Shortages Agreement
- Agreements – Mutual aid, contractor retainer, pipe rental companies, welder retainer, retailer incentives
- Capital Improvements – SCVWD-owned well fields
- Operational Improvements – Stockpile pipes and system materials
- SCADA Improvements

The estimated cost of these improvements was $150 million (report data May 2005). With these improvements the estimated outage period would reduce to 7 to 14 days.

San Simeon, California, Magnitude 6.5 Earthquake of December 22, 2003

The San Simeon earthquake damaged two of 19 dams in the area.

There was no reported damage to groundwater wells other than the loss of power from a few hours to several days.

Steel water tanks damaged included two in the City of Paso Robles water system, one in a private system serving a mobile home park, three (of four) at the City of Templeton, and an elevated tank in the City of Guadalupe.

Pipeline breaks were reported in most purveyor systems (Lund, 2003).

Denali, Alaska, Magnitude 7.9 Earthquake of November 3, 2002

Population near the epicenter is limited to about 10,000 people in rural locations. Nearly all residents rely on private wells for water supply. Two events of well casings ejecting out of the ground were reported. These events may be attributed to accumulated frost heave forces on casing pipe that lost its soil resistance temporarily due to shaking and/or liquefaction.

City of San Diego

In 2001, the City of San Diego completed a study of the expected operational performance of the City of San Diego Water Supply pipelines when exposed to possible future scenario earthquakes. The analysis used a specialized GIS software package.

For the most serious earthquake, the study determined that it would take 1.7 days to stabilize the system, 20 days to restore backbone pipes, 35 days to restore distribution pipes, and 74 days to complete all pipe repairs.

The study also examined the costs and benefits of different seismic improvement programs and developed benefit/cost ratios for each program (Collins, 2001).

While the City of San Diego has a large number of reservoirs in the distribution system, this study did not examine those systems.

City of Vancouver, Canada

In 2000, the City of Vancouver completed a study of the expected operational performance of the Regional Water Distribution System. In the event of a Design Basis Earthquake, a 475-year event, the report concluded the following (JELC Working Committee, 2000):

1. The present system will be severely impacted. Chlorine facilities evaluated have life safety concerns. Fiberglass tanks containing sodium hypochlorite and ammonia may overturn due to lack of anchorage.

2. An estimated 30 pipeline failures will occur, making much of the system inoperable.

3. All pump stations that were evaluated will likely be inoperable as a result of nonstructural and, in some cases, structural damage. All but two pump stations are dependent on commercial power. If power is out, pump stations without self-contained power will be inoperable.

4. All reservoir roofs/column supports are vulnerable. Some may collapse. In general, tanks should remain operable.

A later discussion of the development of an alternate water supply for Vancouver proposed development of procedures to allow use of two existing irrigation wells for potable supply should the city's supplies from reservoirs fail in an earthquake. In addition, a dedicated fire protection system, possibly supplied with sea water, was proposed (City of Vancouver).

San Fernando, California, Magnitude 6.7 Earthquake of 1971

Immediately following the earthquake, approximately 100,000 customers were without water, and a citywide "boil water" advisory was issued. Within 5 days, water service was restored to all but a few thousand customers; after 10 days, less than 100 scattered customers were without water. All "boil water" orders were lifted after 12 days (Housing and Urban Development, 2001).

Two dams, Van Norman and Pacoima were seriously damaged by this earthquake. Van Norman was replaced and Pacoima was repaired.

Kobe, Japan, Magnitude 6.8 Earthquake of January 17, 1995

An estimated 2,000 water pipeline failures occurred, draining reservoirs and limiting water available for fire suppression. Transmission and distribution pipeline and water purification plant damage resulted in 300,000 people still without water one month following the earthquake.

An aggressive earthquake mitigation program had replaced most of the city's cast iron pipe prior to the earthquake. Without that, program failures and restoration time could have been far greater. About 6 percent of Kobe's ductile iron pipe had a special seismic joint that appears to have had little or no damage. An earthquake monitoring and control system isolated 18 reservoirs saving the water for drinking in the days following the event.

The earthquake monitoring and control system consists of an earthquake ground motion monitoring center, telemetry, and reservoirs with earthquake isolation valves at 21 locations. There are dual reservoirs at each of the 21 sites; one has an isolation valve to be controlled following an earthquake, and one does not. This concept allows shutdown of one reservoir while maintaining service should the second reservoir inadvertently shut down. If the system can keep up with system leakage, the isolated reservoir can be put back on line from the control center. If the system cannot keep up with demand, the reservoir remains isolated (Ballantyne, 1995).

There were two major issues identified that had delayed system restoration:

- No water pressure was available to check the repairs while the tunnels remained out of service.
- Access – limited by collapsed buildings and traffic congestion.

California Division of Mines and Geology Planning Scenarios

The California Division of Mines and Geology has prepared two special publications intended to provide an understanding of the impacts of major earthquakes in southern California. The first was a Magnitude 8.3 Earthquake on the San Andreas Fault (California, 1982). The second was a magnitude 7 earthquake on the San Bernardino Valley segment of the San Jacinto Fault (California, 1993). Both studies anticipate significant damage to the State Water Project. That information is discussed in a later section of this report that focuses on the State Water Project. Impacts to other water facilities in the SBVWMD service area are discussed here.

The San Andreas publication hypothesized an earthquake in which the southern limit of surface fault rupture is outside of the San Bernardino service area (approximately 10 miles northwest of Devil Canyon Power Plant). Thus, it does not directly address facilities within the San Bernardino service area. Within the area that is affected (generally west and north of San Bernardino), it does not anticipate widespread damage to primary transmission lines, although some pipe failures will occur. In distribution lines, there will be hundreds of breaks and thousands of leaks. Pumping plants are generally more compact structures and, with the exception of related electrical equipment and transformers, will probably not suffer as great of damage as distribution pipelines.

The San Jacinto publication hypothesized an earthquake within Valley District's service area and thus, substantially more impact on SBVWMD. The publication's planning scenario states that within 25 miles of the fault, damage to treatment facilities, pumping stations, and transmission and distribution pipelines will reduce service by 20 percent for up to five days. Restoration will take up to two weeks. People will be asked to use emergency supplies, boil their water, or take other safety measures against contamination. Delays will be necessary because waste water lines must be repaired before fresh water lines. The most serious

problems will be concentrated in the low lying areas of San Bernardino and the Santa Ana River Basin. The extent of damage and contamination of wells and groundwater will depend on groundwater levels at the time of the earthquake.

Specific failures hypothesized by the San Jacinto publication to facilities that convey SBVWMD water include (State Water Project facilities are discussed in a later section):

- San Gabriel Valley MWD's pipeline closed for 5 to 10 days. Fault displacement.
- Valley District's Foothill Pipeline closed for 4 to 6 days. Moderate liquefaction potential.
- Valley District's Baseline Feeder closed for 4 to 6 days.

The main source for this hypothesis was the then General Manager of SBVWMD, Louis Fletcher.

Regional Electrical System Vulnerability

During this evaluation, no recent information was available from Southern California Edison on the anticipated likelihood of a widespread failure of the electrical system serving the San Bernardino Area. Nor was information found on the times required to restore power after the Loma Prieta Earthquake. In the absence of that data, we reviewed the impacts of the Northridge earthquake.

The total generating capacity supplying the greater Los Angeles area at the time of the Magnitude 6.8 Northridge Earthquake of January 17, 1994, was approximately 10,000 MW. When the earthquake occurred at 4:30 AM the southern California area was exporting approximately 1800 MW to the Northwest over AC and DC interties that link Southern California to Oregon and Washington State. As a result of the earthquake, the AC and DC interties were opened and the power grid in the United States west of Denver was spilt into three separate islands. Due to the loss of power, there were short-term outages, up to three hours, in British Columbia, Montana, Wyoming, Idaho, Oregon, and Washington.

Within the City of Los Angeles, restoration times of power at major substations varied from 6:18 AM to 11:03 PM on the day of the earthquake. Due to distribution system failures, power remained out for a longer period for some customers. But, within 24 hours power was restored to over 90 percent of its customers. Had the earthquake occurred during the summer when loads are heavier, restoration would have taken longer.

2015 San Bernardino Valley RUWMP

Appendix O

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

American Water Works Association.
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? Click to access definition
+ Click to add a comment

Water Audit Report for: San Bernardino Valley Municipal Water District (CA3610019)
Reporting Year: 2015 | 1/2015 - 12/2015

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

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

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

	Grading	Value		Pcnt:	Value:	
Volume from own sources:	10	6,874.000	acre-ft/yr			acre-ft/yr
Water imported:	10	27,227.000	acre-ft/yr			acre-ft/yr
Water exported:	10	6,521.000	acre-ft/yr			acre-ft/yr
WATER SUPPLIED:		**27,580.000**	acre-ft/yr	Enter negative % or value for under-registration Enter positive % or value for over-registration		

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

	Grading	Value		Pcnt:	Value:	
Billed metered:	10	27,160.000	acre-ft/yr			
Billed unmetered:	10	0.000	acre-ft/yr			
Unbilled metered:	10	0.000	acre-ft/yr			
Unbilled unmetered:	10	0.000	acre-ft/yr		0.000	acre-ft/yr
AUTHORIZED CONSUMPTION:		**27,160.000**	acre-ft/yr			

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

WATER LOSSES (Water Supplied - Authorized Consumption)

420.000 acre-ft/yr

Apparent Losses

	Grading	Value		Pcnt:	Value:	
Unauthorized consumption:	5	0.000	acre-ft/yr		0.000	acre-ft/yr
Customer metering inaccuracies:	10	27.187	acre-ft/yr	0.10%		acre-ft/yr
Systematic data handling errors:	5	0.000	acre-ft/yr		0.000	acre-ft/yr
Apparent Losses:		**27.187**	acre-ft/yr			

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **392.813** acre-ft/yr

WATER LOSSES: **420.000** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **420.000** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

	Grading	Value	
Length of mains:	10	38.9	miles
Number of active AND inactive service connections:	10	6	
Service connection density:		0	conn./mile main
Are customer meters typically located at the curbstop or property line?		No	
Average length of customer service line:	10	0.0	ft
Average operating pressure:	5	170.0	psi

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

COST DATA

	Grading	Value	
Total annual cost of operating water system:	10	$49,553,052	$/Year
Customer retail unit cost (applied to Apparent Losses):	8	$0.57	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	8	$149.00	$/acre-ft

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 90 out of 100 *****

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

PRIORITY AREAS FOR ATTENTION:

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

1: Unauthorized consumption
2: Systematic data handling errors
3: Customer retail unit cost (applied to Apparent Losses)

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

American Water Works Association.
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+ Click to add a comment

Water Audit Report for: East Valley Water District
Reporting Year: 2015 | 1/2015 - 12/2015

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

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

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

						Pcnt:		Value:	
Volume from own sources:	2	5,593.389	MG/Yr	n/a		0.00%			MG/Yr
Water imported:	n/a	0.000	MG/Yr						MG/Yr
Water exported:	n/a	0.000	MG/Yr						MG/Yr

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

WATER SUPPLIED: 5,593.389 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	6	5,143.356	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	7	3.021	MG/Yr			
Unbilled unmetered:		69.917	MG/Yr	1.25%		MG/Yr

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

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

AUTHORIZED CONSUMPTION: 5,216.295 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 377.094 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		13.983	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	3	159.166	MG/Yr	3.00%		MG/Yr
Systematic data handling errors:		12.858	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 186.008 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 191.086 MG/Yr

WATER LOSSES: 377.094 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 450.033 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	315.0	miles
Number of active AND inactive service connections:	6	22,944	
Service connection density:		73	conn./mile main

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

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

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

Average operating pressure:	3	80.0	psi

COST DATA

Total annual cost of operating water system:	10	$30,216,742	$/Year	
Customer retail unit cost (applied to Apparent Losses):	8	$1.93	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	5	$373.30	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 48 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

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

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0
American Water Works Association.

? Click to access definition
+ Click to add a comment

Water Audit Report for: City of Loma Linda (CA3610013)
Reporting Year: 2015

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the

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

To select the correct data grading for each input, determine the highest grade where

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

					Pcnt:	Value:	
Volume from own sources:	8	4,680.460	acre-ft/yr				acre-ft/yr
Water imported:	8	1.270	acre-ft/yr				acre-ft/yr
Water exported:	2	0.001	acre-ft/yr				acre-ft/yr

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

WATER SUPPLIED: 4,681.729 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	10	4,143.320	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	1		acre-ft/yr			
Unbilled unmetered:		58.522	acre-ft/yr	1.25%		acre-ft/yr

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

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

AUTHORIZED CONSUMPTION: 4,201.842 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) 479.887 acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		11.704	acre-ft/yr	0.25%		acre-ft/yr

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

Customer metering inaccuracies:	6	0.000	acre-ft/yr			acre-ft/yr
Systematic data handling errors:		10.358	acre-ft/yr	0.25%		acre-ft/yr

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

Apparent Losses: 22.063 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 457.825 acre-ft/yr

WATER LOSSES: 479.887 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 538.409 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	7	77.2	miles
Number of active AND inactive service connections:	7	5,403	
Service connection density:		70	conn./mile main

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

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

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

Average operating pressure: 5 94.0 psi

COST DATA

Total annual cost of operating water system:	8	$6,390,700	$/Year	
Customer retail unit cost (applied to Apparent Losses):	8	$2.45	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	7	$642.26	$/acre-ft	☐Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 75 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Customer metering inaccuracies
3: Unauthorized consumption

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

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Water Audit Report for: City of Redlands (69-49 Ammendment No.2)
Reporting Year: 2016 | 1/2015 - 12/2015

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

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

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	8	21,767.200	acre-ft/yr		0.00%		acre-ft/yr
Water imported:	n/a	0.000	acre-ft/yr				acre-ft/yr
Water exported:	n/a	0.000	acre-ft/yr				acre-ft/yr
WATER SUPPLIED:		**21,767.200**	acre-ft/yr				

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

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	6	20,005.000	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	n/a	0.000	acre-ft/yr			
Unbilled unmetered:		272.090	acre-ft/yr	1.25%		acre-ft/yr

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

AUTHORIZED CONSUMPTION: **20,277.090** acre-ft/yr

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

WATER LOSSES (Water Supplied - Authorized Consumption)

1,490.110 acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		54.418	acre-ft/yr	0.25%		acre-ft/yr

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

Customer metering inaccuracies:	8	0.000	acre-ft/yr			acre-ft/yr
Systematic data handling errors:		50.013	acre-ft/yr	0.25%		acre-ft/yr

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

Apparent Losses: **104.431** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **1,385.680** acre-ft/yr

WATER LOSSES: **1,490.110** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **1,762.200** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	7	400.0	miles
Number of active AND inactive service connections:	10	24,864	
Service connection density:		62	conn./mile main

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

Average length of customer service line:

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

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

Average operating pressure: 8 | 100.0 | psi

COST DATA

Total annual cost of operating water system:	10	$25,600,000	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$2.94	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	4	$128.96	$/acre-ft	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

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

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

PRIORITY AREAS FOR ATTENTION:

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

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

AWWA Free Water Audit Software:
Reporting Worksheet

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Water Audit Report for: San Bernardino Municipal Water Department
Reporting Year: 2015 | 1/2015 - 12/2015

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

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

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

				Pcnt:	Value:	
Volume from own sources:	7	36,041.000	acre-ft/yr	2.00%		acre-ft/yr
Water imported:	n/a	0.000	acre-ft/yr			acre-ft/yr
Water exported:	8	370.000	acre-ft/yr	2.00%		acre-ft/yr

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

WATER SUPPLIED: 34,971.569 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	32,241.600	acre-ft/yr			
Billed unmetered:	7	0.000	acre-ft/yr			
Unbilled metered:	8	104.000	acre-ft/yr			
Unbilled unmetered:	9	156.000	acre-ft/yr		156.000	acre-ft/yr

Use buttons to select percentage of water supplied OR value

AUTHORIZED CONSUMPTION: ? 32,501.600 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

2,469.969 acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		87.429	acre-ft/yr	0.25%		acre-ft/yr

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

Customer metering inaccuracies:	7	1,000.379	acre-ft/yr	3.00%		acre-ft/yr
Systematic data handling errors:	7	80.604	acre-ft/yr	0.25%		acre-ft/yr

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

Apparent Losses: ? 1,168.412 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 1,301.556 acre-ft/yr

WATER LOSSES: 2,469.969 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: ? 2,729.969 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	5	700.0	miles
Number of active AND inactive service connections:	7	52,177	
Service connection density:	?	75	conn./mile main

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

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

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

Average operating pressure: 7 75.0 psi

COST DATA

Total annual cost of operating water system:	8	$32,145,109	$/Year
Customer retail unit cost (applied to Apparent Losses):	7	$1.28	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	7		$/acre-ft

☑ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

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

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Unauthorized consumption

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Reporting Worksheet

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Water Audit Report for: West Valley Water District
Reporting Year: 2015 (1/2015 - 12/2015)

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

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	7	12,639.400	acre-ft/yr				acre-ft/yr
Water imported:	7	4,366.800	acre-ft/yr				acre-ft/yr
Water exported:	7	1,191.100	acre-ft/yr				acre-ft/yr
WATER SUPPLIED:		**15,815.100**	acre-ft/yr				

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

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	8	14,977.500	acre-ft/yr			
Billed unmetered:	n/a	0.000	acre-ft/yr			
Unbilled metered:	10	0.000	acre-ft/yr			
Unbilled unmetered:		197.689	acre-ft/yr	1.25%		acre-ft/yr

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

AUTHORIZED CONSUMPTION:		**15,175.189**	acre-ft/yr

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

				Pcnt:	Value:	
WATER LOSSES (Water Supplied - Authorized Consumption)		**639.911**	acre-ft/yr			
Apparent Losses						
Unauthorized consumption:		39.538	acre-ft/yr	0.25%		acre-ft/yr

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

Customer metering inaccuracies:	7	14.992	acre-ft/yr		14.992	acre-ft/yr
Systematic data handling errors:	7	15.000	acre-ft/yr		15.000	acre-ft/yr
Apparent Losses:		**69.530**	acre-ft/yr			
Real Losses (Current Annual Real Losses or CARL)						
Real Losses = Water Losses - Apparent Losses:		**570.382**	acre-ft/yr			
WATER LOSSES:		**639.911**	acre-ft/yr			

