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# 2020

## PART 2: LOCAL AGENCY UWMPs

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UPPER SANTA ANA RIVER WATERSHED

# INTEGRATED REGIONAL URBAN WATER MANAGEMENT PLAN

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YUCAIPA VALLEY WATER DISTRICT

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# 2020 IRUWMP

Part 2 Chapter 11

Yucaipa Valley Water  
District 2020 UWMP

**JUNE 30, 2021**

# TABLE OF CONTENTS

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List of Figures ..... iii

List of Tables ..... iv

1. Yucaipa Valley ..... 11-1

2. Water District ..... 11-1

    11.1 Introduction ..... 11-2

    11.2 Plan Preparation ..... 11-3

    11.3 System Description ..... 11-5

        11.3.1 General Description ..... 11-5

        11.3.2 Service Area Climate ..... 11-8

        11.3.3 Service Area Population and Demographics ..... 11-9

        11.3.4 Land Uses within Service Area ..... 11-11

    11.4 Water Use Characterization ..... 11-11

        11.4.1 Non-Potable Versus Potable Water Use ..... 11-11

        11.4.2 Past, Current, and Projected Water Use by Sector ..... 11-12

        11.4.3 Water Use for Lower Income Households ..... 11-16

        11.4.4 Drought Risk Assessment – Climate Change ..... 11-16

        11.4.5 Estimating Future Water Savings ..... 11-17

    11.5 SB X7-7 Baselines and Targets and 2020 Compliance ..... 11-18

        11.5.1 Baseline Water Use Calculation ..... 11-18

        11.5.2 Water Use Targets ..... 11-18

        11.5.3 2020 Compliance Daily Per-Capita Water Use (GPCD) ..... 11-21

    11.6 Water Supply Characterization ..... 11-23

        11.6.1 Water Supply Analysis Overview ..... 11-23

        11.6.2 Purchased or Imported Water ..... 11-23

        11.6.3 Groundwater ..... 11-24

        11.6.4 Surface Water ..... 11-27

        11.6.5 Stormwater ..... 11-28

        11.6.6 Wastewater and Recycled Water ..... 11-28

        11.6.7 Desalinated Water Opportunities ..... 11-35

        11.6.8 Water Exchanges and Transfers ..... 11-36

        11.6.9 Future Water Projects ..... 11-36

        11.6.10 Summary of Existing and Planned Sources of Water ..... 11-37

        11.6.11 Special Conditions ..... 11-41

**Table of Contents**

11.6.12 Energy Use ..... 11-41

11.7 Water Service Reliability and Drought Risk Assessment ..... 11-43

    11.7.1 Water Service Reliability Assessment ..... 11-43

    11.7.2 Drought Risk Assessment..... 11-46

11.8 Water Shortage Contingency Plan..... 11-49

11.9 Demand Management Measures ..... 11-53

11.10 Plan Adoption, Submittal, and Implementation..... 11-55

# LIST OF FIGURES

---

Figure 11-1. Yucaipa Valley Water District Service Area boundary (blue) and Sphere of Influence (red) ..... 11-6

Figure 11-2. Yucaipa Valley Water District Service Area ..... 11-7

Figure 11-3. Yucaipa Valley Water District potable and recycled water system boundaries .. 11-8

Figure 11-4. Map of the four basins: Yucaipa Basin, San Timoteo Basin, Beaumont Adjudicated Basin, and the San Bernardino Basin Area..... 11-24

Figure 11-5. Map of the Yucaipa Basin ..... 11-25

Figure 11-6. San Timoteo Groundwater Sustainability Agency Management Areas..... 11-26