NON-REVENUE WATER

NON-REVENUE WATER:		**837.600**	acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	5	380.0	miles	
Number of active AND inactive service connections:	7	20,540		
Service connection density:		54	conn./mile main	
Are customer meters typically located at the curbstop or property line?		No		
Average length of customer service line:	6	25.0	ft	(length of service line, beyond the property boundary, that is the responsibility of the utility)
Average operating pressure:	7	70.0	psi	

COST DATA

Total annual cost of operating water system:	7	$20,233,436	$/Year	
Customer retail unit cost (applied to Apparent Losses):	7	$2.30	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	6	$150.00	$/acre-ft	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

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

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Variable production cost (applied to Real Losses)
3: Unauthorized consumption

AWWA Free Water Audit Software:
Reporting Worksheet

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Water Audit Report for: Yucaipa Valley Water District
Reporting Year: 2015 (1/2015 - 12/2015)

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

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

					Pcnt:	Value:	
Volume from own sources:	8	5,137.000	acre-ft/yr	10	0.25%		acre-ft/yr
Water imported:	10	4,587.000	acre-ft/yr	10	0.25%		acre-ft/yr
Water exported:	9	130.000	acre-ft/yr	10	0.25%		acre-ft/yr

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

WATER SUPPLIED: 9,570.075 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	10	8,610.000	acre-ft/yr			
Billed unmetered:	n/a		acre-ft/yr			
Unbilled metered:	8	260.000	acre-ft/yr			
Unbilled unmetered:		119.626	acre-ft/yr	1.25%		acre-ft/yr

Use buttons to select percentage of water supplied OR value

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

AUTHORIZED CONSUMPTION: 8,989.626 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) 580.449 acre-ft/yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		23.925	acre-ft/yr	0.25%		acre-ft/yr

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

Customer metering inaccuracies:	6	22.231	acre-ft/yr	0.25%		acre-ft/yr
Systematic data handling errors:		21.525	acre-ft/yr	0.25%		acre-ft/yr

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

Apparent Losses: 67.681 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 512.768 acre-ft/yr

WATER LOSSES: 580.449 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 960.075 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	10	203.0	miles
Number of active AND inactive service connections:	10	12,506	
Service connection density:		62	conn./mile main

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

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

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

Average operating pressure:	10	50.0	psi

COST DATA

Total annual cost of operating water system:	10	$13,072,750	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$1.43	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	10	$300.00	$/acre-ft	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 86 out of 100 *****

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Customer metering inaccuracies
3: Unauthorized consumption

AWWA Free Water Audit Software:
Reporting Worksheet

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Water Audit Report for: Colton (3610014)
Reporting Year:

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the

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

To select the correct data grading for each input, determine the highest grade where

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	8	2,934.300	MG/Yr				MG/Yr
Water imported:	8	0.000	MG/Yr				MG/Yr
Water exported:	8	0.000	MG/Yr				MG/Yr
WATER SUPPLIED:		**2,934.300**	MG/Yr				

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

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	2,589.760	MG/Yr			
Billed unmetered:	7	0.000	MG/Yr			
Unbilled metered:	7	0.000	MG/Yr			
Unbilled unmetered:		36.679	MG/Yr	1.25%		MG/Yr
AUTHORIZED CONSUMPTION:		**2,626.439**	MG/Yr			

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

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

WATER LOSSES (Water Supplied - Authorized Consumption)

307.861 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		7.336	MG/Yr	0.25%		MG/Yr
Customer metering inaccuracies:	6	0.000	MG/Yr			MG/Yr
Systematic data handling errors:		6.474	MG/Yr	0.25%		MG/Yr
Apparent Losses:		**13.810**	MG/Yr			

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

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

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **294.051** MG/Yr

WATER LOSSES: **307.861** MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: **344.540** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	158.0	miles
Number of active AND inactive service connections:	8	10,301	
Service connection density:		65	conn./mile main

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

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

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

Average operating pressure: 8 — 80.0 psi

COST DATA

Total annual cost of operating water system:	8	$8,671,680	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$1.61	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	8	$359.64	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 75 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

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

AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

American Water Works Association

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Water Audit Report for: Rialto Water Services/Veolia (3610038)

Reporting Year: 2015 1/2015 - 12/2015

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

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

To select the correct data grading for each input, determine the highest grade where the

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ----------> Pcnt: Value:

Volume from own sources:	7	5,464.000	acre-ft/yr					acre-ft/yr
Water imported:	6	3,308.110	acre-ft/yr					acre-ft/yr
Water exported:	7	89.920	acre-ft/yr					acre-ft/yr

Enter negative % or value for under-registration

Enter positive % or value for over-registration

WATER SUPPLIED: 8,682.190 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

Pcnt: Value:

Billed metered:	9	7,713.080	acre-ft/yr		
Billed unmetered:	10	0.000	acre-ft/yr		
Unbilled metered:	10	19.105	acre-ft/yr		
Unbilled unmetered:	10	108.527	acre-ft/yr	1.25%	acre-ft/yr

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

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

AUTHORIZED CONSUMPTION: 7,840.712 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) 841.478 acre-ft/yr

Apparent Losses

Pcnt: Value:

Unauthorized consumption:		21.705	acre-ft/yr	0.25%	acre-ft/yr

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

Customer metering inaccuracies:	4	0.000	acre-ft/yr		acre-ft/yr
Systematic data handling errors:	7	19.283	acre-ft/yr	0.25%	acre-ft/yr

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

Apparent Losses: 40.988 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 800.489 acre-ft/yr

WATER LOSSES: 841.478 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 969.110 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	5	164.5	miles
Number of active AND inactive service connections:	8	11,595	
Service connection density:		70	conn./mile main

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

Average length of customer service line: 7 25.0 ft (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average operating pressure: 7 70.0 psi

COST DATA

Total annual cost of operating water system:	7	$12,311,549	$/Year	
Customer retail unit cost (applied to Apparent Losses):	7	$2.12	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	6	$200.00	$/acre-ft	Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

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

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources

2: Water imported

3: Customer metering inaccuracies

AWWA Free Water Audit Software:
Reporting Worksheet

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American Water Works Association

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Water Audit Report for: Riverside Highland Water Company (3610057)
Reporting Year: 2015 | 1/2015 - 12/2015

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the

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

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

		Grading			Pcnt:	Value:	
Volume from own sources:	2,921.000	5	acre-ft/yr	5			acre-ft/yr
Water imported:	0.000	n/a	acre-ft/yr				acre-ft/yr
Water exported:	0.000	n/a	acre-ft/yr				acre-ft/yr
WATER SUPPLIED:	**2,921.000**		acre-ft/yr				

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

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

		Grading		Pcnt:	Value:	
Billed metered:	2,775.411	8	acre-ft/yr			
Billed unmetered:	79.138	9	acre-ft/yr			
Unbilled metered:	0.000	n/a	acre-ft/yr			
Unbilled unmetered:	36.513		acre-ft/yr	1.25%		acre-ft/yr

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

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

AUTHORIZED CONSUMPTION:	**2,891.062**		acre-ft/yr
WATER LOSSES (Water Supplied - Authorized Consumption)	**29.939**		acre-ft/yr

Apparent Losses

		Grading		Pcnt:	Value:	
Unauthorized consumption:	7.303		acre-ft/yr	0.25%		acre-ft/yr

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

Customer metering inaccuracies:	0.000	7	acre-ft/yr	0.00%		acre-ft/yr
Systematic data handling errors:	6.939		acre-ft/yr	0.25%		acre-ft/yr

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

Apparent Losses:	**14.241**	acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:	**15.697**	acre-ft/yr
WATER LOSSES:	**29.939**	acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER:	**66.451**	acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

		Grading	
Length of mains:	76.0	8	miles
Number of active AND inactive service connections:	4,134	8	
Service connection density:	54		conn./mile main
Are customer meters typically located at the curbstop or property line?	Yes		
Average length of customer service line:			(length of service line, beyond the property boundary, that is the responsibility of the utility)

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

Average operating pressure:	70.0	8	psi

COST DATA

		Grading		
Total annual cost of operating water system:	$2,970,766	10	$/Year	
Customer retail unit cost (applied to Apparent Losses):	$1.18	7	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	$129.60	7	$/acre-ft	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 66 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Unauthorized consumption
3: Systematic data handling errors

2015 San Bernardino Valley RUWMP

Appendix P

CUWCC BMP Retail Coverage Report 2013

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

7025 Yucaipa Valley Water District

1. Conservation Coordinator provided with necessary resources to implement BMPs?

Name: Jennifer Ares

Title: Water Resource Manager

Email: jares@yvwd.dst.ca.us

2. Water Waste Prevention Documents

WW Document Name	WWP File Name	WW Prevention URL	WW Prevention Ordinance Terms Description
Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.			The current water waste ordinance is dated 1998 but the district has adopted various resolutions and practices that relate to water waste prevention.
Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area.			
Option C Describe any documentation of support for legislation or regulations that prohibit water waste.			
Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.			
Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP.	BMP 1.1 Option D.docx		
Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development.			

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Retail Coverage Report 2013

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices **ON TRACK**

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.2 Water Loss Control **NOT ON TRACK**

7025 Yucaipa Valley Water District

Completed Standard Water Audit Using AWWA Software?	Yes
AWWA File provided to CUWCC?	Yes
2013 AWWA-WAS-v5-09152014.xls	
AWWA Water Audit Validity Score?	93
Complete Training in AWWA Audit Method	Yes
Complete Training in Component Analysis Process?	Yes
Component Analysis?	No
Repaired all leaks and breaks to the extent cost effective?	Yes
Locate and Repar unreported leaks to the extent cost effective?	Yes
Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair.	Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)
201			39.75	False		

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.3 Metering With Commodity

ON TRACK

7025 Yucaipa Valley Water District

Numbered Unmetered Accounts	No
Metered Accounts billed by volume of use	Yes
Number of CII Accounts with Mixed Use Meters	52
Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	Yes
Feasibility Study provided to CUWCC?	Yes

Date: 8/31/2003

Uploaded file name:

Completed a written plan, policy or program to test, repair and replace meters	Yes

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

On Track

7025 Yucaipa Valley Water District

Implementation (Water Rate Structure)

Customer Class	Water Rate Type	Conserving Rate?	(V) Total Revenue Comodity Charges	(M) Total Revenue Fixed Carges
Single-Family	Increasing Block	Yes	4364294.93	1701562.74
Multi-Family	Increasing Block	Yes	868659.42	792702.18
Commercial	Increasing Block	Yes	217366.64	90617.44
Industrial	Increasing Block	Yes	34073.31	2954.05
Institutional	Increasing Block	Yes	139271.19	27101.74
Dedicated Irrigation	Increasing Block	Yes	326855.35	46684.16
Agricultural	Increasing Block	Yes	979.2	
Other	Increasing Block	Yes	352382.65	31820.54
			6303882.69	**2693442.85**

Calculate: V / (V + M) **70 %**

Implementation Option: Use Annual Revenue As Reported

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: Yes

Customer Class	Rate Type	Conserving Rate?
Single-Family	Non-Volumetric Flat Rate	No
Commercial	Increasing Block Seasonal	Yes

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

7025 **Yucaipa Valley Water District** **Retail**

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

San Bernardino Valley Municipal Water District - Bob Tincher bobt@sbvmwd.com

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quater of the reporting year? Yes

Public Outreach Program List	Number
Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets	12
Website	6
Landscape water conservation media campaigns	3
General water conservation information	6
Total	**27**

Did at least one contact take place during each quater of the reporting year? Yes

Number Media Contacts	Number
News releases	4
Total	**4**

Did at least one website update take place during each quater of the reporting year? Yes

Public Information Program Annual Budget

Annual Budget Category	Annual Budget Amount
Public Relations	21125
Total Amount:	**21125**

Public Outreah Additional Programs
Free tours of the drinking water and wastewater facility

Description of all other Public Outreach programs

Comments:

At Least As effective As No

Exemption No 0

CUWCC BMP Coverage Report 2013

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.2 School Education Programs

ON TRACK

7025 Yucaipa Valley Water District **Retail**

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

San Bernardino Valley Municipal Water Distrrict, Bob Tincher, Bobt@sbvmwd.com

Materials meet state education framework requirements? Yes

Each program conducted in the schools and during the tours coincide with the state standards.

Materials distributed to K-6? Yes

Students receive information on "how many gallons saved". They also receive information on drought tolerant landscaping to take home to their parents.

Materials distributed to 7-12 students? Yes (Info Only)

Students receive information on water source and supply. State water project, groundwater and surface water.

Annual budget for school education program: 10000.00

Description of all other water supplier education programs

Tours of the drinking water plant and waste water treatment plant are offered to students.

Comments:

At Least As effective As No

Exemption No 0

CUWCC BMP Retail Coverage Report 2014

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices

ON TRACK

7025 Yucaipa Valley Water District

1. Conservation Coordinator provided with necessary resources to implement BMPs?

Name: Jennifer Ares

Title: Water Resource Manager

Email: jares@yvwd.dst.ca.us

2. Water Waste Prevention Documents

WW Document Name	WWP File Name	WW Prevention URL	WW Prevention Ordinance Terms Description
Option A Describe the ordinances or terms of service adopted by your agency to meet the water waste prevention requirements of this BMP.			
Option B Describe any water waste prevention ordinances or requirements adopted by your local jurisdiction or regulatory agencies within your service area.			
Option C Describe any documentation of support for legislation or regulations that prohibit water waste.	BMP 1.1 Option C.docx		
Option D Describe your agency efforts to cooperate with other entities in the adoption or enforcement of local requirements consistent with this BMP.			
Option E Describe your agency support positions with respect to adoption of legislation or regulations that are consistent with this BMP.			
Option F Describe your agency efforts to support local ordinances that establish permits requirements for water efficient design in new development.			

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Retail Coverage Report 2014

Foundational Best Managemant Practices for Urban Water Efficiency

BMP 1.1 Operation Practices **ON TRACK**

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.2 Water Loss Control **NOT ON TRACK**

7025 Yucaipa Valley Water District

Completed Standard Water Audit Using AWWA Software?	Yes
AWWA File provided to CUWCC?	Yes
2014 AWWA-WAS-v5-09152014.xls	
AWWA Water Audit Validity Score?	93
Complete Training in AWWA Audit Method	Yes
Complete Training in Component Analysis Process?	Yes
Component Analysis?	No
Repaired all leaks and breaks to the extent cost effective?	Yes
Locate and Repar unreported leaks to the extent cost effective?	Yes
Maintain a record keeping system for the repair of reported leaks, including time of report, leak location, type of leaking pipe segment or fitting, and leak running time from report to repair.	Yes

Provided 7 Types of Water Loss Control Info

Leaks Repairs	Value Real Losses	Value Apparent Losses	Miles Surveyed	Press Reduction	Cost Of Interventions	Water Saved (AF)
216			23.66	False		

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.3 Metering With Commodity

ON TRACK

7025 Yucaipa Valley Water District

Numbered Unmetered Accounts	No
Metered Accounts billed by volume of use	Yes
Number of CII Accounts with Mixed Use Meters	52
Conducted a feasibility study to assess merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters?	Yes
Feasibility Study provided to CUWCC?	Yes

Date: 8/31/2003

Uploaded file name:

Completed a written plan, policy or program to test, repair and replace meters	Yes

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 1.4 Retail Conservation Pricing

Not On Track

7025 Yucaipa Valley Water District

Implementation (Water Rate Structure)

Customer Class	Water Rate Type	Conserving Rate?	(V) Total Revenue Comodity Charges	(M) Total Revenue Fixed Carges
Single-Family	Increasing Block	Yes	4448907.78	1859240.88
Multi-Family	Increasing Block	Yes	837333.73	855498.34
Commercial	Increasing Block	Yes	211244.46	98163.33
Industrial	Increasing Block	Yes	67680.74	2698.92
Institutional	Increasing Block	Yes	150687.32	32203.45
Dedicated Irrigation	Increasing Block	Yes	353089.81	49641.27
Agricultural	Increasing Block	Yes	1395	
Other	Increasing Block	Yes	413169.25	36765.12
			6483508.09	**2934211.31**

Calculate: V / (V + M) **69 %**

Implementation Option: Use Annual Revenue As Reported

☐ Use 3 years average instead of most recent year

Canadian Water and Wastewater Association

Upload file:

Agency Provide Sewer Service: Yes

Customer Class	Rate Type	Conserving Rate?
Single-Family	Non-Volumetric Flat Rate	No
Commercial	Increasing Block	Yes

At Least As effective As No

Exemption No

Comments:

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

7025 **Yucaipa Valley Water District** **Retail**

Does your agency perform Public Outreach programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

San Bernardino Valley Municipal Water District - Bob Tincher bobt@sbvmwd.com

The name of agency, contact name and email address if not CUWCC Group 1 members

Did at least one contact take place during each quater of the reporting year? Yes

Public Outreach Program List	Number
Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets	12
Website	12
Landscape water conservation media campaigns	3
General water conservation information	12
Total	**39**

Did at least one contact take place during each quater of the reporting year? Yes

Number Media Contacts	Number
News releases	6
Articles or stories resulting from outreach	2
Total	**8**

Did at least one website update take place during each quater of the reporting year? Yes

Public Information Program Annual Budget

Annual Budget Category	Annual Budget Amount
Public Relations	22091
Total Amount:	**22091**

Public Outreah Additional Programs
Free tours of the drinking water and wastewater facility
Inland Empire Garden Friendly Program

Description of all other Public Outreach programs

Comments:

At Least As effective As No

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.1 Public Outreach

ON TRACK

Exemption	No	0

CUWCC BMP Coverage Report 2014

Foundational Best Management Practices For Urban Water Efficiency

BMP 2.2 School Education Programs

ON TRACK

7025 Yucaipa Valley Water District **Retail**

Does your agency implement School Education programs? Yes

The list of wholesale agencies performing public outreach which can be counted to help the agency comply with the BMP

San Bernardino Valley Municipal Water Distrrict, Bob Tincher, Bobt@sbvmwd.com

Materials meet state education framework requirements? Yes

Each program conducted in the schools and during the tours coincide with the state standards.

Materials distributed to K-6? Yes

Students receive information on "how many gallons saved". They also receive information on drought tolerant landscaping to take home to their parents.

Materials distributed to 7-12 students? Yes (Info Only)

Students receive information on water source and supply. State water project, groundwater and surface water.

Annual budget for school education program: 10000.00

Description of all other water supplier education programs

Tours of the drinking water plant and waste water treatment plant are offered to students.

Comments:

At Least As effective As No

Exemption No 0

CUWCC BMP Coverage Report 2014

7025 Yucaipa Valley Water District

Baseline GPCD: 256.32

GPCD in 2014 185.14

GPCD Target for 2018: 210.20

Biennial GPCD Compliance Table

ON TRACK

		Target		Highest Acceptable Bound	
Year	Report	% Base	GPCD	% Base	GPCD
2010	1	96.4%	**247.10**	100%	**256.30**
2012	2	92.8%	**237.90**	96.4%	**247.10**
2014	3	89.2%	**228.60**	92.8%	**237.90**
2016	4	85.6%	**219.40**	89.2%	**228.60**
2018	5	82.0%	**210.20**	82.0%	**210.20**

2015 San Bernardino Valley RUWMP

Appendix Q

SB X7-7 Tables – East Valley Water District

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

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	22,052	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	2004	
	Year ending baseline period range[4]	2008	

[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: 2010 UWMP

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1999	86,404
Year 2	2000	84,764
Year 3	2001	84,715
Year 4	2002	88,286
Year 5	2003	94,711
Year 6	2004	97,918
Year 7	2005	99,167
Year 8	2006	100,406
Year 9	2007	104,570
Year 10	2008	99,027
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2004	97,918
Year 2	2005	99,167
Year 3	2006	100,406
Year 4	2007	104,570
Year 5	2008	99,027
2015 Compliance Year Population		
2015		104,457
NOTES: DWR Population Tool		

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year *Fm SB X7-7 Table 3*		**Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**Deductions**					**Annual 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.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1999	21,443			-		-	21,443
Year 2	2000	22,271			-		-	22,271
Year 3	2001	22,271			-		-	22,271
Year 4	2002	21,321	1,271		-		-	20,050
Year 5	2003	23,110	1,117		-		-	21,993
Year 6	2004	24,597	1,698		-		-	22,899
Year 7	2005	22,614			-		-	22,614
Year 8	2006	27,186	2,293		-		-	24,893
Year 9	2007	24,519	1,581		-		-	22,938
Year 10	2008	23,951			-		-	23,951
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**22,532**
5 Year Baseline - Gross Water Use								
Year 1	2004	24,597	1,698		-		-	22,899
Year 2	2005	22,614			-		-	22,614
Year 3	2006	27,186	2,293		-		-	24,893
Year 4	2007	24,519	1,581		-		-	22,938
Year 5	2008	23,951			-		-	23,951
5 year baseline average gross water use								**23,459**
2015 Compliance Year - Gross Water Use								
2015		17,165	-		-		-	**17,165**
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3								
NOTES:								

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

Name of Source	SBBA
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1999	17,653		17,653
Year 2	2000	18,503		18,503
Year 3	2001	18,503		18,503
Year 4	2002	17,288		17,288
Year 5	2003	19,401		19,401
Year 6	2004	21,547		21,547
Year 7	2005	18,788		18,788
Year 8	2006	23,120		23,120
Year 9	2007	20,060		20,060
Year 10	2008	20,813		20,813
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2004	21,547		21,547
Year 2	2005	18,788		18,788
Year 3	2006	23,120		23,120
Year 4	2007	20,060		20,060
Year 5	2008	20,813		20,813
2015 Compliance Year - Water into Distribution System				
2015		13,501		13,501

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

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Santa Ana River
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999	2939		2,939
Year 2	2,000	3056		3,056
Year 3	2,001	3056		3,056
Year 4	2,002	3353		3,353
Year 5	2,003	2968		2,968
Year 6	2,004	2298		2,298
Year 7	2,005	3103		3,103

Year 8	2,006	3206		3,206
Year 9	2,007	3752		3,752
Year 10	2,008	3138		3,138
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004	2298		2,298
Year 2	2,005	3103		3,103
Year 3	2,006	3206		3,206
Year 4	2,007	3752		3,752
Year 5	2,008	3138		3,138
2015 Compliance Year - Water into Distribution System				
2015		3,371		3,371
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	State Water Project Water Purchase
This water source is:	
☐	The supplier's own water source
☑	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999	851		851
Year 2	2,000	712		712
Year 3	2,001	712		712
Year 4	2,002	680		680
Year 5	2,003	741		741
Year 6	2,004	752		752
Year 7	2,005	723		723
Year 8	2,006	860		860
Year 9	2,007	707		707
Year 10	2,008	0		0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004	752		752
Year 2	2,005	723		723
Year 3	2,006	860		860
Year 4	2,007	707		707
Year 5	2,008	0		0
2015 Compliance Year - Water into Distribution System				
2015		294		294
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				

☐

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	86,404	21,443	222
Year 2	2000	84,764	22,271	235
Year 3	2001	84,715	22,271	235
Year 4	2002	88,286	20,050	203
Year 5	2003	94,711	21,993	207
Year 6	2004	97,918	22,899	209
Year 7	2005	99,167	22,614	204
Year 8	2006	100,406	24,893	221
Year 9	2007	104,570	22,938	196
Year 10	2008	99,027	23,951	216
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**215**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2004	97,918	22,899	209
Year 2	2005	99,167	22,614	204
Year 3	2006	100,406	24,893	221
Year 4	2007	104,570	22,938	196
Year 5	2008	99,027	23,951	216
5 Year Average Baseline GPCD				**209**
2015 Compliance Year GPCD				
2015		104,457	17,166	**147**
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	215
5 Year Baseline GPCD	209
2015 Compliance Year GPCD	147
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☐	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☑	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
209	199	175	**175**

[1] Maximum 2020 Target is 95% of the 5 Year Baseline GPCD *[2] 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.*

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
175	215	**195**
NOTES:		

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)* Enter "0" if Adjustment Not Used: Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
147	195	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	-	147	147	**YES**

NOTES:

User Input -- Provisional Method 4 Target

Target Calculation Option (select one): * Calculate Targets Using Default Indoor Residential Savings

* = Required Data

Water Supplier Name: * East Valley Water District

10-15 Year Baseline Water Use Information

Baseline Period: * 1999-2008

Midpoint of Baseline Period: 2003

Baseline Water Use GPCD: * 215.0

Population in Midpoint Year: * 94,711

5 Year Baseline Water Use Information

Baseline Period: * 2004-2008

Baseline Water Use GPCD: * 209.0

95% of 5-Year Baseline GPCD: 198.6

Unmetered Connections

Number of Unmetered Connections in 2003: * 0

Water Use By Unmetered Connections In 2003: * 0 Acre-Feet

Baseline CII Water Use[1]

CII Water Use in 2003: * 5,937 Acre-Feet

Per Capita Use: 56.0 GPCD

[1]CII = Commercial, Industrial, Institutional.

If you have chosen to calculate targets using the Default Indoor Residential Savings, you do not need to complete the remaining tables.
Go to the "Calculated Targets" worksheet.

Optional Data Needed to Calculate Targets Using the Indoor Residential Savings Calculators

NOTE: You only need to complete the tables below if you have chosen to calculate targets using the indoor residential savings calculators.
The data you enter here is used to calculate the 2020 water saving values for residential toilets, washers, and showerheads.
If you are using the Default Indoor Residential Savings you do not need to enter this data.

Persons and Plumbing Fixtures Per Household

Units Per Household:	Single Family	Multi Family
Persons		
Toilets		
Showers		

Residential Housing Units

Year	Single Family	Multi Family
1991		
1992		
1993		
1994		
1995		
1996		
1997		
1998		
1999		
2000		
2001		
2002		

The table below shows average shower and toilet counts per household for major metropolitan areas. The table is based on 2003 data published by the American Housing Survey.

SMSA Code	SMSA name	Single Family Showers	Single Family Toilets	Multi Family Showers	Multi Family Toilets
360	Anaheim-Santa Ana	1.92	2.33	1.25	1.44
680	Bakersfield	1.64	1.96	1.38	1.48
2840	Fresno	1.62	1.91	1.19	1.29
4480	Los Angeles-Long Beach	1.58	1.93	1.19	1.34
5170	Modesto	1.79	1.99	1.23	1.58
5775	Oakland	1.77	2.07	1.17	1.36
6000	Oxnard-Ventura	1.87	2.22	1.16	1.37
6780	Riverside-San Bernardino	1.81	2.05	1.37	1.51
6920	Sacramento	1.69	1.99	1.14	1.21
7120	Salinas-Seaside-Monterey	1.72	2.09	1.00	1.15
7320	San Diego	1.92	2.21	1.25	1.39
7360	San Francisco	1.79	2.20	1.15	1.25
7400	San Jose	1.98	2.33	1.24	1.39
7480	Santa Barbara-Santa Maria-Lompoc	1.60	1.80	1.00	1.10
7500	Santa Rosa-Petaluma	2.26	2.43	1.00	1.20
8120	Stockton	1.58	1.87	1.11	1.11
8720	Vallejo-Fairfield-Napa	1.91	2.31	1.11	1.26

CA urban average	1.75	2.08	1.20	1.35

2003		
2004	Row Not Used -->	
2005	Row Not Used -->	

Imputed Service Area Population 2003

NOTE: If imputed service area population differs by more than 5% from the service area population entered above, you should revise your persons per household or dwelling unit estimates.

Enter Group Quarters Population in 2003:	96,568	*(estimate using census data)*
Imputed Single Family Population in 2003:	0	*(persons per household x dwelling units)*
Imputed Multi Family Population in 2003:	0	*(persons per household x dwelling units)*
Imputed Service Area Population in 2003:	96,568	

Service Area Population Entered Above: 94,711

Imputed service area population is within 2.0% of the service area population you entered above.

Toilet Saturation In 2003

NOTE: You can enter toilet saturation levels in 2003 or let the model calculate them. Select which method the calculator should use.

Toilet Saturation Estimation Option (select one): 2. Have calculator estimate saturation

OPTION 1: Complete the following table if you selected Option 1 -- Enter my own saturation estimate.

	Estimated % of Toilets in 2003 by Flush Volume				
	5 gpf	3.5 gpf	1.6 gpf	1.28 gpf	Total
Single Family					0.0%
Multi Family					0.0%

How was saturation estimated?

{Use this field to describe how toilet saturation was estimated}

OPTION 2: Complete the following table if you selected Option 2 -- Have calculator estimate saturation.

		Conservation Program Toilet Replacements			
		Single Family		Multi Family	
Year		ULFT	HET	ULFT	HET
1991					
1992					
1993					
1994					
1995					
1996					
1997					
1998					
1999					
2000					
2001					
2002					
2003					
2004	Row Not Used -->				
2005	Row Not Used -->				

Showerhead Saturation In 2003

NOTE: You can enter showerhead saturation levels in 2003 or let the model calculate them. Select which method the calculator should use.

Showerhead Saturation Estimation Option (select one): 2. Have calculator estimate saturation

OPTION 1: Complete the following table if you selected Option 1 -- Enter my own saturation estimate.

	LF	Non LF	Total
Estimated % of Low Flow Showerheads in Residential Homes in 2003:		100.0%	100.0%

How was saturation estimated?

{Use this field to describe how showerhead saturation was estimated}

OPTION 2: Complete the following table if you selected Option 2 -- Have calculator estimate saturation.

Year	*Number of Residential Showerheads Distributed/Installed*
1991	
1992	
1993	
1994	
1995	
1996	
1997	
1998	

1999		
2000		
2001		
2002		
2003		
2004	Row Not Used -->	
2005	Row Not Used -->	

Clothes Washer Average Water Factor (WF) In 2003

NOTE: You can enter average WF for residential clothes washers in 2003 or let the model calculate it. Select which method the calculator should use.

Clothes Washer WF Estimation Option (select one): 2. Have calculator estimate the average WF

OPTION 1: Complete the following table if you selected Option 1 -- Enter my own WF estimate.

	Single Family	Multi Family
Average clothes washer WF in 2003:		

How was average WF estimated?

{Use this field to describe how average WF was estimated}

OPTION 2: Complete the following table if you selected Option 2 -- Have calculator estimate the average WF.

Number of Clothes Washer Incentives by WF

Year		8.5-9.5 WF	6.0-8.5 WF	< 6.0 WF
1999				
2000				
2001				
2002				
2003				
2004	Row Not Used -->			
2005	Row Not Used -->			

Target Calculation -- Provisional Method 4 Target

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

Urban Supplier	1999-2008 Baseline GPCD	—	Assumed Indoor Residential per Capita Water Use GPCD	—	CII per Capita Water Use GPCD	=	Estimated Landscape Water Use and System Water Loss GPCD
East Valley Water District	215.0		70.0		56.0		89.0

Step 2. Calculation of Savings Using BMP Calculators

(Alternate) STEP 2 BEING USED TO CALCULATE TARGET

Urban Supplier	Indoor Residential Savings Calculators					+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	Total Savings GPCD
	Single Family Toilets	Multi Family Toilets	Resi-dential Washers	Resi-dential Showers	Total IR Savings								
East Valley Water District	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX		XXXX		XXXX		XXXX

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

Urban Supplier	Default Resi-dential Indoor Savings	+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	(alt) Total Savings GPCD
East Valley Water District	15.0		0.0		5.6		19.2		39.8

Step 3. Calculation of Urban Water Use Targets

Urban Supplier	1999-2008 Baseline GPCD	—	Total Savings GPCD	=	**Computed 2020 Target GPCD**	→	**Less Than 95% of 5-Year Baseline**	→	**Final 2020 Target**	→	**Final 2015 Target**
East Valley Water District	215.0		39.8		**175.2**		**TRUE**		**175.2**		**195.1**

BMP 1.3 Metering Savings Calculator

Water Supplier: East Valley Water District

Color Key

User Input
Model Assumption
Model Calculation

Midpoint of Base Period:	2003	
Service Area Pop. In 2003:	94,711	
Unmetered Connections in 2003:	0	
Deliveries to Unmetered Connections 2003 (AF):	0	
Deliveries/Connection (GPD):	0	
Meter Savings (%):	20%	*<<From Exhibit 1 of MOU*
Savings Per Connection (GPD):	0	
Total Savings (MGD):	0.00	
GPCD Savings:	0.00	

BMP 4 CII Savings Calculator

Water Supplier: East Valley Water District

Color Key

User Input
Model Assumption
Model Calculation

Midpoint of Base Period:	2003	
Service Area Pop. In 2003:	94,711	
Baseline CII Use (AF)	5,937	
CII Savings (%):	10%	*<< MOU Exhibit 1*
Total Savings (MGD):	0.53	
GPCD Savings:	5.60	

SB X7-7 Tables – The City of Loma Linda

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

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	6,030	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	2004	
	Year ending baseline period range[4]	2008	

[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:

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1999	19,168
Year 2	2000	19,188
Year 3	2001	19,571
Year 4	2002	19,961
Year 5	2003	20,360
Year 6	2004	20,766
Year 7	2005	21,180
Year 8	2006	21,603
Year 9	2007	22,034
Year 10	2008	22,473
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2004	20,766
Year 2	2005	21,180
Year 3	2006	21,603
Year 4	2007	22,034
Year 5	2008	22,473
2015 Compliance Year Population		
2015		23,298
NOTES: DWR Population Tool		

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

Baseline Year *Fm SB X7-7 Table 3*		Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	Deductions					Annual 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.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1999	4,772			-		-	4,772
Year 2	2000	5,479			-		-	5,479
Year 3	2001	5,392			-		-	5,392
Year 4	2002	5,563			-		-	5,563
Year 5	2003	5,322			-		-	5,322
Year 6	2004	5,675			-		-	5,675
Year 7	2005	5,598			-		-	5,598
Year 8	2006	5,847			-		-	5,847
Year 9	2007	6,391			-		-	6,391
Year 10	2008	6,030			-		-	6,030
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**5,607**
5 Year Baseline - Gross Water Use								
Year 1	2004	5,675			-		-	5,675
Year 2	2005	5,598			-		-	5,598
Year 3	2006	5,847			-		-	5,847
Year 4	2007	6,391			-		-	6,391
Year 5	2008	6,030			-		-	6,030
5 year baseline average gross water use								**5,908**
2015 Compliance Year - Gross Water Use								
2015		4,682	-		-		-	**4,682**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

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

Complete one table for each source.