# LIST OF TABLES

---

Table 11-1. DWR Table 2-1: Public Water System .....	11-2
Table 11-2. DWR Table 2-2: Plan Identification.....	11-3
Table 11-3. DWR Table 2-3: Supplier Identification.....	11-4
Table 11-4. DWR Table 2-4: Retail: Water Supplier Information Exchange .....	11-4
Table 11-5. Average climatic data for NOAA weather station 0407723 .....	11-9
Table 11-6. DWR Table 3-1: Retail: Population - Current and Projected.....	11-10
Table 11-7. DWR Table 4-1: Retail: Demands for Potable and Non-Potable Water - Actual	11-12
Table 11-8. DWR Table 4-2: Retail: Use for Potable and Non-Potable Water - Projected ...	11-14
Table 11-9. DWR Table 4-3: Retail: Total Water Use (Potable and Non-Potable) .....	11-15
Table 11-10. DWR Table 4-4: Retail: Last Five Years of Water Loss Audit Reporting.....	11-16
Table 11-11. DWR Table 4-5: Retail: Inclusion in Water Use Projections.....	11-18
Table 11-12. DWR Table 5-1: Baselines and Targets Summary From SB X7-7 Verification Form .....	11-20
Table 11-13. 2020 Population Calculation Method.....	11-21
Table 11-14. Adjustments Calculation Method .....	11-21
Table 11-15. DWR Table 5-2: 2020 Compliance From SB X7-7 2020 Compliance Form .....	11-22
Table 11-16. DWR Table 6-1: Retail: Groundwater Volume Pumped .....	11-27
Table 11-17. DWR Table 6-2: Retail: Wastewater Collected Within Service Area in 2020..	11-30
Table 11-18. DWR Table 6-3: Retail: Wastewater Treatment and Discharge within Service Area in 2020 .....	11-31
Table 11-19. DWR Table 6-4: Retail: Recycled Water Direct Beneficial Uses within Service Area .....	11-33
Table 11-20. DWR Table 6-5: Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual .....	11-34
Table 11-21. DWR Table 6-6: Retail: Methods to Expand Future Recycled Water Use .....	11-35
Table 11-22. DWR Table 6-7: Retail: Expected Future Water Supply Projects or Programs .	11-37
Table 11-23. DWR Table 6-8: Retail: Water Supplies — Actual .....	11-39
Table 11-24. DWR Table 6-9: Retail: Water Supplies — Projected.....	11-39
Table 11-25. DWR Table O-1A: Recommended Energy Use Reporting – Water Supply Process Approach.....	11-42
Table 11-26. DWR Table O-2: Recommended Energy reporting – Wastewater & Recycled Water.....	11-42
Table 11-27. DWR Table 7-1: Retail: Basis of Water Year Data (Reliability Assessment).....	11-45
Table 11-28. DWR Table 7-2: Retail: Normal Year Supply and Demand Comparison.....	11-46
Table 11-29. DWR Table 7-4: Retail: Multiple Dry Years Supply and Demand Comparison .	11-47
Table 11-30. DWR Table 7-5: Retail: Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635 (b).....	11-48
Table 11-31. DWR Table 8-1: Water Shortage Contingency Plan Levels .....	11-49

**Table of Contents**

Table 11-32. DWR Table 8-2: Demand Reduction Actions ..... 11-50  
Table 11-33. DWR Table 8-3: Supply Augmentation and Other Actions ..... 11-53  
Table 11-34. DWR Table 10-1: Retail: Notification to Cities and Counties ..... 11-55

# 11

## RETAIL URBAN WATER MANAGEMENT PLAN

# Yucaipa Valley Water District

**This chapter describes information specific to Yucaipa Valley Water District, its supplies, demands and water use efficiency programs. The information and analysis in this chapter is supplemental to the regional information presented in Part 1 of the 2020 IRUWMP and is provided to meet the Yucaipa Valley Water District’s reporting requirements for 2020 under the UWMP Act.<sup>1</sup>**

The Yucaipa Valley Water District (YVWD or District) service area covers approximately 40 square miles and serves water to a population of 51,558 people. Most of the water use within its service area is for single family and multi-family residential use but also includes some commercial, irrigation, and institutional use. YVWD utilizes groundwater, local surface water, imported water, and recycled water to meet the customer demands. Because of its continued recharge efforts and the increasing use of recycled water, YVWD anticipates success in meeting the needs of its population in the future even as the population continues to grow and the likelihood of severe droughts persist.

### IN THIS SECTION

- System Description
- Water Use and SBX7-7 Compliance
- Water Supply
- Water Service Reliability and Drought Risk Assessment
- Water Shortage Contingency Plan Summary
- Demand Management Measures
- Adoption, Submittal, and Implementation

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<sup>1</sup> This chapter was prepared by Yucaipa Valley Water District staff.



## 11.1 Introduction

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 11-1. DWR Table 2-1: Public Water System**

Submittal Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020 *
CA3610055	Yucaipa Valley Water District	13,582	11,345
TOTAL		13,582	11,345
* Units of measure - AF			

## 11.2 Plan Preparation

Yucaipa Valley Water District has collaborated with the retailers within the San Bernardino Valley Municipal Water District to prepare the 2020 Urban Water Management Plan (UWMP) while also integrating the Integrated Regional Waters Management Plan (IRWMP), collectively the Upper Santa Ana River Watershed Integrated Regional Urban Water Management Plan (IRUWMP).

**Table 11-2. DWR Table 2-2: Plan Identification**

Submittal Table 2-2: Plan Identification		
Select Only One	Type of Plan	Name of RUWMP or Regional Alliance if applicable (select from drop down list)
<input type="checkbox"/>	Individual UWMP	
	<input type="checkbox"/> Water Supplier is also a member of a RUWMP	
	<input type="checkbox"/> Water Supplier is also a member of a Regional Alliance	
<input checked="" type="checkbox"/>	Regional Urban Water Management Plan (RUWMP)	2020 Upper Santa Ana River Watershed Integrated Regional Urban Water Management Plan

**Table 11-3. DWR Table 2-3: Supplier Identification**

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
<input type="checkbox"/>	Supplier is a wholesaler
<input checked="" type="checkbox"/>	Supplier is a retailer
Fiscal or Calendar Year (select one)	
<input checked="" type="checkbox"/>	UWMP Tables are in calendar years
<input type="checkbox"/>	UWMP Tables are in fiscal years
Unit	AF
* Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.	
NOTES: Wholesale to Western Heights Mutual Water Company.	

**Table 11-4. DWR Table 2-4: Retail: Water Supplier Information Exchange**

Submittal Table 2-4 Retail: Water Supplier Information Exchange
The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name
San Bernardino Valley Municipal Water District
San Gorgonio Pass Water Agency

**Coordination with Other Agencies**

As mentioned above, YVWD is part of the Regional IRUWMP for the 2020 UWMP and IRWMP. On March 10, 2021 YVWD distributed a 60-day notice to additional partner agencies notifying each agency that YVWD will be reviewing the plan and considering amendments or changes to the plan. The notices were sent to Riverside and San Bernardino Counties along with several cities, agencies and associations.

## 11.3 System Description

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.

### 11.3.1 General Description

YVWD serves drinking water, wastewater and recycled water to its customers. YVWD serves approximately 14,440 drinking water connections through 234 miles of pipeline. There are 14,363 sewer connections and 695 recycled water connections. The sewer has 8.0 million gallons of capacity and the collection system extends 222 miles throughout YVWD's service area. YVWD's recycled water system continues to expand and currently serves 0.623 billion gallons of recycled water annually. Over 0.595 billion gallons of brine is discharged to the Inland Empire Brine Line which is then further treated and disposed of at the Orange County Sanitation District. The YVWD service area shown in Figure 11-1 and Figure 11-2 shown below, is different than the water system boundary shown in Figure 11-3 because YVWD is the wastewater provider for Western Heights and South Mesa Water Companies, but does not serve potable water to those areas.

Figure 11-1. Yucaipa Valley Water District Service Area boundary (blue) and Sphere of Influence (red)