Name of Source	SBBA
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1999	3,953		3,953
Year 2	2000	4,879		4,879
Year 3	2001	4,707		4,707
Year 4	2002	5,411		5,411
Year 5	2003	5,322		5,322
Year 6	2004	5,674		5,674
Year 7	2005	5,598		5,598
Year 8	2006	4,747		4,747
Year 9	2007	4,812		4,812
Year 10	2008	4,823		4,823
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2004	5,674		5,674
Year 2	2005	5,598		5,598
Year 3	2006	4,747		4,747
Year 4	2007	4,812		4,812
Year 5	2008	4,823		4,823
2015 Compliance Year - Water into Distribution System				
2015		4,680		4,680

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

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	State Water Project
This water source is:	
☐	The supplier's own water source
☑	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999	818.7		819
Year 2	2,000	599.3		599
Year 3	2,001	685		685

Year 4	2,002	151.9		152
Year 5	2,003	0.25		0
Year 6	2,004	0.98		1
Year 7	2,005	0		0
Year 8	2,006	1099.84		1,100
Year 9	2,007	1579.5		1,580
Year 10	2,008	1207.12		1,207
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004	0.98		1
Year 2	2,005	0		0
Year 3	2,006	1099.84		1,100
Year 4	2,007	1579.5		1,580
Year 5	2,008	1207.12		1,207
2015 Compliance Year - Water into Distribution System				
2015		1		1
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution	
Name of Source	Source 3
This water source is:	
☐	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0

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	19,168	4,772	222
Year 2	2000	19,188	5,479	255
Year 3	2001	19,571	5,392	246
Year 4	2002	19,961	5,563	249
Year 5	2003	20,360	5,322	233
Year 6	2004	20,766	5,675	244
Year 7	2005	21,180	5,598	236
Year 8	2006	21,603	5,847	242
Year 9	2007	22,034	6,391	259
Year 10	2008	22,473	6,030	240
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**243**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2004	20,766	5,675	244
Year 2	2005	21,180	5,598	236
Year 3	2006	21,603	5,847	242
Year 4	2007	22,034	6,391	259
Year 5	2008	22,473	6,030	240
5 Year Average Baseline GPCD				**244**
2015 Compliance Year GPCD				
2015		23,298	4,682	**179**
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	243
5 Year Baseline GPCD	244
2015 Compliance Year GPCD	179
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☑	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
243	**194**
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
244	232	194	**194**

[1] Maximum 2020 Target is 95% of the 5 Year Baseline GPCD *[2] 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.*

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
194	243	**218**
NOTES:		

SB X7-7 Table 9: 2015 Compliance								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)*			TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
		Enter "0" if Adjustment Not Used						
		Extraordinary Events	Weather Normalization	Economic Adjustment				
179	218	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	-	179	179	**YES**
NOTES:								

SB X7-7 Tables – The City of Redlands

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

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	32,208	Acre Feet
	2008 total volume of delivered recycled water	2,568	Acre Feet
	2008 recycled water as a percent of total deliveries	7.97%	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:

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1999	70,059
Year 2	2000	70,678
Year 3	2001	71,254
Year 4	2002	71,921
Year 5	2003	72,585
Year 6	2004	76,405
Year 7	2005	81,802
Year 8	2006	80,391
Year 9	2007	79,653
Year 10	2008	84,577
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	72,585
Year 2	2004	76,405
Year 3	2005	81,802
Year 4	2006	80,391
Year 5	2007	79,653
2015 Compliance Year Population		
2015		85,276
NOTES:		

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year *Fm SB X7-7 Table 3*		**Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**Deductions**					**Annual 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.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1999	26,710	-	-	-	-	-	26,710
Year 2	2000	28,592	-	-	-	-	-	28,592
Year 3	2001	27,570	-	-	-	-	-	27,570
Year 4	2002	30,053	-	-	-	-	-	30,053
Year 5	2003	30,602	-	-	-	-	-	30,602
Year 6	2004	29,390	-	-	-	-	-	29,390
Year 7	2005	27,311	-	-	-	-	-	27,311
Year 8	2006	33,271	-	-	-	-	-	33,271
Year 9	2007	34,704	-	-	-	-	-	34,704
Year 10	2008	34,437	-	-	-	-	-	34,437
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**30,264**
5 Year Baseline - Gross Water Use								
Year 1	2003	30,602			-		-	30,602
Year 2	2004	29,390			-		-	29,390
Year 3	2005	27,311			-		-	27,311
Year 4	2006	33,271			-		-	33,271
Year 5	2007	34,704			-		-	34,704
5 year baseline average gross water use								**31,056**
2015 Compliance Year - Gross Water Use								
2015		22,320	-		-		-	**22,320**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

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

Complete one table for each source.

Name of Source	Source 1
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1999	26,710.1	-	26,710
Year 2	2000	28,591.5	-	28,592
Year 3	2001	18,338.7	-	18,339
Year 4	2002	28,697.5	-	28,698
Year 5	2003	25,617.5	-	25,618
Year 6	2004	28,538.7	-	28,539
Year 7	2005	27,096.0	-	27,096
Year 8	2006	30,822.6	-	30,823
Year 9	2007	34,313.9	-	34,314
Year 10	2008	33,255.5	-	33,256
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2003	25,617.5	-	25,618
Year 2	2004	28,538.7	-	28,539
Year 3	2005	27,096.0	-	27,096
Year 4	2006	30,822.6	-	30,823
Year 5	2007	34,313.9	-	34,314
2015 Compliance Year - Water into Distribution System				
2015		22,319.5	-	22,320

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

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Source 2
This water source is:	
☐	The supplier's own water source
☑	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999	0	0	0
Year 2	2,000	0	0	0
Year 3	2,001	9231.65578	0	9,232

Year 4	2,002	1355.712	0	1,356
Year 5	2,003	4984.41169	0	4,984
Year 6	2,004	850.86	0	851
Year 7	2,005	215.2	0	215
Year 8	2,006	2448.68	0	2,449
Year 9	2,007	390.1	0	390
Year 10	2,008	1181.2	0	1,181
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	4984.41169	0	4,984
Year 2	2,004	850.86	0	851
Year 3	2,005	215.2	0	215
Year 4	2,006	2448.68	0	2,449
Year 5	2,007	390.1	0	390
2015 Compliance Year - Water into Distribution System				
2015		0	0	0

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

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Source 3			
This water source is:				
☐	The supplier's own water source			
☐	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003			0
Year 2	2,004			0
Year 3	2,005			0
Year 4	2,006			0

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	70,059	26,710	340
Year 2	2000	70,678	28,592	361
Year 3	2001	71,254	27,570	345
Year 4	2002	71,921	30,053	373
Year 5	2003	72,585	30,602	376
Year 6	2004	76,405	29,390	343
Year 7	2005	81,802	27,311	298
Year 8	2006	80,391	33,271	369
Year 9	2007	79,653	34,704	389
Year 10	2008	84,577	34,437	363
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**356**
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	72,585	30,602	376
Year 2	2004	76,405	29,390	343
Year 3	2005	81,802	27,311	298
Year 4	2006	80,391	33,271	369
Year 5	2007	79,653	34,704	389
5 Year Average Baseline GPCD				**355**
2015 Compliance Year GPCD				
2015		85,276	22,320	**234**

NOTES:

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	356
5 Year Baseline GPCD	355
2015 Compliance Year GPCD	234
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☑	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
356	**285**
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
355	337	285	**285**

[1] Maximum 2020 Target is 95% of the 5 Year Baseline GPCD *[2] 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.*

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
285	356	**320**
NOTES:		

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)* Enter "0" if Adjustment Not Used: Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
234	320	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	-	234	234	**YES**

NOTES:

SB X7-7 Tables – San Bernardino Municipal Water Department

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

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	49,911	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.

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1999	163,861
Year 2	2000	165,347
Year 3	2001	168,530
Year 4	2002	166,740
Year 5	2003	169,979
Year 6	2004	174,567
Year 7	2005	177,628
Year 8	2006	184,302
Year 9	2007	183,957
Year 10	2008	183,942
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	169,979
Year 2	2004	174,567
Year 3	2005	177,628
Year 4	2006	184,302
Year 5	2007	183,957
2015 Compliance Year Population		
2015		199,657
NOTES: DWR Population Tool		

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year *Fm SB X7-7 Table 3*		**Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**Deductions**					**Annual 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.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1999	48,939	-		-		-	48,939
Year 2	2000	48,223	1,730		-		-	46,493
Year 3	2001	46,456	1,837		-		-	44,619
Year 4	2002	48,504	1,252		-		-	47,252
Year 5	2003	48,522	622		-		-	47,900
Year 6	2004	50,223	159		-		-	50,064
Year 7	2005	48,138	159		-		-	47,979
Year 8	2006	57,392	1,199		-		-	56,193
Year 9	2007	59,594	7,674		-		-	51,920
Year 10	2008	57,237	7,326		-		-	49,911
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**49,127**
5 Year Baseline - Gross Water Use								
Year 1	2003	48,522	622		-		-	47,900
Year 2	2004	50,223	159		-		-	50,064
Year 3	2005	48,138	159		-		-	47,979
Year 4	2006	57,392	1,199		-		-	56,193
Year 5	2007	59,594	7,674		-		-	51,920
5 year baseline average gross water use								**50,811**
2015 Compliance Year - Gross Water Use								
2015		36,035	370		-		-	**35,665**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES: Public Water System Statistics 2000-2010

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

Complete one table for each source.

Name of Source	Bunker Hill / SBBA
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1999	48939		48,939
Year 2	2000	48222.7		48,223
Year 3	2001	46456		46,456
Year 4	2002	48504.4		48,504
Year 5	2003	48521.56		48,522
Year 6	2004	50222.94		50,223
Year 7	2005	48138.18		48,138
Year 8	2006	57391.58		57,392
Year 9	2007	59594.2		59,594
Year 10	2008	57237.38		57,237
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2003	48521.56		48,522
Year 2	2004	50222.94		50,223
Year 3	2005	48138.18		48,138
Year 4	2006	57391.58		57,392
Year 5	2007	59594.2		59,594
2015 Compliance Year - Water into Distribution System				
2015		36,035		36,035

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

NOTES: Public Water System Statistics 2000-2010

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Source 2
This water source is:	
☐	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0

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	163,861	48,939	267
Year 2	2000	165,347	46,493	251
Year 3	2001	168,530	44,619	236
Year 4	2002	166,740	47,252	253
Year 5	2003	169,979	47,900	252
Year 6	2004	174,567	50,064	256
Year 7	2005	177,628	47,979	241
Year 8	2006	184,302	56,193	272
Year 9	2007	183,957	51,920	252
Year 10	2008	183,942	49,911	242
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**252**
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	169,979	47,900	252
Year 2	2004	174,567	50,064	256
Year 3	2005	177,628	47,979	241
Year 4	2006	184,302	56,193	272
Year 5	2007	183,957	51,920	252
5 Year Average Baseline GPCD				**255**
2015 Compliance Year GPCD				
2015		199,657	35,665	**159**
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	252
5 Year Baseline GPCD	255
2015 Compliance Year GPCD	159
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☐	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☑	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
255	242	203	**203**

[1] *Maximum 2020 Target is 95% of the 5 Year Baseline GPCD* [2] *2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.*

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
203	252	**228**
NOTES:		

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)* Enter "0" if Adjustment Not Used: Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
159	228	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	-	159	159	**YES**

NOTES:

User Input -- Provisional Method 4 Target

Target Calculation Option (select one): * Calculate Targets Using Default Indoor Residential Savings

* = Required Data

Water Supplier Name: * San Bernardino Municipal Water Department

10-15 Year Baseline Water Use Information

Baseline Period: * 1999-2008

Midpoint of Baseline Period: 2003

Baseline Water Use GPCD: * 252.2

Population in Midpoint Year: * 169,979

5 Year Baseline Water Use Information

Baseline Period: * 2003-2007

Baseline Water Use GPCD: * 254.5

95% of 5-Year Baseline GPCD: 241.8

Unmetered Connections

Number of Unmetered Connections in 2003: * 0

Water Use By Unmetered Connections In 2003: * 0 Acre-Feet

Baseline CII Water Use[1]

CII Water Use in 2003: * 8,156 Acre-Feet

Per Capita Use: 42.8 GPCD

[1]CII = Commercial, Industrial, Institutional.

If you have chosen to calculate targets using the Default Indoor Residential Savings, you do not need to complete the remaining tables.
Go to the "Calculated Targets" worksheet.

Optional Data Needed to Calculate Targets Using the Indoor Residential Savings Calculators

NOTE: You only need to complete the tables below if you have chosen to calculate targets using the indoor residential savings calculators.
The data you enter here is used to calculate the 2020 water saving values for residential toilets, washers, and showerheads.
If you are using the Default Indoor Residential Savings you do not need to enter this data.

Persons and Plumbing Fixtures Per Household

Units Per Household:	Single Family	Multi Family
Persons		
Toilets		
Showers		

Residential Housing Units

Year	Single Family	Multi Family
1991		
1992		
1993		
1994		
1995		
1996		
1997		
1998		
1999		
2000		

The table below shows average shower and toilet counts per household for major metropolitan areas. The table is based on 2003 data published by the American Housing Survey.

		Single Family		Multi Family	
SMSA Code	SMSA name	Showers	Toilets	Showers	Toilets
360	Anaheim-Santa Ana	1.92	2.33	1.25	1.44
680	Bakersfield	1.64	1.96	1.38	1.48
2840	Fresno	1.62	1.91	1.19	1.29
4480	Los Angeles-Long Beach	1.58	1.93	1.19	1.34
5170	Modesto	1.79	1.99	1.23	1.58
5775	Oakland	1.77	2.07	1.17	1.36
6000	Oxnard-Ventura	1.87	2.22	1.16	1.37
6780	Riverside-San Bernardino	1.81	2.05	1.37	1.51
6920	Sacramento	1.69	1.99	1.14	1.21
7120	Salinas-Seaside-Monterey	1.72	2.09	1.00	1.15
7320	San Diego	1.92	2.21	1.25	1.39
7360	San Francisco	1.79	2.20	1.15	1.25
7400	San Jose	1.98	2.33	1.24	1.39
7480	Santa Barbara-Santa Maria-Lompoc	1.60	1.80	1.00	1.10
7500	Santa Rosa-Petaluma	2.26	2.43	1.00	1.20
8120	Stockton	1.58	1.87	1.11	1.11

2001			
2002			
2003			
2004	Row Not Used -->		
2005	Row Not Used -->		

8720	Vallejo-Fairfield-Napa	1.91	2.31	1.11	1.26
	CA urban average	1.75	2.08	1.20	1.35

Imputed Service Area Population 2003

NOTE: If imputed service area population differs by more than 5% from the service area population entered above, you should revise your persons per household or dwelling unit estimates.

Enter Group Quarters Population in 2003:	173,197	*(estimate using census data)*
Imputed Single Family Population in 2003:	0	*(persons per household x dwelling units)*
Imputed Multi Family Population in 2003:	0	*(persons per household x dwelling units)*
Imputed Service Area Population in 2003:	173,197	

Service Area Population Entered Above: 169,979

Imputed service area population is within 1.9% of the service area population you entered above.

Toilet Saturation In 2003

NOTE: You can enter toilet saturation levels in 2003 or let the model calculate them. Select which method the calculator should use.

Toilet Saturation Estimation Option (select one): 2. Have calculator estimate saturation

OPTION 1: Complete the following table if you selected Option 1 -- Enter my own saturation estimate.

	Estimated % of Toilets in 2003 by Flush Volume				
	5 gpf	3.5 gpf	1.6 gpf	1.28 gpf	Total
Single Family					0.0%
Multi Family					0.0%

How was saturation estimated?

{Use this field to describe how toilet saturation was estimated}

OPTION 2: Complete the following table if you selected Option 2 -- Have calculator estimate saturation.

	Conservation Program Toilet Replacements			
	Single Family		Multi Family	
Year	ULFT	HET	ULFT	HET
1991				
1992				
1993				
1994				
1995				
1996				
1997				
1998				
1999				
2000				
2001				
2002				
2003				
2004	Row Not Used -->			
2005	Row Not Used -->			

Showerhead Saturation In 2003

NOTE: You can enter showerhead saturation levels in 2003 or let the model calculate them. Select which method the calculator should use.

Showerhead Saturation Estimation Option (select one): 2. Have calculator estimate saturation

OPTION 1: Complete the following table if you selected Option 1 -- Enter my own saturation estimate.

	LF	Non LF	Total
Estimated % of Low Flow Showerheads in Residential Homes in 2003:		100.0%	100.0%

How was saturation estimated?

{Use this field to describe how showerhead saturation was estimated}

OPTION 2: Complete the following table if you selected Option 2 -- Have calculator estimate saturation.

Year	*Number of Residential Showerheads Distributed/Installed*
1991	
1992	
1993	
1994	

1995		
1996		
1997		
1998		
1999		
2000		
2001		
2002		
2003		
2004	Row Not Used -->	
2005	Row Not Used -->	

Clothes Washer Average Water Factor (WF) In 2003

NOTE: You can enter average WF for residential clothes washers in 2003 or let the model calculate it. Select which method the calculator should use.

Clothes Washer WF Estimation Option (select one): 2. Have calculator estimate the average WF

OPTION 1: Complete the following table if you selected Option 1 -- Enter my own WF estimate.

	Single Family	Multi Family
Average clothes washer WF in 2003:		

How was average WF estimated?

{Use this field to describe how average WF was estimated}

OPTION 2: Complete the following table if you selected Option 2 -- Have calculator estimate the average WF.

Number of Clothes Washer Incentives by WF

Year		8.5-9.5 WF	6.0-8.5 WF	< 6.0 WF
1999				
2000				
2001				
2002				
2003				
2004	Row Not Used -->			
2005	Row Not Used -->			

Target Calculation -- Provisional Method 4 Target

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

Urban Supplier	1999-2008 Baseline GPCD	—	Assumed Indoor Residential per Capita Water Use GPCD	—	CII per Capita Water Use GPCD	=	Estimated Landscape Water Use and System Water Loss GPCD
San Bernardino Municipal Water	252.2		70.0		42.8		139.4

Step 2. Calculation of Savings Using BMP Calculators

(Alternate) STEP 2 BEING USED TO CALCULATE TARGET

Urban Supplier	Indoor Residential Savings Calculators					+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	Total Savings GPCD
	Single Family Toilets	Multi Family Toilets	Resi-dential Washers	Resi-dential Showers	Total IR Savings								
San Bernardino Municipal Water	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX		XXXX		XXXX		XXXX

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

Urban Supplier	Default Resi-dential Indoor Savings	+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	(alt) Total Savings GPCD
San Bernardino Municipal Water	15.0		0.0		4.3		30.1		49.4

Step 3. Calculation of Urban Water Use Targets

Urban Supplier	1999-2008 Baseline GPCD	—	Total Savings GPCD	=	**Computed 2020 Target GPCD**	⇒	**Less Than 95% of 5-Year Baseline**	⇒	**Final 2020 Target**	⇒	**Final 2015 Target**
San Bernardino Municipal Water	252.2		49.4		**202.8**		**TRUE**		**202.8**		**227.5**

BMP 1.3 Metering Savings Calculator

Water Supplier: San Bernardino Municipal Water Department

Color Key

User Input
Model Assumption
Model Calculation

Midpoint of Base Period:	2003	
Service Area Pop. In 2003:	169,979	
Unmetered Connections in 2003:	0	
Deliveries to Unmetered Connections 2003 (AF):	0	
Deliveries/Connection (GPD):	0	
Meter Savings (%):	20%	*<<From Exhibit 1 of MOU*
Savings Per Connection (GPD):	0	
Total Savings (MGD):	0.00	
GPCD Savings:	0.00	

BMP 4 CII Savings Calculator

Water Supplier: San Bernardino Municipal Water Department

Color Key

User Input
Model Assumption
Model Calculation

Midpoint of Base Period:	2003	
Service Area Pop. In 2003:	169,979	
Baseline CII Use (AF)	8,156	
CII Savings (%):	10%	*<< MOU Exhibit 1*
Total Savings (MGD):	0.73	
GPCD Savings:	4.28	

SB X7-7 Tables – West Valley Water District

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

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	22,777	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	2000	
	Year ending baseline period range[3]	2009	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range[4]	2008	

[1] If the 2008 recycled water 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: 2010 UWMP

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	2000	59,957
Year 2	2001	61,201
Year 3	2002	62,471
Year 4	2003	63,768
Year 5	2004	65,091
Year 6	2005	66,442
Year 7	2006	67,821
Year 8	2007	69,228
Year 9	2008	70,665
Year 10	2009	72,131
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2004	65,091
Year 2	2005	66,442
Year 3	2006	67,821
Year 4	2007	69,228
Year 5	2008	70,665
2015 Compliance Year Population		
2015		80,161
NOTES: DWR Population Tool		

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

Baseline Year *Fm SB X7-7 Table 3*		Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	Deductions					Annual 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.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	2000	20,268			-		-	20,268
Year 2	2001	19,682			-		-	19,682
Year 3	2002	20,655			-		-	20,655
Year 4	2003	21,318			-		-	21,318
Year 5	2004	21,313			-		-	21,313
Year 6	2005	19,747			-		-	19,747
Year 7	2006	21,753			-		-	21,753
Year 8	2007	22,223			-		-	22,223
Year 9	2008	22,777			-		-	22,777
Year 10	2009	20,418			-		-	20,418
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**21,015**
5 Year Baseline - Gross Water Use								
Year 1	2004	21,313			-		-	21,313
Year 2	2005	19,747			-		-	19,747
Year 3	2006	21,753			-		-	21,753
Year 4	2007	22,223			-		-	22,223
Year 5	2008	22,777			-		-	22,777
5 year baseline average gross water use								**21,563**
2015 Compliance Year - Gross Water Use								
2015		17,131	92		-		-	**17,039**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

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

Complete one table for each source.