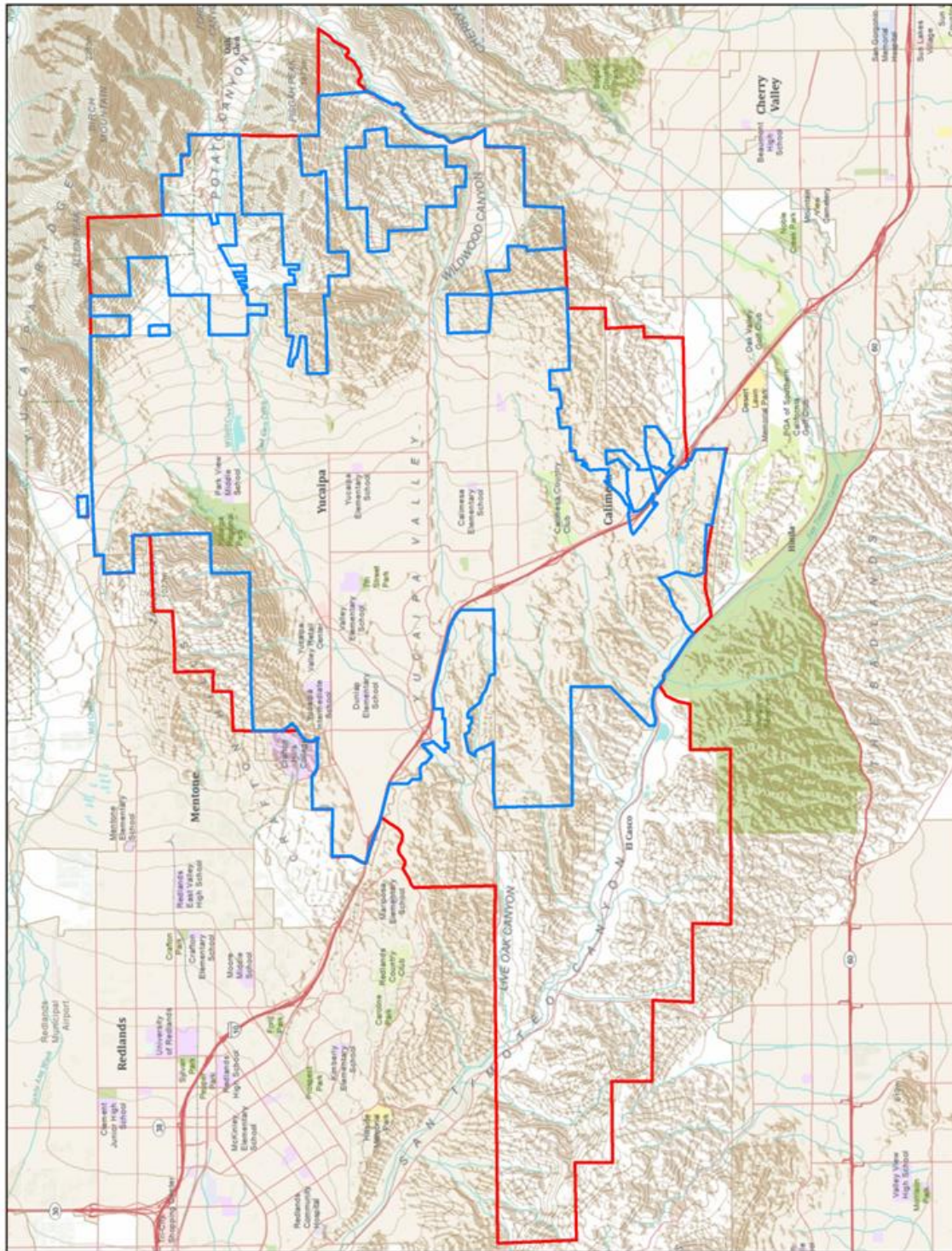


Figure 11-2. Yucaipa Valley Water District Service Area

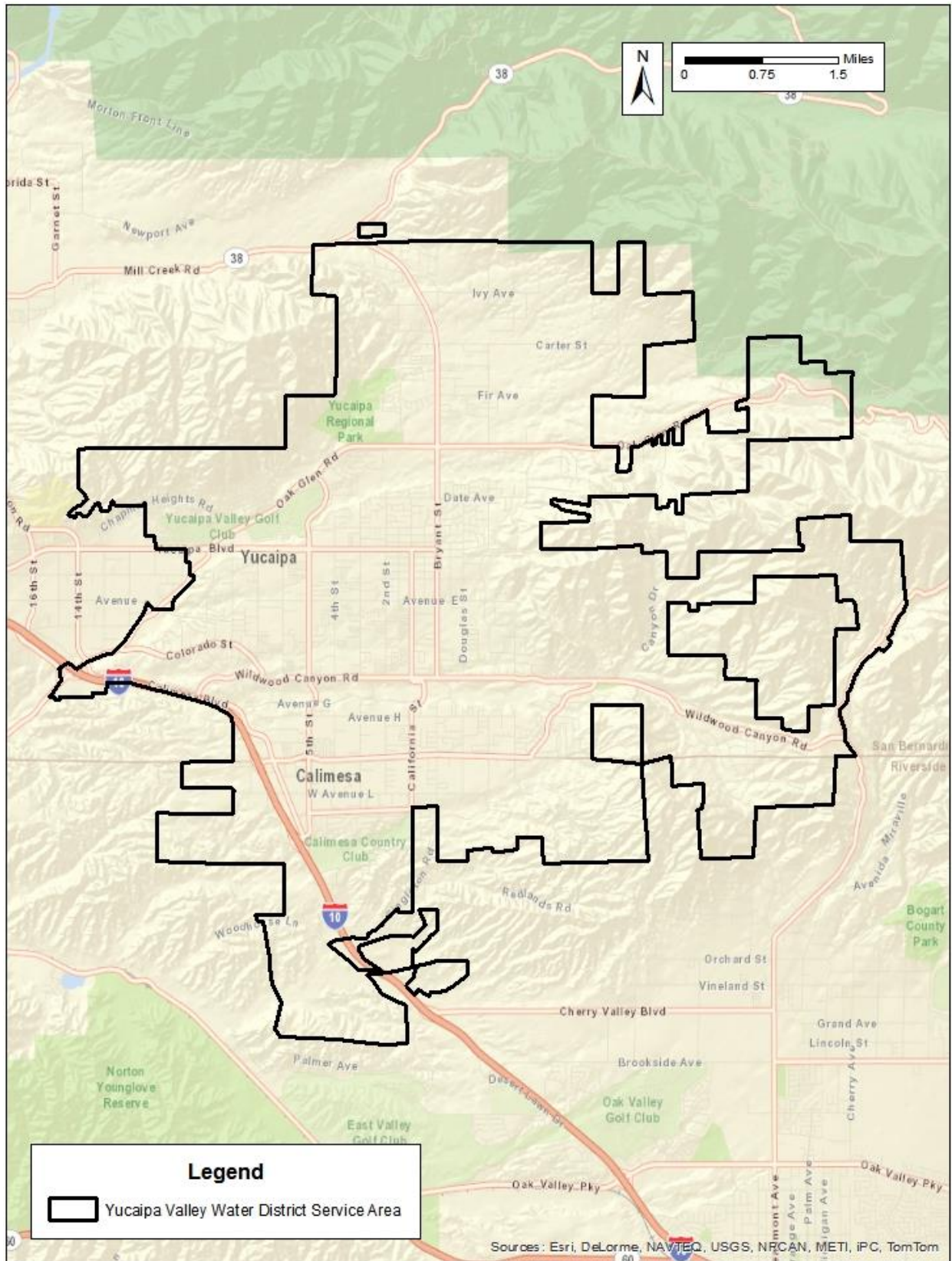
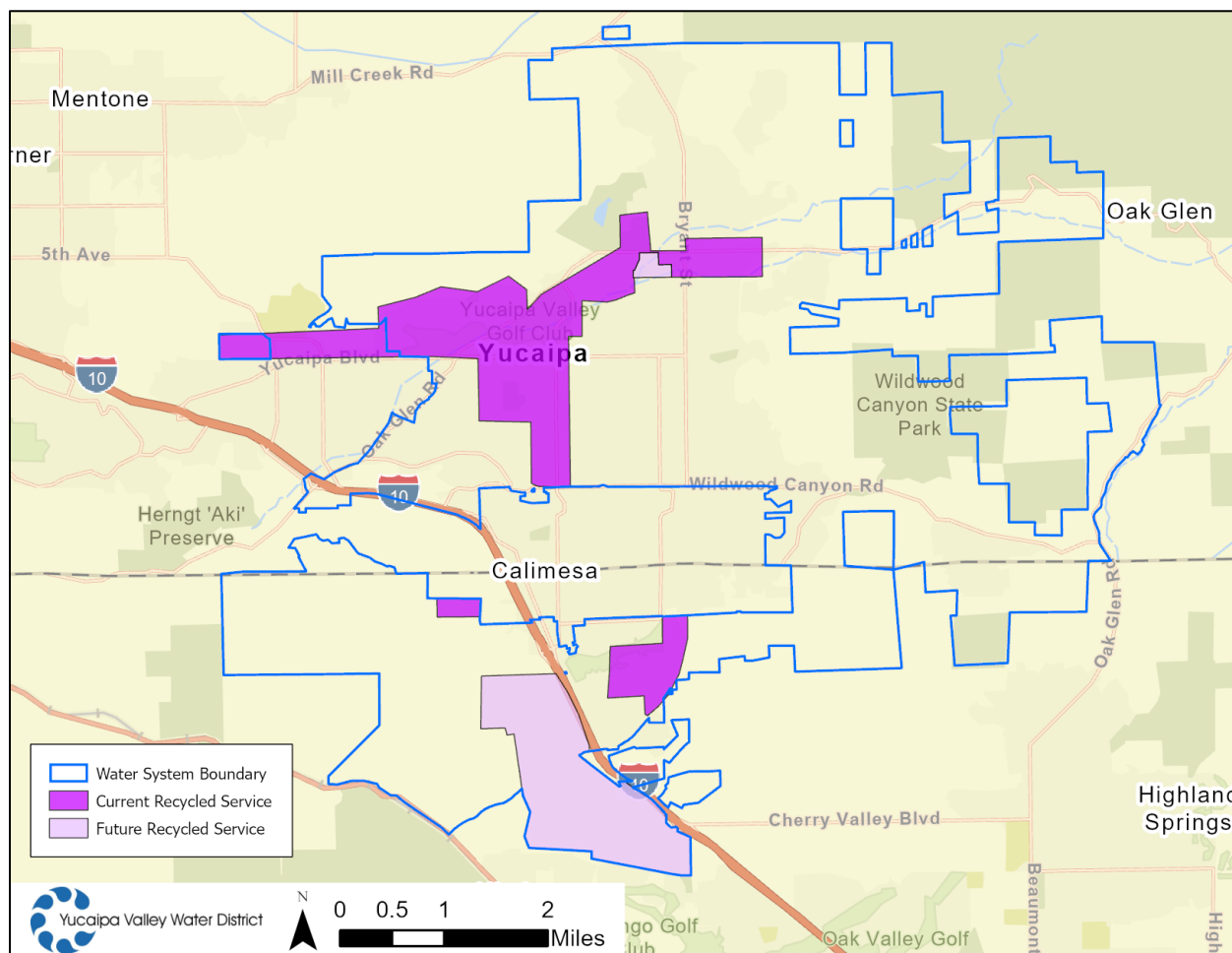


Figure 11-3. Yucaipa Valley Water District potable and recycled water system boundaries



### 11.3.2 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 78° and an average low of 49°. The record high for the area is 117° and the record low is 17°.

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 100°, 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 YVWD Table 11-5. 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).

As noted below, YVWD is located inland and experiences hot, dry summers and mild winters. Climate change has the potential to impact temperatures for the region, therefore it is important to plan for weather extremes when forecasting water reliability. In addition, the 2020 UWMP requires retailers to analyze potential climate change impacts. Impacts to climate change on supplies and reliability are further addressed in Section 4, 6 and 7.

**Table 11-5. Average climatic data for NOAA weather station 0407723**

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/>

### 11.3.3 Service Area Population and Demographics

YVWD has experienced significant growth in the last 20 years as with many areas in San Bernardino and Riverside County. Within the last 5 years Yucaipa and Calimesa's growth has slowly increased due to overall economic conditions across the United States. The estimated service area populations are shown in Table 11-6 for the existing service area of YVWD.



**11.3.3.1 Service Area Population**

To calculate the population that YVWD serves water to, the YVWD water system boundary in Figure 1c was used with census data to provide population estimates for 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 2020 was estimated using the number of water connections multiplied by number of people per household. The estimated population of Western Heights Mutual Water Company and South Mesa Mutual Water Company are not included in these calculations. A more detailed method of the 2020 population calculation is explained in Section 11.

**Table 11-6. DWR Table 3-1: Retail: Population - Current and Projected**

Submittal Table 3-1 Retail: Population - Current and Projected						
Population Served	2020	2025	2030	2035	2040	2045(opt)
	51,558	53,779	56,429	59,079	61,729	64,379

**11.3.3.2 Other Social, Economic and Demographic Factors**

YVWD categorizes its water customers based on the following categories (the percentages represent the proportionality of service connections as of March 31, 2021).

- Single Family Residential - 91.6%
- Multi-Family Residential - 3.51%
- 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%

### 11.3.4 Land Uses within Service Area

YVWD coordinates with local cities and counties regarding land use trends for the area. The YVWD boundary partially covers two cities, two counties, and two mutual water districts. This overlap requires extensive collaboration through various monthly meetings. Coordination with the localized land use authorities, Calimesa and Yucaipa, provide YVWD with detailed information on development project applications, redevelopment initiatives, and other information available to the local land use authority. YVWD Board members and staff actively engage in the various public meetings in the region in order to stay apprised of the land use trends.

The YVWD boundary encompass a variety of residential communities from large lot homes in the north and east portion of the district and smaller tract homes and mobile homes in the center of Yucaipa and Calimesa. Commercial development is present with commercial growth continuing the west side of the district and many portions in Calimesa. YVWD also has a large amount of open space and agriculture with the Crafton Hills and portions of Oak Glen and Wildwood State Park.

## 11.4 Water Use Characterization

YVWD utilizes groundwater, local surface water, state water project water and recycled water to meet the customer demands. Further discussion regarding YVWD's future water use based on past and current water use, combined with considerations of anticipated growth, new regulations, changing climate conditions, and trends in customer water use behaviors is included in this section. Each water use sector is evaluated in order to formulate the most accurate projections for YVWD's service area.

### 11.4.1 Non-Potable Versus Potable Water Use

YVWD does not supply non-potable water in the distribution system. The water supplied through the service area include potable water and recycled water. Recycled water use can be found in Table 11-18.

Demands for potable water in 2020 are shown in Table 11-7.

**Table 11-7. DWR Table 4-1: Retail: Demands for Potable and Non-Potable Water – Actual**

Submittal Table 4-1 Retail: Demands for Potable and Non-Potable Water - Actual			
Use Type	2020 Actual		
<b>Drop down list</b> May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume (AF)
Sales/Transfers/Exchanges to other Suppliers	Western Heights	Drinking Water	460
Multi-Family		Drinking Water	1,141
Single Family		Drinking Water	8,483
Commercial		Drinking Water	285
Landscape		Drinking Water	291
Industrial		Drinking Water	36
Institutional/Governmental		Drinking Water	332
Other	Fire Service	Drinking Water	1
Other	Construction Water	Drinking Water	34
Losses	All non-revenue water	Drinking Water	281
TOTAL			11,345

## 11.4.2 Past, Current, and Projected Water Use by Sector

YVWD's past water use from 2016 – 2019 is illustrated in the table below.

### 11.4.2.1 Distribution System Water Loss

YVWD was a member of the California Urban Water Conservation Council for several years. The AWWA water loss audit forms were submitted annually since 2010. Information on past water loss reports can be found in Table 11-10 below. YVWD has incorporated improvements to water loss following each water audit. For example, the district implements a leak detection program each year. In addition, meter testing and calibration has been incorporated on a regular basis in order to define meter inaccuracies.

YVWD is committed to managing system water losses to reduce water waste and will endeavor to meet the future water loss performance standards that is being developed by the State Water Resources Control Board.