Name of Source	Rialto-Colton, Riverside North, Bunker Hill, Lytle C
This water source is:	
☑	The supplier's own water source
☑	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	2000	20,268		20,268
Year 2	2001	19,682		19,682
Year 3	2002	20,655		20,655
Year 4	2003	21,318		21,318
Year 5	2004	21,313		21,313
Year 6	2005	19,747		19,747
Year 7	2006	21,753		21,753
Year 8	2007	22,223		22,223
Year 9	2008	22,777		22,777
Year 10	2009	20,418		20,418
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2004	21,313		21,313
Year 2	2005	19,747		19,747
Year 3	2006	21,753		21,753
Year 4	2007	22,223		22,223
Year 5	2008	22,777		22,777
2015 Compliance Year - Water into Distribution System				
2015		17,131		17,131

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

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Source 2
This water source is:	
☐	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	2,000			0
Year 2	2,001			0
Year 3	2,002			0

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	2000	59,957	20,268	302
Year 2	2001	61,201	19,682	287
Year 3	2002	62,471	20,655	295
Year 4	2003	63,768	21,318	298
Year 5	2004	65,091	21,313	292
Year 6	2005	66,442	19,747	265
Year 7	2006	67,821	21,753	286
Year 8	2007	69,228	22,223	287
Year 9	2008	70,665	22,777	288
Year 10	2009	72,131	20,418	253
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**285**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2004	65,091	21,313	292
Year 2	2005	66,442	19,747	265
Year 3	2006	67,821	21,753	286
Year 4	2007	69,228	22,223	287
Year 5	2008	70,665	22,777	288
5 Year Average Baseline GPCD				**284**
2015 Compliance Year GPCD				
2015		80,161	17,039	**190**

NOTES:

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	285
5 Year Baseline GPCD	284
2015 Compliance Year GPCD	190
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☐	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☑	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
284	269	232	**232**

[1] Maximum 2020 Target is 95% of the 5 Year Baseline GPCD *[2] 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.*

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
232	285	**259**
NOTES:		

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)* Enter "0" if Adjustment Not Used: Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
190	259	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	-	190	190	**YES**

NOTES:

User Input -- Provisional Method 4 Target

Target Calculation Option (select one): * Calculate Targets Using Default Indoor Residential Savings

* = Required Data

Water Supplier Name: * West Valley Water District

10-15 Year Baseline Water Use Information

Baseline Period: * 2000-2009

Midpoint of Baseline Period: 2004

Baseline Water Use GPCD: * 285.3

Population in Midpoint Year: * 65,091

5 Year Baseline Water Use Information

Baseline Period: * 2004-2008

Baseline Water Use GPCD: * 283.6

95% of 5-Year Baseline GPCD: 269.4

Unmetered Connections

Number of Unmetered Connections in 2004: * 0

Water Use By Unmetered Connections In 2004: * 0 Acre-Feet

Baseline CII Water Use[1]

CII Water Use in 2004: * 5,156 Acre-Feet

Per Capita Use: 70.7 GPCD

[1]CII = Commercial, Industrial, Institutional.

If you have chosen to calculate targets using the Default Indoor Residential Savings, you do not need to complete the remaining tables.
Go to the "Calculated Targets" worksheet.

Optional Data Needed to Calculate Targets Using the Indoor Residential Savings Calculators

NOTE: You only need to complete the tables below if you have chosen to calculate targets using the indoor residential savings calculators.
The data you enter here is used to calculate the 2020 water saving values for residential toilets, washers, and showerheads.
If you are using the Default Indoor Residential Savings you do not need to enter this data.

Persons and Plumbing Fixtures Per Household

Units Per Household:	Single Family	Multi Family
Persons		
Toilets		
Showers		

Residential Housing Units

Year	Single Family	Multi Family
1991		
1992		
1993		
1994		
1995		
1996		
1997		
1998		
1999		
2000		

The table below shows average shower and toilet counts per household for major metropolitan areas. The table is based on 2003 data published by the American Housing Survey.

		Single Family		Multi Family	
SMSA Code	SMSA name	Showers	Toilets	Showers	Toilets
360	Anaheim-Santa Ana	1.92	2.33	1.25	1.44
680	Bakersfield	1.64	1.96	1.38	1.48
2840	Fresno	1.62	1.91	1.19	1.29
4480	Los Angeles-Long Beach	1.58	1.93	1.19	1.34
5170	Modesto	1.79	1.99	1.23	1.58
5775	Oakland	1.77	2.07	1.17	1.36
6000	Oxnard-Ventura	1.87	2.22	1.16	1.37
6780	Riverside-San Bernardino	1.81	2.05	1.37	1.51
6920	Sacramento	1.69	1.99	1.14	1.21
7120	Salinas-Seaside-Monterey	1.72	2.09	1.00	1.15
7320	San Diego	1.92	2.21	1.25	1.39
7360	San Francisco	1.79	2.20	1.15	1.25
7400	San Jose	1.98	2.33	1.24	1.39
7480	Santa Barbara-Santa Maria-Lompoc	1.60	1.80	1.00	1.10
7500	Santa Rosa-Petaluma	2.26	2.43	1.00	1.20
8120	Stockton	1.58	1.87	1.11	1.11

2001		
2002		
2003		
2004		
2005 Row Not Used -->		

8720	Vallejo-Fairfield-Napa	1.91	2.31	1.11	1.26
	CA urban average	1.75	2.08	1.20	1.35

Imputed Service Area Population 2004

NOTE: If imputed service area population differs by more than 5% from the service area population entered above, you should revise your persons per household or dwelling unit estimates.

Enter Group Quarters Population in 2004:	65,684	*(estimate using census data)*
Imputed Single Family Population in 2004:	0	*(persons per household x dwelling units)*
Imputed Multi Family Population in 2004:	0	*(persons per household x dwelling units)*
Imputed Service Area Population in 2004:	65,684	

Service Area Population Entered Above: 65,091

Imputed service area population is within 0.9% of the service area population you entered above.

Toilet Saturation In 2004

NOTE: You can enter toilet saturation levels in 2004 or let the model calculate them. Select which method the calculator should use.

Toilet Saturation Estimation Option (select one): 2. Have calculator estimate saturation

OPTION 1: Complete the following table if you selected Option 1 -- Enter my own saturation estimate.

	Estimated % of Toilets in 2004 by Flush Volume				
	5 gpf	3.5 gpf	1.6 gpf	1.28 gpf	Total
Single Family					0.0%
Multi Family					0.0%

How was saturation estimated?

{Use this field to describe how toilet saturation was estimated}

OPTION 2: Complete the following table if you selected Option 2 -- Have calculator estimate saturation.

	Conservation Program Toilet Replacements				
	Single Family			Multi Family	
Year	ULFT	HET		ULFT	HET
1991					
1992					
1993					
1994					
1995					
1996					
1997					
1998					
1999					
2000					
2001					
2002					
2003					
2004					
2005 Row Not Used -->					

Showerhead Saturation In 2004

NOTE: You can enter showerhead saturation levels in 2004 or let the model calculate them. Select which method the calculator should use.

Showerhead Saturation Estimation Option (select one): 2. Have calculator estimate saturation

OPTION 1: Complete the following table if you selected Option 1 -- Enter my own saturation estimate.

	LF	Non LF	Total
Estimated % of Low Flow Showerheads in Residential Homes in 2004:		100.0%	100.0%

How was saturation estimated?

{Use this field to describe how showerhead saturation was estimated}

OPTION 2: Complete the following table if you selected Option 2 -- Have calculator estimate saturation.

Year	*Number of Residential Showerheads Distributed/Installed*
1991	
1992	
1993	
1994	

1995		
1996		
1997		
1998		
1999		
2000		
2001		
2002		
2003		
2004		
2005	Row Not Used -->	

Clothes Washer Average Water Factor (WF) In 2004

NOTE: You can enter average WF for residential clothes washers in 2004 or let the model calculate it. Select which method the calculator should use.

Clothes Washer WF Estimation Option (select one): 2. Have calculator estimate the average WF

OPTION 1: Complete the following table if you selected Option 1 -- Enter my own WF estimate.

	Single Family	Multi Family
Average clothes washer WF in 2004:		

How was average WF estimated?

{Use this field to describe how average WF was estimated}

OPTION 2: Complete the following table if you selected Option 2 -- Have calculator estimate the average WF.

Number of Clothes Washer Incentives by WF

Year		8.5-9.5 WF	6.0-8.5 WF	< 6.0 WF
1999				
2000				
2001				
2002				
2003				
2004				
2005	Row Not Used -->			

Target Calculation -- Provisional Method 4 Target

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

Urban Supplier	2000-2009 Baseline GPCD	—	Assumed Indoor Residential per Capita Water Use GPCD	—	CII per Capita Water Use GPCD	=	Estimated Landscape Water Use and System Water Loss GPCD
West Valley Water District	285.3		70.0		70.7		144.6

Step 2. Calculation of Savings Using BMP Calculators

(Alternate) STEP 2 BEING USED TO CALCULATE TARGET

Urban Supplier	Indoor Residential Savings Calculators					+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	Total Savings GPCD
	Single Family Toilets	Multi Family Toilets	Resi-dential Washers	Resi-dential Showers	Total IR Savings								
West Valley Water District	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX		XXXX		XXXX		XXXX

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

Urban Supplier	Default Resi-dential Indoor Savings	+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	(alt) Total Savings GPCD
West Valley Water District	15.0		0.0		7.1		31.2		53.3

Step 3. Calculation of Urban Water Use Targets

Urban Supplier	2000-2009 Baseline GPCD	—	Total Savings GPCD	=	**Computed 2020 Target GPCD**	⇒	**Less Than 95% of 5-Year Baseline**	⇒	**Final 2020 Target**	⇒	**Final 2015 Target**
West Valley Water District	285.3		53.3		**232.0**		**TRUE**		**232.0**		**258.6**

BMP 1.3 Metering Savings Calculator

Water Supplier: West Valley Water District

Color Key

User Input
Model Assumption
Model Calculation

Midpoint of Base Period:	2004	
Service Area Pop. In 2004:	65,091	
Unmetered Connections in 2004:	0	
Deliveries to Unmetered Connections 2004 (AF):	0	
Deliveries/Connection (GPD):	0	
Meter Savings (%):	20%	*<<From Exhibit 1 of MOU*
Savings Per Connection (GPD):	0	
Total Savings (MGD):	0.00	
GPCD Savings:	0.00	

BMP 4 CII Savings Calculator

Water Supplier: West Valley Water District

Color Key

User Input
Model Assumption
Model Calculation

Midpoint of Base Period:	2004	
Service Area Pop. In 2004:	65,091	
Baseline CII Use (AF)	5,156	
CII Savings (%):	10%	*<< MOU Exhibit 1*
Total Savings (MGD):	0.46	
GPCD Savings:	7.07	

SB X7-7 Tables – Yucaipa Valley Water District

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

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	14,064	Acre Feet
	2008 total volume of delivered recycled water	1,197	Acre Feet
	2008 recycled water as a percent of total deliveries	8.51%	Percent
	Number of years in baseline period [1, 2]	10	Years
	Year beginning baseline period range	2000	
	Year ending baseline period range [3]	2009	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2005	
	Year ending baseline period range [4]	2009	

[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:

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☑	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☐	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	2000	34,862
Year 2	2001	35,548
Year 3	2002	36,245
Year 4	2003	36,974
Year 5	2004	37,637
Year 6	2005	38,447
Year 7	2006	39,356
Year 8	2007	40,044
Year 9	2008	40,881
Year 10	2009	41,471
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2005	38,447
Year 2	2006	39,356
Year 3	2007	40,044
Year 4	2008	40,881
Year 5	2009	41,471
2015 Compliance Year Population		
2015		44,745
NOTES:		

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

Baseline Year *Fm SB X7-7 Table 3*		Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	Deductions					Annual 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.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	2000	10,310	-		-	-	-	10,310
Year 2	2001	10,415	-		-	-	-	10,415
Year 3	2002	11,746	-		-	-	-	11,746
Year 4	2003	10,981	-		-	-	-	10,981
Year 5	2004	12,843	-		-	-	-	12,843
Year 6	2005	11,404	-		-	-	-	11,404
Year 7	2006	12,467	-		-	-	-	12,467
Year 8	2007	13,187	-		-	-	-	13,187
Year 9	2008	12,930	533		-	-	-	12,397
Year 10	2009	12,871	830		-	-	-	12,041
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**11,779**
5 Year Baseline - Gross Water Use								
Year 1	2005	11,404	-		-	-	-	11,404
Year 2	2006	12,467	-		-	-	-	12,467
Year 3	2007	13,187	-		-	-	-	13,187
Year 4	2008	12,930	533		-	-	-	12,397
Year 5	2009	12,871	830		-	-	-	12,041
5 year baseline average gross water use								**12,299**
2015 Compliance Year - Gross Water Use								
2015		9,725	-		-	-	-	**9,725**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

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

Name of Source	Groundwater & Local Surface Supplies
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	2000	10,310		10,310
Year 2	2001	10,415		10,415
Year 3	2002	11,746		11,746
Year 4	2003	10,981		10,981
Year 5	2004	12,843		12,843
Year 6	2005	10,976		10,976
Year 7	2006	11,350		11,350
Year 8	2007	10,621		10,621
Year 9	2008	7,215		7,215
Year 10	2009	6,700		6,700
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2005	10,976		10,976
Year 2	2006	11,350		11,350
Year 3	2007	10,621		10,621
Year 4	2008	7,215		7,215
Year 5	2009	6,700		6,700
2015 Compliance Year - Water into Distribution System				
2015		5,138		5,138

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

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Imported Water - SBVMWD & SGPWA
This water source is:	
☐	The supplier's own water source
☑	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	2,000			0
Year 2	2,001			0
Year 3	2,002			0
Year 4	2,003			0
Year 5	2,004			0
Year 6	2,005	428		428
Year 7	2,006	1,116		1,116
Year 8	2,007	2,566		2,566
Year 9	2,008	5,715		5,715
Year 10	2,009	6,171		6,171

Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,005	428		428
Year 2	2,006	1,116		1,116
Year 3	2,007	2,566		2,566
Year 4	2,008	5,715		5,715
Year 5	2,009	6,171		6,171
2015 Compliance Year - Water into Distribution System				
2015		4,587		4,587
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

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	2000	34,862	10,310	264
Year 2	2001	35,548	10,415	262
Year 3	2002	36,245	11,746	289
Year 4	2003	36,974	10,981	265
Year 5	2004	37,637	12,843	305
Year 6	2005	38,447	11,404	265
Year 7	2006	39,356	12,467	283
Year 8	2007	40,044	13,187	294
Year 9	2008	40,881	12,397	271
Year 10	2009	41,471	12,041	259
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**276**
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	2005	38,447	11,404	265
Year 2	2006	39,356	12,467	283
Year 3	2007	40,044	13,187	294
Year 4	2008	40,881	12,397	271
Year 5	2009	41,471	12,041	259
5 Year Average Baseline GPCD				**274**
2015 Compliance Year GPCD				
2015		44,745	9,725	**194**
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	276
5 Year Baseline GPCD	274
2015 Compliance Year GPCD	194
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☑	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
276	**220**
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
274	261	220	**220**

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

[2] 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
220	276	**248**
NOTES:		

SB X7-7 Table 9: 2015 Compliance								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)* Enter "0" if Adjustment Not Used: Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
194	248	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	-	194	194	**YES**
NOTES:								

SB X7-7 Tables – The City of Colton

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

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	11,932	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.