#### Nonrevenue water identified by YVWD

- 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 all district meters to AMI meters in order to reduce meter inaccuracies.
- 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.

#### 11.4.2.2 Current Water Use

Current water use and level of treatment of the water supply is defined in Table 11-7 above. A total of 11,345 AF of water was consumed in 2020.

#### 11.4.2.3 Projected Water Use

YVWD calculates water use projections by calculating actual 2020 water use and projecting planned development projects estimates to extrapolate annual projections to 2045. For the 2020 UWMP, water use projections also considered codes, ordinances and land use plans in order to refine the estimates.

The following resolutions and ordinances represent YVWD standards and land-use plan considerations to the projections of future water demands.

**Resolution No. 11-2008** – A Strategic Plan for a Sustainable Future. The Strategic plan makes known the uncertainty, unreliability and unpredictable nature of imported water supplies while providing a route for navigating the future to protect the interests of current and future customers.

**Ordinance 58-2018** – Adopting New Rules and Regulations for Recycled Water Use and Distribution – YVWD utilizes local water supplies and imported water for domestic, agricultural and industrial uses. The development and utilization of recycled water results in a direct reduction in the amount of imported water needed by the District. The recycled water program has multiple benefits which include the conservation of groundwater and surface water that would otherwise be used for recycled irrigation use; provides YVWD with a reliable and drought-proof water supply source; and provides an alternative to wastewater discharge into tributaries of the Sana Ana River.

**Ordinance 60-2019** – New Water Conservation Rules and Regulations to Reduce Water Shortage and Water Waste – YVWD adopted an updated Water Conservation Ordinance with the goal of conserving groundwater and surface waters; establishing clear water conservation

measures for customers; and aligns with recently passed State legislation and supports the concepts presented in Making Water Conservation a California Way of Life.

**Table 11-8. DWR Table 4-2: Retail: Use for Potable and Non-Potable Water – Projected**

Submittal Table 4-2 Retail: Use for Potable and Non-Potable Water - Projected						
Use Type	Additional Description (as needed)	Projected Water Use*				
		<i>Report To the Extent that Records are Available</i>				
<b><u>Drop down list</u></b> May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		2025	2030	2035	2040	2045 (opt)
Single Family		8,018	7,537	7,085	6,660	6,260
Multi-Family		1,068	1,004	944	887	834
Commercial		264	248	233	219	206
Other	Construction Water	32	30	28	27	25
Industrial		34	32	30	28	26
Institutional/Governmental		297	279	262	246	232
Landscape		274	258	242	228	214
Sales/Transfers/Exchanges to other Suppliers	Western Heights	2,000	2,000	2,000	2,000	2,000
Losses	non-revenue water	671	638	606	577	549
<b>TOTAL</b>		<b>12,658</b>	<b>12,026</b>	<b>11,430</b>	<b>10,872</b>	<b>10,346</b>
*Acre Feet						

**Table 11-9. DWR Table 4-3: Retail: Total Water Use (Potable and Non-Potable)**

Submittal Table 4-3 Retail: Total Water Use (Potable and Non-Potable)						
	2020	2025	2030	2035	2040	2045 (opt)
Potable Water, Raw, Other Non-potable <i>From Tables 4-1R and 4-2 R</i>	11,345	12,658	12,026	11,430	10,872	10,346
Recycled Water Demand <i>From Table 6-4</i>	1,374	3,630	3,800	4,000	4,200	4,400
Optional Deduction of Recycled Water Put Into Long-Term Storage						
<b>TOTAL WATER USE</b>	<b>12,718</b>	<b>16,288</b>	<b>15,826</b>	<b>15,430</b>	<b>15,072</b>	<b>14,746</b>

### Distribution System Water Loss

YVWD has an active water loss control program and has performed a water loss audit using the AWWA Manual 36 for calendar year 2019. The 2019 AWWA Water Audit Reporting Worksheet is included as Part 4 Appendix K-8.

Based on the results of the 2019 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 to improve the efficiency and effectiveness of the operations.

The AWWA water audit methodology has been performed annually in preparation of the 2020 UWMP document that requires reporting information for 2016, 2017, 2018, and 2019.

**Table 11-10. DWR Table 4-4: Retail: Last Five Years of Water Loss Audit Reporting**

Submittal Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date	Volume of Water Loss <sup>1,2</sup>
01/2015	580
01/2016	916
01/2017	316.77
01/2018	1,532.595
01/2019	507.501
<sup>1</sup> Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet. <sup>2</sup> Units of measure AF	

### 11.4.3 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.

YVWD reviewed the most recent General Plan the City of Yucaipa and the City of Calimesa 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. These demands are included in the projections presented throughout this report.