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1999	39,897
Year 2	2000	40,629
Year 3	2001	41,020
Year 4	2002	41,414
Year 5	2003	41,813
Year 6	2004	42,215
Year 7	2005	42,621
Year 8	2006	43,031
Year 9	2007	43,445
Year 10	2008	43,863
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	41,813
Year 2	2004	42,215
Year 3	2005	42,621
Year 4	2006	43,031
Year 5	2007	43,445
2015 Compliance Year Population		
2015		45,496
NOTES: DWR Population Tool; Interpolation due to no connections data 1998-2004		

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year *Fm SB X7-7 Table 3*		**Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**Deductions**					**Annual 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.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1999	11,296			-		-	11,296
Year 2	2000	12,855			-		-	12,855
Year 3	2001	11,063			-		-	11,063
Year 4	2002	12,000			-		-	12,000
Year 5	2003	11,958			-		-	11,958
Year 6	2004	12,096			-		-	12,096
Year 7	2005	12,009			-		-	12,009
Year 8	2006	12,484			-		-	12,484
Year 9	2007	12,566			-		-	12,566
Year 10	2008	11,932			-		-	11,932
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**12,026**
5 Year Baseline - Gross Water Use								
Year 1	2003	11,958			-		-	11,958
Year 2	2004	12,096			-		-	12,096
Year 3	2005	12,009			-		-	12,009
Year 4	2006	12,484			-		-	12,484
Year 5	2007	12,566			-		-	12,566
5 year baseline average gross water use								**12,223**
2015 Compliance Year - Gross Water Use								
2015		9,009	100		-		-	**8,909**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

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

Complete one table for each source.

Name of Source	Bunker Hill Basin
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1999	6347.8		6,348
Year 2	2000	6287.8		6,288
Year 3	2001	5337.7		5,338
Year 4	2002	7376.7		7,377
Year 5	2003	7382.4		7,382
Year 6	2004	6128.5		6,129
Year 7	2005	5807.1		5,807
Year 8	2006	6719		6,719
Year 9	2007	6886		6,886
Year 10	2008	6898.6		6,899
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2003	7382.4		7,382
Year 2	2004	6128.5		6,129
Year 3	2005	5807.1		5,807
Year 4	2006	6719		6,719
Year 5	2007	6886		6,886
2015 Compliance Year - Water into Distribution System				
2015		6,570		6,570

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

NOTES: Colton RUWMP item 1 update

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Colton Rialto Basin
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999	3046.3		3,046
Year 2	2,000	4701.3		4,701
Year 3	2,001	3893.3		3,893

Year 4	2,002	2737.2		2,737
Year 5	2,003	3553.7		3,554
Year 6	2,004	4509.5		4,510
Year 7	2,005	3945.9		3,946
Year 8	2,006	3923.6		3,924
Year 9	2,007	4009.6		4,010
Year 10	2,008	3962.9		3,963
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	3553.7		3,554
Year 2	2,004	4509.5		4,510
Year 3	2,005	3945.9		3,946
Year 4	2,006	3923.6		3,924
Year 5	2,007	4009.6		4,010
2015 Compliance Year - Water into Distribution System				
2015		1,369		1,369

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

NOTES: Colton RUWMP item 1 update

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Riverside North Basin
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*	Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System			
Year 1	1,999	1902	1,902
Year 2	2,000	1866.2	1,866
Year 3	2,001	1831.7	1,832
Year 4	2,002	267.6	268
Year 5	2,003	312.8	313
Year 6	2,004	1235	1,235
Year 7	2,005	2135.5	2,136
Year 8	2,006	1686.8	1,687
Year 9	2,007	1664.3	1,664
Year 10	2,008	1070.1	1,070
Year 11	-		0
Year 12	-		0
Year 13	-		0
Year 14	-		0
Year 15	-		0
5 Year Baseline - Water into Distribution System			
Year 1	2,003	312.8	313
Year 2	2,004	1235	1,235
Year 3	2,005	2135.5	2,136
Year 4	2,006	1686.8	1,687

Year 5	2,007	1664.3		1,664
2015 Compliance Year - Water into Distribution System				
2015		1,070		1,070

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

NOTES: Colton RUWMP item 1 update

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	SBW
This water source is:	
☐	The supplier's own water source
☑	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999	0		0
Year 2	2,000	0		0
Year 3	2,001	0		0
Year 4	2,002	799.7		800
Year 5	2,003	472.8		473
Year 6	2,004	106.8		107
Year 7	2,005	120.3		120
Year 8	2,006	154.9		155
Year 9	2,007	0		0
Year 10	2,008	0		0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	472.8		473
Year 2	2,004	106.8		107
Year 3	2,005	120.3		120
Year 4	2,006	154.9		155
Year 5	2,007	0		0
2015 Compliance Year - Water into Distribution System				
2015		0		0

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

NOTES: Colton RUWMP item 1 update

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	RHW
This water source is:	
☐	The supplier's own water source
☑	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999	0		0
Year 2	2,000	0		0
Year 3	2,001	0		0
Year 4	2,002	819		819
Year 5	2,003	236.4		236
Year 6	2,004	116		116
Year 7	2,005	0		0
Year 8	2,006	0		0
Year 9	2,007	6.2		6
Year 10	2,008	0		0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	236.4		236
Year 2	2,004	116		116
Year 3	2,005	0		0
Year 4	2,006	0		0
Year 5	2,007	6.2		6
2015 Compliance Year - Water into Distribution System				
2015		0		0

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

NOTES: Colton RUWMP item 1 update

SB X7-7 Table 4-A: Volume Entering the Distribution	
Name of Source	Source 6
This water source is:	
☐	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			0
Year 11	-			0

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	39,897	11,296	253
Year 2	2000	40,629	12,855	282
Year 3	2001	41,020	11,063	241
Year 4	2002	41,414	12,000	259
Year 5	2003	41,813	11,958	255
Year 6	2004	42,215	12,096	256
Year 7	2005	42,621	12,009	252
Year 8	2006	43,031	12,484	259
Year 9	2007	43,445	12,566	258
Year 10	2008	43,863	11,932	243
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**256**
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	41,813	11,958	255
Year 2	2004	42,215	12,096	256
Year 3	2005	42,621	12,009	252
Year 4	2006	43,031	12,484	259
Year 5	2007	43,445	12,566	258
5 Year Average Baseline GPCD				**256**
2015 Compliance Year GPCD				
2015		45,496	8,909	**175**

NOTES:

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	256
5 Year Baseline GPCD	256
2015 Compliance Year GPCD	175
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☑	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
256	**205**
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
256	243	205	**205**

[1] Maximum 2020 Target is 95% of the 5 Year Baseline GPCD *[2] 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.*

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
205	256	**230**
NOTES:		

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)* Enter "0" if Adjustment Not Used: Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
175	230	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	-	175	175	**YES**

NOTES:

SB X7-7 Tables – The City of Rialto

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

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	15,089	Acre Feet
	2008 total volume of delivered recycled water	49	Acre Feet
	2008 recycled water as a percent of total deliveries	0.33%	Percent
	Number of years in baseline period[1, 2]	10	Years
	Year beginning baseline period range	1998	
	Year ending baseline period range[3]	2007	
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: PRODUCTION 1995-2010

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1998	48,851
Year 2	1999	49,554
Year 3	2000	50,267
Year 4	2001	50,665
Year 5	2002	51,066
Year 6	2003	51,470
Year 7	2004	51,877
Year 8	2005	52,287
Year 9	2006	52,701
Year 10	2007	53,118
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	51,470
Year 2	2004	51,877
Year 3	2005	52,287
Year 4	2006	52,701
Year 5	2007	53,118
2015 Compliance Year Population		
2015		54,453
NOTES: DWR Population Tool		

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year *Fm SB X7-7 Table 3*		**Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**Deductions**					**Annual 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.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1998	11,890	1,256		-		-	10,634
Year 2	1999	13,050	1,479		-		-	11,571
Year 3	2000	14,182	1,559		-		-	12,623
Year 4	2001	14,131	1,495		-		-	12,636
Year 5	2002	13,277	1,517		-		-	11,760
Year 6	2003	12,059	1,006		-		-	11,053
Year 7	2004	12,531	856		-		-	11,675
Year 8	2005	15,465	752		-		-	14,713
Year 9	2006	14,577	551		-		-	14,026
Year 10	2007	12,734	733		-		-	12,001
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**12,269**
5 Year Baseline - Gross Water Use								
Year 1	2003	12,059	1,006		-		-	11,053
Year 2	2004	12,531	856		-		-	11,675
Year 3	2005	15,465	752		-		-	14,713
Year 4	2006	14,577	551		-		-	14,026
Year 5	2007	12,734	733		-		-	12,001
5 year baseline average gross water use								**12,694**
2015 Compliance Year - Gross Water Use								
2015		8,771	-		-		-	**8,771**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

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

Complete one table for each source.

Name of Source	Rialto-Colton
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1998	4,325		4,325
Year 2	1999	4,197		4,197
Year 3	2000	4,073		4,073
Year 4	2001	4,586		4,586
Year 5	2002	5,320		5,320
Year 6	2003	4,398		4,398
Year 7	2004	2,867		2,867
Year 8	2005	1,593		1,593
Year 9	2006	947		947
Year 10	2007	1,769		1,769
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2003	4,398		4,398
Year 2	2004	2,867		2,867
Year 3	2005	1,593		1,593
Year 4	2006	947		947
Year 5	2007	1,769		1,769
2015 Compliance Year - Water into Distribution System				
2015		1,498		1,498

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

NOTES: 1995 - 2015 Production Totals

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Riverside North
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,998	417		417
Year 2	1,999	863		863
Year 3	2,000	703		703

Year 4	2,001	974		974
Year 5	2,002	870		870
Year 6	2,003	198		198
Year 7	2,004	1218		1,218
Year 8	2,005	790		790
Year 9	2,006	583		583
Year 10	2,007	690		690
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	198		198
Year 2	2,004	1218		1,218
Year 3	2,005	790		790
Year 4	2,006	583		583
Year 5	2,007	690		690
2015 Compliance Year - Water into Distribution System				
2015		1,238		1,238
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES: 1995 - 2015 Production Totals				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Lytle Creek			
This water source is:				
☑	The supplier's own water source			
☐	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,998	3084		3,084
Year 2	1,999	3644		3,644
Year 3	2,000	3683		3,683
Year 4	2,001	2542		2,542
Year 5	2,002	2729		2,729
Year 6	2,003	2440		2,440
Year 7	2,004	2689		2,689
Year 8	2,005	4052		4,052
Year 9	2,006	2929		2,929
Year 10	2,007	2806		2,806
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	2440		2,440
Year 2	2,004	2689		2,689
Year 3	2,005	4052		4,052
Year 4	2,006	2929		2,929

Year 5	2,007	2806		2,806
2015 Compliance Year - Water into Distribution System				
2015		1,757		1,757
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES: 1995 - 2015 Production Totals				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Bunker Hill through Baseline Feeder			
This water source is:				
☐	The supplier's own water source			
☑	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,998	673		673
Year 2	1,999	153		153
Year 3	2,000	974		974
Year 4	2,001	1486		1,486
Year 5	2,002	773		773
Year 6	2,003	1760		1,760
Year 7	2,004	2736		2,736
Year 8	2,005	4921		4,921
Year 9	2,006	3084		3,084
Year 10	2,007	2377		2,377
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	1760		1,760
Year 2	2,004	2736		2,736
Year 3	2,005	4921		4,921
Year 4	2,006	3084		3,084
Year 5	2,007	2377		2,377
2015 Compliance Year - Water into Distribution System				
2015		971		971
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES: 1995 - 2015 Production Totals				

SB X7-7 Table 4-A: Volume Entering the Distribution	
Name of Source	Lytle Creek Surface Water
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,998	1065		1,065
Year 2	1,999	1461		1,461
Year 3	2,000	1619		1,619
Year 4	2,001	1305		1,305
Year 5	2,002	1143		1,143
Year 6	2,003	726		726
Year 7	2,004	1707		1,707
Year 8	2,005	1210		1,210
Year 9	2,006	1448		1,448
Year 10	2,007	1161		1,161
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	726		726
Year 2	2,004	1707		1,707
Year 3	2,005	1210		1,210
Year 4	2,006	1448		1,448
Year 5	2,007	1161		1,161
2015 Compliance Year - Water into Distribution System				
2015		998		998

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

NOTES: 1995 - 2015 Production Totals

SB X7-7 Table 4-A: Volume Entering the Distribution	
Name of Source	SBVMWD through Baseline Feeder
This water source is:	
☐	The supplier's own water source
☑	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,998	2148		2,148
Year 2	1,999	2574		2,574
Year 3	2,000	3013		3,013
Year 4	2,001	3146		3,146
Year 5	2,002	2426		2,426
Year 6	2,003	2537		2,537
Year 7	2,004	1297		1,297
Year 8	2,005	1932		1,932
Year 9	2,006	4650		4,650
Year 10	2,007	2861		2,861
Year 11	-			0

Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	2537		2,537
Year 2	2,004	1297		1,297
Year 3	2,005	1932		1,932
Year 4	2,006	4650		4,650
Year 5	2,007	2861		2,861
2015 Compliance Year - Water into Distribution System				
2015		1,989		1,989
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES: 1995 - 2015 Production Totals				

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	No Man's Land
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,998	178		178
Year 2	1,999	158		158
Year 3	2,000	117		117
Year 4	2,001	92		92
Year 5	2,002	16		16
Year 6	2,003	0		0
Year 7	2,004	17		17
Year 8	2,005	967		967
Year 9	2,006	936		936
Year 10	2,007	1070		1,070
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	0		0
Year 2	2,004	17		17
Year 3	2,005	967		967
Year 4	2,006	936		936
Year 5	2,007	1070		1,070
2015 Compliance Year - Water into Distribution System				
2015		0		0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES: 1995 - 2015 Production Totals				

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	SBMWD through Baseline Feeder			
This water source is:				
☐	The supplier's own water source			
☑	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,998			0
Year 2	1,999			0
Year 3	2,000			0
Year 4	2,001			0
Year 5	2,002			0
Year 6	2,003			0
Year 7	2,004			0
Year 8	2,005			0
Year 9	2,006			0
Year 10	2,007			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003			0
Year 2	2,004			0
Year 3	2,005			0
Year 4	2,006			0
Year 5	2,007			0
2015 Compliance Year - Water into Distribution System				
2015		320		320
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES: Through Phone Call with Rialto				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Source 9			
This water source is:				
☐	The supplier's own water source			
☐	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,998			0
Year 2	1,999			0
Year 3	2,000			0
Year 4	2,001			0
Year 5	2,002			0
Year 6	2,003			0
Year 7	2,004			0
Year 8	2,005			0

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	1998	48,851	10,634	194
Year 2	1999	49,554	11,571	208
Year 3	2000	50,267	12,623	224
Year 4	2001	50,665	12,636	223
Year 5	2002	51,066	11,760	206
Year 6	2003	51,470	11,053	192
Year 7	2004	51,877	11,675	201
Year 8	2005	52,287	14,713	251
Year 9	2006	52,701	14,026	238
Year 10	2007	53,118	12,001	202
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**214**
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	51,470	11,053	192
Year 2	2004	51,877	11,675	201
Year 3	2005	52,287	14,713	251
Year 4	2006	52,701	14,026	238
Year 5	2007	53,118	12,001	202
5 Year Average Baseline GPCD				**217**
2015 Compliance Year GPCD				
2015		54,453	8,771	**144**
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	214
5 Year Baseline GPCD	217
2015 Compliance Year GPCD	144
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☑	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
214	**171**
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
217	206	171	**171**

[1] Maximum 2020 Target is 95% of the 5 Year Baseline GPCD *[2] 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.*

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
171	214	**192**
NOTES:		

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)* Enter "0" if Adjustment Not Used: Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
144	192	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	-	144	144	**YES**

NOTES:

SB X7-7 Tables – Riverside Highland Water Company

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

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	3,935	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	2000	
	Year ending baseline period range[3]	2009	
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: 2010 UWMP

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	2000	14,476
Year 2	2001	14,552
Year 3	2002	14,628
Year 4	2003	14,705
Year 5	2004	14,782
Year 6	2005	14,859
Year 7	2006	14,937
Year 8	2007	15,015
Year 9	2008	15,094
Year 10	2009	15,173
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	14,705
Year 2	2004	14,782
Year 3	2005	14,859
Year 4	2006	14,937
Year 5	2007	15,015
2015 Compliance Year Population		
2015		16,007
NOTES: DWR Population Tool		

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

Baseline Year *Fm SB X7-7 Table 3*		Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	Deductions					Annual 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.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	2000	5,170			-	1,176	-	3,994
Year 2	2001	4,655			-	839	-	3,816
Year 3	2002	5,794			-	1,022	-	4,772
Year 4	2003	4,630			-	708	-	3,922
Year 5	2004	4,545			-	501	-	4,044
Year 6	2005	4,414			-	691	-	3,723
Year 7	2006	3,847			-	163	-	3,684
Year 8	2007	4,218			-	96	-	4,122
Year 9	2008	3,935			-	64	-	3,871
Year 10	2009	3,916			-	91	-	3,825
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**3,977**
5 Year Baseline - Gross Water Use								
Year 1	2003	4,630			-	708	-	3,922
Year 2	2004	4,545			-	501	-	4,044
Year 3	2005	4,414			-	691	-	3,723
Year 4	2006	3,847			-	163	-	3,684
Year 5	2007	4,218			-	96	-	4,122
5 year baseline average gross water use								**3,899**
2015 Compliance Year - Gross Water Use								
2015		2,964	-		-	-	-	**2,964**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES:

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

Complete one table for each source.

Name of Source	Lytle Creek, Bunker Hill, Rialto-Colton, Riverside N
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	2000	5,170		5,170
Year 2	2001	4,655		4,655
Year 3	2002	5,794		5,794
Year 4	2003	4,630		4,630
Year 5	2004	4,545		4,545
Year 6	2005	4,414		4,414
Year 7	2006	3,847		3,847
Year 8	2007	4,218		4,218
Year 9	2008	3,935		3,935
Year 10	2009	3,916		3,916
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2003	4,630		4,630
Year 2	2004	4,545		4,545
Year 3	2005	4,414		4,414
Year 4	2006	3,847		3,847
Year 5	2007	4,218		4,218
2015 Compliance Year - Water into Distribution System				
2015		2,964		2,964

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

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Source 2
This water source is:	
☐	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	2,000			0
Year 2	2,001			0
Year 3	2,002			0
Year 4	2,003			0

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	2000	14,476	3,994	246
Year 2	2001	14,552	3,816	234
Year 3	2002	14,628	4,772	291
Year 4	2003	14,705	3,922	238
Year 5	2004	14,782	4,044	244
Year 6	2005	14,859	3,723	224
Year 7	2006	14,937	3,684	220
Year 8	2007	15,015	4,122	245
Year 9	2008	15,094	3,871	229
Year 10	2009	15,173	3,825	225
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**240**
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	14,705	3,922	238
Year 2	2004	14,782	4,044	244
Year 3	2005	14,859	3,723	224
Year 4	2006	14,937	3,684	220
Year 5	2007	15,015	4,122	245
5 Year Average Baseline GPCD				**234**
2015 Compliance Year GPCD				
2015		16,007	2,964	**165**
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	240
5 Year Baseline GPCD	234
2015 Compliance Year GPCD	165
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☑	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
240	**192**
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
234	223	192	**192**

[1] Maximum 2020 Target is 95% of the 5 Year Baseline GPCD *[2] 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.*

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
192	240	**216**
NOTES:		

SB X7-7 Table 9: 2015 Compliance								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)*			TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
		Enter "0" if Adjustment Not Used						
		Extraordinary Events	Weather Normalization	Economic Adjustment				
165	216	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	-	165	165	**YES**
NOTES:								

2015 San Bernardino Valley RUWMP

Appendix R

UWMP Tables – San Bernardino Valley Municipal Water District

Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* *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)**		San Bernardino Valley Municipal Water District
NOTES:			

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☑	Agency is a wholesaler
☐	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

Table 2-4 Wholesale: Water Supplier Information Exchange (select one)	
☑	Supplier has informed more than 10 other water suppliers of water supplies available in accordance with CWC 10631. Completion of the table below is optional. If not completed include a list of the water suppliers that were informed.
	Provide page number for location of the list.
☐	Supplier has informed 10 or fewer other water suppliers of water supplies available in accordance with CWC 10631. **Complete the table below.**
Water Supplier Name *(Add additional rows as needed)*	
Section 1.4.3	
NOTES:	

Table 4-1 Wholesale: Demands for Potable and Raw Water - Actual			
Use Type *(Add additional rows as needed)*	2015 Actual		
Drop down list *May select each use multiple times* *These are the only use types that will be recognized by the WUE data online submittal tool*	Additional Description *(as needed)*	Level of Treatment When Delivered *Drop down list*	Volume
Sales to other agencies	City of Rialto - Baseline Feeder	Drinking Water	1,989
Sales to other agencies	WVWD - Baseline Feeder	Drinking Water	4,367
Sales to other agencies	WVWD - SWP	Drinking Water	2,244
Sales to other agencies	EVWD - SWP	Drinking Water	2,870
Sales to other agencies	Redlands - SWP	Drinking Water	0
Sales to other agencies	YVWD - SWP	Drinking Water	4,133
Sales to other agencies	Loma Linda - SWP	Drinking Water	1
Sales to other agencies	Fontana WC - SWP	Drinking Water	2,000
Sales to other agencies	CLAWC - SWP	Drinking Water	60
Sales to other agencies	Big Bear MWD	Drinking Water	6,500
		TOTAL	24,164
NOTES:			

Table 4-2 Wholesale: Demands for Potable and Raw Water - Projected						
Use Type *(Add additional rows as needed)*	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.*		2020	2025	2030	2035	2040 *(opt)*
Sales to other agencies	City of Rialto - Baseline Feeder	2,500	2,500	2,500	2,500	2,500
Sales to other agencies	WVWD - Baseline Feeder	5,000	5,000	5,000	5,000	5,000
Sales to other agencies	WVWD - SWP	7,000	7,000	7,000	7,000	7,000
Sales to other agencies	EVWD - SWP	8,960	8,960	8,960	8,960	8,960
Sales to other agencies	Redlands - SWP	1,500	2,000	2,500	3,000	3,000
Sales to other agencies	YVWD - SWP	10,587	10,868	10,738	10,982	10,338
Sales to other agencies	Fontana WC - SWP	2,000	2,000	2,000	2,000	2,000
Sales to other agencies	CLAWC - SWP	60	60	60	60	60
Sales to other agencies	Big Bear MWD	6,500	6,500	6,500	6,500	6,500
Sales to other agencies	Loma Linda - SWP	0	0	0	0	0
	TOTAL	44,107	44,888	45,258	46,002	45,358

sdfgsr

Table 4-3 Wholesale: Total Water Demands						
	2015	2020	2025	2030	2035	2040*(opt)*
Potable and Raw Water *From Tables 4-1 and 4-2*	24,164	44,107	44,888	45,258	46,002	45,358
Recycled Water Demand* *From Table 6-4*	0	0	0	0	0	0
TOTAL WATER DEMAND	24,164	44,107	44,888	45,258	46,002	45,358
**Recycled water demand fields will be blank until Table 6-4 is complete.*						
NOTES:						

Table 4-4 Wholesale: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	420
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES:	

Table 6-3 Wholesale: Wastewater Treatment and Discharge Within Service Area in 2015										
☑	Wholesale supplier neither distributes nor provides supplemental treatment to recycled water. The supplier will not complete the table below.									
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
						Total	0	0	0	0
NOTES:										

Table 6-4 Wholesale: Current and Projected Retailers Provided Recycled Water Within Service Area							
☑	Recycled water is not directly treated or distributed by the supplier. The supplier will not complete the table below.						
Name of Receiving Supplier or Direct Use by Wholesaler	Level of Treatment *Drop down list*	2015	2020	2025	2030	2035	2040 *(opt)*
Add additional rows as needed							
Total		0	0	0	0	0	0
NOTES:							

Table 6-5 Wholesale: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual		
☑	Recycled water was not used or distributed by the supplier in 2010, nor projected for use or distribution in 2015. The wholesale supplier will not complete the table below.	
Name of Receiving Supplier or Direct Use by Wholesaler	2010 Projection for 2015	2015 actual use
Add additional rows as needed		
Total	0	0
NOTES:		

Table 6-7 Wholesale: 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.					
Page 2-24	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description *(if needed)*	Planned Implementation Year	Planned for Use in Year Type *Drop Down list*	Expected Increase in Water Supply to Agency
	Drop Down Menu	*If Yes, Agency Name*				
Add additional rows as needed						
NOTES:						

Table 6-8 Wholesale: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
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	SBBA	6,874	Drinking Water	
Purchased or Imported Water	SWP	17,807	Raw Water	
Total		24,681		0
NOTES:				

Table 6-9 Wholesale: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply *Report To the Extent Practicable*									
		2020		2025		2030		2035		2040 *(opt)*	
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*
Add additional rows as needed											
Groundwater	SBBA	7,500		7,500		7,500		7,500		7,500	
Purchased or Imported Water	SWP	63,000		63,000		63,000		63,000		63,000	
Total		70,500	0	70,500	0	70,500	0	70,500	0	70,500	0

NOTES:

Table 7-1 Wholesale: Basis of Water Year Data

Year Type	Base Year *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	Available Supplies if Year Type Repeats	
		☑ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____Chapter 2_____	
		☐ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year	1922-2004		100%
Single-Dry Year	2014		
Multiple-Dry Years 1st Year	1931		
Multiple-Dry Years 2nd Year	1932		
Multiple-Dry Years 3rd Year	1933		
Multiple-Dry Years 4th Year *Optional*	1934		
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			

Agency 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 an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table. Suppliers may create an additional worksheet for the additional tables.

Note: Base Years are for the State Water Project, as identified in Table 6-4 of the 2015 State Water Project Delivery Capability Report (DCR). The period of record analyzed in the 2015 DCR did not include 2014, which was the lowest single year allocation for the State Water Project and is considered the single-dry year for this report.

Table 7-2 Wholesale: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 *(Opt)*
Supply totals *(autofill from Table 6-9)*	70,500	70,500	70,500	70,500	70,500
Demand totals *(autofill fm Table 4-3)*	44,107	44,888	45,258	46,002	45,358
Difference	26,393	25,612	25,242	24,498	25,142
NOTES:					

Table 7-3 Wholesale: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	44,107	44,888	45,258	46,002	45,358
Demand totals	44,107	44,888	45,258	46,002	45,358
Difference	0	0	0	0	0
NOTES:					

Table 7-4 Wholesale: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	44,107	44,888	45,258	46,002	45,358
	Demand totals	44,107	44,888	45,258	46,002	45,358
	Difference	0	0	0	0	0
Second year	Supply totals	44,107	44,888	45,258	46,002	45,358
	Demand totals	44,107	44,888	45,258	46,002	45,358
	Difference	0	0	0	0	0
Third year	Supply totals	44,107	44,888	45,258	46,002	45,358
	Demand totals	44,107	44,888	45,258	46,002	45,358
	Difference	0	0	0	0	0
Fourth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fifth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Sixth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
NOTES:						

Table 8-1 Wholesale Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Supply Reduction[1]	Water Supply Condition (*Narrative description)*
Add additional rows as needed		
1	20%	Pursue a vigorous public information campaign regarding current water supply conditions and the need to reduce water consumption by such means deemed appropriate. Meet with other water purveyors, public school districts, park agencies, and golf courses that use water sources other than purveyor-supplied water, to seek voluntary reduction in irrigation of decorative landscape and reduce irrigation of turf and play areas.
2	35%	Limit water deliveries for residential uses to 65 percent of their water consumption for the same billing cycle during a pre-determined Base Year.
3	50%	Limit water deliveries for residential uses to 50 percent of their water consumption for the same billing cycle during a pre-determined Base Year.
[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*		
NOTES:		

Table 8-4 Wholesale: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	44,107	44,107	44,107
NOTES:			

Table 10-1 Wholesale: Notification to Cities and Counties (select one)		
☑	Supplier has notified more than 10 cities or counties in accordance with CWC 10621 (b) and 10642. **Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.**	
Section 1.4.3	Provide the page or location of this list in the UWMP.	
☐	Supplier has notified 10 or fewer cities or counties. **Complete the table below.**	
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
	☐	☐
	☐	☐
	☐	☐
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
	☐	☐
	☐	☐
NOTES:		

UWMP Tables – East Valley Water District

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3610064	East Valley Water District	21,263	17,165
	TOTAL	21,263	17,165
NOTES:			

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

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

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 CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
San Bernardino Valley Municipal Water District
NOTES:

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, etc… utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015

☑	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
						Total	0	0	0	0

NOTES:

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

☑	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.

Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation			
Landscape irrigation (excludes golf courses)			
Golf course irrigation			
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	*Type of Use*		
Total		0	0

NOTES:

Table 7-1 Retail: Basis of Water Year Data			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	**Available Supplies if Year Type Repeats**	
		☑	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____7.8_____
		☐	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	**% of Average Supply**
Average Year	2003		100%
Single-Dry Year	2002		
Multiple-Dry Years 1st Year	2000		
Multiple-Dry Years 2nd Year	2001		
Multiple-Dry Years 3rd Year	2002		
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			
Agency 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 an agency 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.			
NOTES:			

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Highland	☑	☑
San Bernardino	☑	☑
	☐	☐
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
San Bernardino County	☑	☑
	☐	☐

UWMP Tables – The City of Loma Linda

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3610013	City of Loma Linda	5,331	4,682
	TOTAL	5,331	4,682
NOTES:			

Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* *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)**		San Bernardino Valley Municipal Water District
NOTES:			

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

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 CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
San Bernardino Valley Municipal Water District
NOTES:

Table 4-3 Retail: Total Water Demands						
	2015	2020	2025	2030	2035	2040 *(opt)*
Potable and Raw Water *From Tables 4-1 and 4-2*	4,682	5,200	5,527	5,875	6,245	6,638
Recycled Water Demand* *From Table 6-4*	0	0	0	0	0	0
TOTAL WATER DEMAND	4,682	5,200	5,527	5,875	6,245	6,638
**Recycled water demand fields will be blank until Table 6-4 is complete.*						
NOTES:						

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, etc… utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015

☑	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
						Total	0	0	0	0

NOTES:

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

☐ Recycled water is not used and is not planned for use within the service area of the supplier.
The supplier will not complete the table below.

Name of Agency Producing (Treating) the Recycled Water:	
Name of Agency Operating the Recycled Water Distribution System:	
Supplemental Water Added in 2015	
Source of 2015 Supplemental Water	

Beneficial Use Type	General Description of 2015 Uses	Level of Treatment *Drop down list*	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation								
Landscape irrigation (excludes golf courses)								
Golf course irrigation								
Commercial use								
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other *(Provide General Description)*								
		Total:	0	0	0	0	0	0

**IPR - Indirect Potable Reuse*

NOTES:

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

☑	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.

Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation			
Landscape irrigation (excludes golf courses)			
Golf course irrigation			
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	*Type of Use*		
Total		0	0

NOTES:

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 agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Agency *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
Add additional rows as needed						
NOTES:						

Table 7-1 Retail: Basis of Water Year Data			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	**Available Supplies if Year Type Repeats**	
		☑	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____Section 8.8_____
		☐	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	**% of Average Supply**
Average Year	2003		100%
Single-Dry Year	2002		
Multiple-Dry Years 1st Year	2000		
Multiple-Dry Years 2nd Year	2001		
Multiple-Dry Years 3rd Year	2002		
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			
Agency 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 an agency 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.			

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Loma Linda	☑	☑
	☐	☐
	☐	☐
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
San Bernardino County	☑	☑
	☐	☐

UWMP Tables – The City of Redlands

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc… utilized in demand projections are found.	Was incorporated into the City's 2016 water rate model.
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

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 agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Agency *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
Add additional rows as needed						
NOTES:						

UWMP Tables – San Bernardino Municipal Water Department

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3610039	City of San Bernardino	44,630	35,665
	TOTAL	44,630	35,665
NOTES:			

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

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

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 CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
San Bernardino Valley Municipal Water District
NOTES:

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, etc… utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

Table 7-1 Retail: Basis of Water Year Data			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	**Available Supplies if Year Type Repeats**	
		☑	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____Section 10.8_____
		☐	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	**% of Average Supply**
Average Year	2003		100%
Single-Dry Year	2002		
Multiple-Dry Years 1st Year	2000		
Multiple-Dry Years 2nd Year	2001		
Multiple-Dry Years 3rd Year	2002		
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			
Agency 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 an agency 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.			

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
San Bernardino	☑	☑
	☐	☐
	☐	☐
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
San Bernardino County	☑	☑
	☐	☐

UWMP Tables – West Valley Water District

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3610004	West Valley Water District	20,540	17,038
	TOTAL	20,540	17,038
NOTES:			

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

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

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 CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
San Bernardino Valley Municipal Water District
NOTES:

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, etc… utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015										
☑	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.									
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal ***Drop down list***	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level ***Drop down list***	2015 volumes Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
						Total	0	0	0	0
NOTES:										

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

☐ Recycled water is not used and is not planned for use within the service area of the supplier.
The supplier will not complete the table below.

Name of Agency Producing (Treating) the Recycled Water:	
Name of Agency Operating the Recycled Water Distribution System:	
Supplemental Water Added in 2015	
Source of 2015 Supplemental Water	

Beneficial Use Type	General Description of 2015 Uses	Level of Treatment *Drop down list*	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation								
Landscape irrigation (excludes golf courses)								
Golf course irrigation								
Commercial use								
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other *(Provide General Description)*								
		Total:	0	0	0	0	0	0

*IPR - Indirect Potable Reuse

NOTES:

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

☑	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.

Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation			
Landscape irrigation (excludes golf courses)			
Golf course irrigation			
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	*Type of Use*		
Total		0	0

NOTES:

Table 7-1 Retail: Basis of Water Year Data

Year Type	Base Year *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	Available Supplies if Year Type Repeats	
		☑ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____Section 11.8_____	
		☐ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year	2003		100%
Single-Dry Year	2002		
Multiple-Dry Years 1st Year	2000		
Multiple-Dry Years 2nd Year	2001		
Multiple-Dry Years 3rd Year	2002		
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			

Agency 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 an agency 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.

Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference *(optional)*
Add additional rows as needed		
NOTES:		

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Colton	☑	☑
Rialto	☑	☑
Fontana	☑	☑
Jurupa Valley	☑	☑
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
San Bernardino County	☑	☑
Riverside County	☑	☑

UWMP Tables – Yucaipa Valley Water District

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

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, etc… utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

Table 7-1 Retail: Basis of Water Year Data			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	**Available Supplies if Year Type Repeats**	
		☑	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____Section 12.9_____
		☐	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	**% of Average Supply**
Average Year	1922-2004		100%
Single-Dry Year	2014		
Multiple-Dry Years 1st Year	1931		
Multiple-Dry Years 2nd Year	1932		
Multiple-Dry Years 3rd Year	1933		
Multiple-Dry Years 4th Year *Optional*	1934		
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			
Agency 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 an agency 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.			

UWMP Tables – The City of Colton

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3610014	City of Colton	9,955	9,008
	TOTAL	9,955	9,008
NOTES:			

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

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

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 CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
San Bernardino Valley Municipal Water District
NOTES:

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, etc… utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

☐ Recycled water is not used and is not planned for use within the service area of the supplier.
The supplier will not complete the table below.

Name of Agency Producing (Treating) the Recycled Water:	
Name of Agency Operating the Recycled Water Distribution System:	
Supplemental Water Added in 2015	
Source of 2015 Supplemental Water	

Beneficial Use Type	General Description of 2015 Uses	Level of Treatment *Drop down list*	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation								
Landscape irrigation (excludes golf courses)								
Golf course irrigation								
Commercial use								
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other *(Provide General Description)*								
		Total:	0	0	0	0	0	0

**IPR - Indirect Potable Reuse*

NOTES:

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

☑	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.

Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation			
Landscape irrigation (excludes golf courses)			
Golf course irrigation			
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	*Type of Use*		
Total		0	0

NOTES:

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☑	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
13.5.6.3	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Add additional rows as needed			
		Total	0
NOTES:			

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 agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Agency *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
Add additional rows as needed						
NOTES:						

Table 7-1 Retail: Basis of Water Year Data			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	**Available Supplies if Year Type Repeats**	
		☑	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____Section 13.8_____
		☐	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	**% of Average Supply**
Average Year	2003		100%
Single-Dry Year	2002		
Multiple-Dry Years 1st Year	2000		
Multiple-Dry Years 2nd Year	2001		
Multiple-Dry Years 3rd Year	2002		
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			
Agency 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 an agency 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.			

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Colton	☑	☑
	☐	☐
	☐	☐
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
San Bernardino County	☑	☑
	☐	☐

UWMP Tables – The City of Rialto

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3610038	City of Rialto	11,956	8,771
	TOTAL	11,956	8,771
NOTES:			

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

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

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 CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
San Bernardino Valley Municipal Water District
NOTES:

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, etc… utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☑	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
14.5.5.5	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Add additional rows as needed			
		Total	0
NOTES:			

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 agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Agency *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
Add additional rows as needed						
NOTES:						

Table 7-1 Retail: Basis of Water Year Data

Year Type	Base Year *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	Available Supplies if Year Type Repeats	
		☑ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location ___Section 14.8_____	
		☐ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year	2003		100%
Single-Dry Year	2002		
Multiple-Dry Years 1st Year	2000		
Multiple-Dry Years 2nd Year	2001		
Multiple-Dry Years 3rd Year	2002		
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			

Agency 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 an agency 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.

NOTES:

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Rialto	☑	☑
	☐	☐
	☐	☐
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
San Bernardino County	☑	☑
	☐	☐

UWMP Tables – Riverside Highland Water Company

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3610057	Riverside Highland Water Company	4,127	2,964
	TOTAL	4,127	2,964
NOTES:			

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

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 CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
San Bernardino Valley Municipal Water District
NOTES:

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, etc… utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015

☑	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
						Total	0	0	0	0

NOTES:

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

☐ Recycled water is not used and is not planned for use within the service area of the supplier.
The supplier will not complete the table below.

Name of Agency Producing (Treating) the Recycled Water:	
Name of Agency Operating the Recycled Water Distribution System:	
Supplemental Water Added in 2015	
Source of 2015 Supplemental Water	

Beneficial Use Type	General Description of 2015 Uses	Level of Treatment *Drop down list*	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation								
Landscape irrigation (excludes golf courses)								
Golf course irrigation								
Commercial use								
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other *(Provide General Description)*								
		Total:	0	0	0	0	0	0

**IPR - Indirect Potable Reuse*

NOTES:

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

☑	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.

Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation			
Landscape irrigation (excludes golf courses)			
Golf course irrigation			
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	*Type of Use*		
Total		0	0

NOTES:

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☑	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
15.5.5.3	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Add additional rows as needed			
		Total	0
NOTES:			

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.					
15.5.8	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Agency *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
Add additional rows as needed						
NOTES:						

Table 7-1 Retail: Basis of Water Year Data			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	**Available Supplies if Year Type Repeats**	
		☑	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location ____Section 15.8_____
		☐	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	**% of Average Supply**
Average Year	2003		100%
Single-Dry Year	2002		
Multiple-Dry Years 1st Year	2000		
Multiple-Dry Years 2nd Year	2001		
Multiple-Dry Years 3rd Year	2002		
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			
Agency 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 an agency 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.			
NOTES:			

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Grand Terrace	☑	☑
	☐	☐
	☐	☐
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
San Bernardino County	☑	☑
Riverside County	☑	☑

2015 San Bernardino Valley RUWMP

Appendix S

SBVMWD Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.2**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.4**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.4.3**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 6.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 6.2**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 6.1**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Chapter 2**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 6.1**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Chapter 3**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 3.4**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**NA**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**NA**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along	Baselines and Targets	Chapter 5 and App E	**NA**

	with the bases for determining those estimates, including references to supporting data.			
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**NA**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**NA**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**NA**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**Section 6.4**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**NA**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 2.8**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 2.2**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**NA**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	**Section 2.2**

10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 2.2 and 2.3**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 2.4**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 2.8**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Section 2.7**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**NA**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**Section 2.1**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**NA**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**NA**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 3.3**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 3.3**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 2.6**
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	**Section 3.3**

10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 2.6.2**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 2.6.2**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 2.9**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 1.6**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Chapter 4**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**NA**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Chapter 2**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Chapter 4**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Chapter 5**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Appendix R**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 5.3**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**NA**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**NA**

10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**NA**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 5.2**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**NA**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**NA**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**NA**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**Section 6.4**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**NA**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 6.6**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 6.6**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 1.4.2**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 6.6 and App J**

10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Appendix C**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Appendix C**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 6.6 and App G**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 6.6**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 1.4.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 1.4**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 1.4.3 and App C**

EVWD Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.2**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.4**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.4.3**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 7.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 1.6.1 and 7.2**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 7.1**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 7.2.1**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 7.1**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 7.3.1**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 7.3.2**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 7.3.4**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Sections 7.4, 7.4.2 and App L**

10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5 and App E	**Sections 7.4 through 7.4.3**
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 7.3.2**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 7.4.3**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 7.4.3**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**NA**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 7.3.3**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 7.6.9**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 7.6.2 and 7.6.9**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**NA**

10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	**Section 7.6.2**
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 7.6.9**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 7.6.7**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 7.6.8**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Secton 7.6.6**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 1.4.3**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**NA**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 7.6.5.1**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 7.6.5.2**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 7.5.5.2**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 7.6.5.2**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 7.6.5.4**

10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	**Section 7.6.5.3**
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 7.5.5.4**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 7.5.5**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 7.7.1**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 7.7**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 7.7.3 and 7.7.4**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**NA**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 7.7.2**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 7.7.3**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 7.8.1 and App H**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 7.8.9**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 7.8.8**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 7.8.5**

10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 7.8.4**
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 7.8.3**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 7.8.6**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 7.8.7 and App H**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 7.8.5**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 7.5**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**NA**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**NA**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 6.6**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 6.6**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 1.4.2**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 6.6 and App J**

	within which it provides water, no later than 60 days after the submission of the plan to DWR.			
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Appendix C**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Appendix C**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 6.6 and App G**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 6.6**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 1.4.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 1.4**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 1.4.3 and App C**

Loma Linda Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.2**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.4**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.4.3**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 8.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 1.6.1 and 8.1.2**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 8.1.1**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 8.2.1**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 8.1.1**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 8.2.1**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 8.2.2**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 8.2.4**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Sections 8.3.2**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and	Baselines and Targets	Chapter 5 and App E	**Sections 8.3 through 8.3.3**

	compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.			
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 8.3.5**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 8.3.3**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 8.3.3**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**NA**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 8.3.5**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 8.5.9**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 8.5.2 and 8.5.9**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**NA**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	**Section 8.5.2.1**

	groundwater pumped by the urban water supplier for the past five years			
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 8.5.8**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 8.5.6**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 8.5.8**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Secton 8.5.7**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 1.4.3**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**NA**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 8.5.5.1**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 8.5.5.2**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 8.5.5.2**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 8.5.5.2**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 8.5.5.3**
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description	System Supplies (Recycled Water)	Section 6.5.4	**Section 8.5.5.3**

	of the actual use of recycled water in comparison to uses previously projected.			
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 8.5.5.3**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 8.5.5.3**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 8.6.3**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 8.6.2**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 8.6.2**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**NA**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 8.6.1**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 8.6.3**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 8.7.1 and App H**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 8.7.9**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 8.7.8**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 8.7.5**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 8.7.5**

10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 8.7.6**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 8.7.6**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 8.7.7 and App H**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 8.7.5**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 8.4**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**NA**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**NA**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 6.6**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 6.6**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 1.4.2**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 6.6 and App J**

10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Appendix C**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Appendix C**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 6.6 and App G**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 6.6**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 1.4.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 1.4**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 1.4.3 and App C**

Redlands Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.2**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.4**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.4.3**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 9.2**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 1.6.1 and #**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 9.2.4**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 9.3.2**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 9.2.4**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 9.3.1**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 9.3.3**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 9.3.4**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Section 9.4.2**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along	Baselines and Targets	Chapter 5 and App E	**Section 9.4.2**

	with the bases for determining those estimates, including references to supporting data.			
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 9.4.2**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 9.4.2**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 9.4.2**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**NA**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 9.4.2**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 9.5.9**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 9.5.2**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**NA**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	**Section 9.5.2**

10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 9.5.7**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 9.5.8**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Section 9.5.6**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 1.4.3**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**NA**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 9.5.6**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 9.5.6**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 9.5.6**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 9.5.6**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 9.5.6**
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.4	**Section 9.5.5**

10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 9.5.6**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 9.5.6**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 9.6.4**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 9.6.2**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 9.6.2**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**NA**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 9.6**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 9.6.3**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 9.7.1**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 9.7.9**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 9.7.8**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 9.7.2**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 9.7.4**

10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 9.7.3**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 9.7.6**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 9.7.7**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 9.7.5**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 9.8**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**NA**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**NA**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 6.6**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 6.6**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 1.4.2**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 6.6 and App J**

10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Section 9.9.5**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Appendix C**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 6.6 and App G**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 6.6**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 1.4.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 1.4**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 1.4.3 and App C**

SBMWD Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.2**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.4**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.4.3**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 10.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 1.6.1 and 10.1.1**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 10.1**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 10.2.1**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 10.1**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 10.2.1**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 10.2.2**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 10.2.4**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Sections 10.3.2**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and	Baselines and Targets	Chapter 5 and App E	**Sections 10.3**

	compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.			**through 10.3.3**
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 10.3.3**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 10.3.3**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 10.3.3 – Did not adjust**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**NA**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 10.3.3**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 10.5.9**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 10.5.2 and 10.5.9**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**NA**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	**Section 10.5.2**

	groundwater pumped by the urban water supplier for the past five years			
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 10.5.9**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 10.5.7**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 10.5.8**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Secton 8.5.7**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 1.4.3**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**NA**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 10.5.5**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 10.5.5**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 10.5.5**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 10.5.5**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 10.5.5**
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description	System Supplies (Recycled Water)	Section 6.5.4	**Section 10.5.5.1**

	of the actual use of recycled water in comparison to uses previously projected.			
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 10.5.5.2**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 10.5.5.2**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 10.6.1**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 10.6.2**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 10.6.2**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**NA**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 10.6.1**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 10.6.2**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 10.7.1**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 10.7.9**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 10.7.8**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 10.7.5**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 10.7.4**

10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 10.7.3**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 10.7.6**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 10.7.7 and App H**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 10.7.5**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 10.4**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**NA**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**NA**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 6.6**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 6.6**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 1.4.2**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 6.6 and App J**

10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Appendix C**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Appendix C**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 6.6 and App G**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 6.6**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 1.4.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 1.4**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 1.4.3 and App C**

WVWD Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.2**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.4**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.4.3**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 11.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 1.6.1 and 11.1.1**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 11.1**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 11.2.1**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 11.1**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 11.2.1**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 11.2.2**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 11.2.4**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Sections 11.3**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and	Baselines and Targets	Chapter 5 and App E	**Sections 11.3**

	compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.			
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 11.3.7**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 11.3.7**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 11.3.7**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**NA**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 11.3.7**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 11.5.9**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 11.5.2 and 11.5.9**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**NA**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	**Section 11.5.2**

	groundwater pumped by the urban water supplier for the past five years			
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 11.5.9**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 11.5.7**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 11.5.8**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Secton 11.5.6**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 1.4.3**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**NA**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 11.5.5.1**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 11.5.5.2**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 11.5.5.2**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 11.5.5.3**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 11.5.5.3**
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description	System Supplies (Recycled Water)	Section 6.5.4	**Section 11.5.5.3**

	of the actual use of recycled water in comparison to uses previously projected.			
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 11.5.5.4**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 11.5.5.4**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 11.6.1**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 11.6.3**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 11.6.3**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**NA**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 11.6.2**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 11.6.3**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 11.7.1**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 11.7.9**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 11.7.8**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 11.7.2**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 11.7.4**

10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 11.7.3**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 11.7.6**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 11.7.7 and App H**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 11.7.5**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 11.4**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**NA**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**NA**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 6.6**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 6.6**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 1.4.2**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 6.6 and App J**

10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Appendix C**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Appendix C**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 6.6 and App G**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 6.6**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 1.4.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 1.4**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 1.4.3 and App C**

YVWD Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.2**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.4**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.4.3**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 12.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 12.2**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 12.1**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 12.3.1**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 12.1**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 12.3.1**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 12.3.2**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 12.3.4**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Section 12.4.2**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along	Baselines and Targets	Chapter 5 and App E	**Section 12.4.2**

	with the bases for determining those estimates, including references to supporting data.			
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 12.4.2**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 12.4.2**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 12.4.2**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**NA**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 12.4.2**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 12.6.1.1, 12.6.3, 12.6.8**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 12.6.2**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**NA**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	**Section 12.6.2**

	groundwater pumped by the urban water supplier for the past five years			
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 12.6.2**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 12.6.7**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 12.6.8**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Section 12.6.6**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 1.4.3**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**NA**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 12.6.5**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 12.6.5.2**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 12.6.5.2**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 12.6.5.1**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 12.6.5.3**
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description	System Supplies (Recycled Water)	Section 6.5.4	**Section 12.6.5.3**

	of the actual use of recycled water in comparison to uses previously projected.			
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 12.6.5.4**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 12.6.5.4**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 12.7.1**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 12.7.3 and 12.7.4**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 12.9**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**NA**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 12.6**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 12.9**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 12.8**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 12.8.9**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 12.8.8**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 12.8.2**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 12.8.4**

10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 12.8.3**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 12.8.6**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 12.8.7**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 12.8.5**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 12.5**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**NA**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**NA**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 6.6**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 6.6**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 1.4.2**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 6.6 and App J**

10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Appendix C**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Appendix C**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 6.6 and App G**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 6.6**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 1.4.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 1.4**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 1.4.3 and App C**

Colton Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.2**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.4**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.4.3**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 13.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 1.6.1 and 13.1.3**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 13.1.4**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 13.2.1**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 13.1.4**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 13.2.1**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 13.2.2**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 13.2.4**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Sections 13.3**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and	Baselines and Targets	Chapter 5 and App E	**Sections 13.3**

	compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.			
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 13.3.7**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 13.3.7**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 13.3.7**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**NA**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 13.3.7**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 13.5.10**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 13.5.2 and 13.5.10**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**NA**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	**Section 13.5.2**

	groundwater pumped by the urban water supplier for the past five years			
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 13.5.10**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 13.5.8**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 13.5.9**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Secton 13.5.7**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 1.4.3**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**NA**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 13.5.6.1**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 13.5.6.2**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 13.5.6.2**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 13.5.6.2**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 13.5.6.3**
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description	System Supplies (Recycled Water)	Section 6.5.4	**Section 13.5.6.3**

	of the actual use of recycled water in comparison to uses previously projected.			
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 13.5.6.3**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 13.5.6.3**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 13.6.3**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 13.6.2**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 13.6.2**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**NA**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 13.6.1**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 13.6.2**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 13.7.1**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 13.7.9**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 13.7.8**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 13.7.2**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 13.7.4**

10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 13.7.3**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 13.7.6**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 13.7.7 and App H**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 13.7.5**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 13.4**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**NA**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**NA**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 6.6**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 6.6**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 1.4.2**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 6.6 and App J**

10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Appendix C**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Appendix C**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 6.6 and App G**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 6.6**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 1.4.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 1.4**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 1.4.3 and App C**

Rialto Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.2**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.4**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.4.3**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 14.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 1.6.1 and 14.1.2**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 14.1.1**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 14.2.1**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 14.1.1**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 14.2.1**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 14.2.2**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 14.3**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Section 14.3**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and	Baselines and Targets	Chapter 5 and App E	**Section 14.3**

	compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.			
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 14.3.7**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 14.4.7**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 14.3.7**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**NA**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 14.3.7**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 14.6.13**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 14.6.2 and 14.6.13**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**NA**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	**Section 14.6.2**

	groundwater pumped by the urban water supplier for the past five years			**through 14.6.6**
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 14.6.13**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 14.6.11**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 14.6.16**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Secton 14.6.10**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 1.4.3**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**NA**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 14.6.9.1**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 14.6.9.2**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 14.6.9.2**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 14.6.9.3**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 14.6.9.4**
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description	System Supplies (Recycled Water)	Section 6.5.4	**Section 14.6.9.4**

	of the actual use of recycled water in comparison to uses previously projected.			
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 14.6.9.5**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 14.6.9.2**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 14.5.1**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 14.6.2**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 14.8**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**NA**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 14.5**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 14.8**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 14.7.1**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 14.7.9**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 14.7.8**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 14.7.2**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 14.7.4**

10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 14.7.3**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 14.7.6**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 14.7.7 and App H**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 14.7.5**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 14.5**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**NA**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**NA**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 6.6**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 6.6**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 1.4.2**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 6.6 and App J**

10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Appendix C**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Appendix C**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 6.6 and App G**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 6.6**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 1.4.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 1.4**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 1.4.3 and App C**

RHWC Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.2**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.4**
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	**Section 1.4.3**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 15.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 1.6.1 and 15.1.3**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 15.1.4**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 15.2.1**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Section 15.1.4**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 15.2.1**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 15.2.2**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 15.3**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Section 15.3**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and	Baselines and Targets	Chapter 5 and App E	**Section 15.3**

	compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.			
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 15.3.7**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 15.3.7**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 15.3.7**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**NA**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 15.3.7**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Section 15.6.9**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 15.6.2 and 15.6.9**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 2.2**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 2.3**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**NA**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	**Section 15.6.2**

	groundwater pumped by the urban water supplier for the past five years			
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Section 15.6.9**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 15.6.7**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 15.5.8**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Secton 15.6.6**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 1.4.3**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**NA**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 15.6.5.1**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 15.6.5.1**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 15.6.5.1**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 15.6.5.3**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 15.6.5.3**
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description	System Supplies (Recycled Water)	Section 6.5.4	**Section 15.6.5.3**

	of the actual use of recycled water in comparison to uses previously projected.			
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	**Section 15.6.5.3**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 15.6.5.3**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 15.7.3**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 15.7.2**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 15.7.2**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**NA**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 15.5**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 15.7.2**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 15.8.1**
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	**Section 15.8.9**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 15.8.8**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 15.8.2**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 15.8.4**

10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 15.8.3**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 15.8.6**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 15.8.7 and App H**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 15.8.5**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Section 15.5**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**NA**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**NA**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 6.6**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 6.6**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Section 1.4.2**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 6.6 and App J**

10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Appendix C**
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Appendix C**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 6.6 and App G**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 6.6**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 1.4.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 1.4**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 1.4.3 and App C**