YVWD will not deny or put unreasonable conditions for water services or reduce the number of services applied for by a proposed development that includes housing units affordable to lower income households unless one of the following occurs. The conditions below apply to all applicants and developers: 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 or the applicant has failed to agree to reasonable terms and conditions relating to the provision of services.

### 11.4.4 Drought Risk Assessment – Climate Change

California droughts are expected to increase due to climate change. California's Fourth Climate Change Assessment's Statewide Summary Report states the 2012-2016 drought provided a strong example of how recent episodes of unusually warm temperatures and low snowpack can diminish water availability to California's water conveyance system which supply a portion of water to Southern California water retailers. YVWD relies on a portion of imported water. This

source of water supply can be more difficult to rely on due to the expectations of climate change impacts. YVWD has recharged an additional 28,783 acre feet of water into the Wilson Creek Basins in order to prepare for future drought due to climate change. YVWD has been addressing climate change by ensuring local supplies are robust and reliable for future demands. Purchasing additional State Water Project Water during wet cycles and recharging the surplus water into local groundwater basins has increased the groundwater levels in the Yucaipa Basin over 100 feet. In addition, the expansion of the recycled water program will also provide a drought proof source of water for recycled water users.

### 11.4.5 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-plumbed residential developments; and
- Projections for each type of customer classification served by YVWD.

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. This will be done by participating in the Landscape Area Measurement Project required by the Department of Water Resources.

Recent drought regulations have introduced significant changes in water consumption patterns, and there is considerable uncertainty as to how demands will change in the future if the drought subsides. However, YVWD has quantified passive savings for this UWMP. Even as the population continues to grow, YVWD does expect to see an overall decrease in potable water use due to conservation and increase recycled use.



**Table 11-11. DWR Table 4-5: Retail: Inclusion in Water Use Projections**

Submittal Table 4-5 Retail Only: Inclusion in Water Use Projections	
<b>Are Future Water Savings Included in Projections?</b> (Refer to Appendix K of UWMP Guidebook) <i>Drop down list (y/n)</i>	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	Section 4.2.6
<b>Are Lower Income Residential Demands Included In Projections?</b> <i>Drop down list (y/n)</i>	Yes

## 11.5 SB X7-7 Baselines and Targets and 2020 Compliance

An urban retail water supplier was required to set a 2020 water use target (herein called the Compliance Water Use Target). YVWD had previously calculated baseline water use and water use targets in the 2015 RUWMP using 2010 census data in the calculation of service area, but is recalculating the baseline due to an error in the original calculation. The error was due to including a portion of the YVWD service area that receives sewer service from YVWD, but water service from another retailer. Including this part of the service area in the calculation artificially decreased YVWD’s baseline and target GPCD. Once the error was recognized, YVWD staff confirmed with Gwen Huff of DWR that a recalculation of the baseline and target GPCD was necessary. The SB X7-7 Verification Form was recompleted and is included in this Plan.

### 11.5.1 Baseline Water Use Calculation

Years 2000 to 2009 have been selected for calculation of the 10-year base period, while years 2005 to 2009 have been selected for the calculation of the 5-year base period.

Historical population for the baseline periods was calculated by using the DWR population tool.

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 286 GPCD; the 5-year is 279 GPCD.

### 11.5.2 Water Use 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 began with the 2010 UWMP.

An urban retail water supplier was required to 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 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, the target for 2015, 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.

**Table 11-12. DWR Table 5-1: Baselines and Targets Summary From SB X7-7 Verification Form**

Submittal Table 5-1 Baselines and Targets Summary From SB X7-7 Verification Form				
<i>Retail Supplier or Regional Alliance Only</i>				
Baseline Period	Start Year*	End Year *	Average Baseline GPCD*	Confirmed 2020 Target*
10-15 year	2000	2009	286	229
5 Year	2005	2009	279	
*All cells in this table should be populated manually from the supplier's SBX7-7 Verification Form and reported in Gallons per Capita per Day (GPCD)				
NOTES: YVWD adjusted the 2020 Target GPCD due to adjustment to the District boundaries. The 2015 GPCD had inadvertently included population that was within YVWD's service area but sewer service only therefore the population should have not been included in the GPCD calculations for 2015.				

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 229 GPCD, the interim Water Use Target is 258 GPCD. This GPCD target has been adjusted in the 2020 UWMP due to the recalculation of the population data.

### 11.5.3 2020 Compliance Daily Per-Capita Water Use (GPCD)

#### 2020 Population Estimate

To estimate the 2020 population in the YVWD service area, the number of single and multi-family service connections was used to determine the number of dwelling units. The dwelling unit numbers were then multiplied by the Persons per Household by City number that is found on the Census website ([www.census.gov/quickfacts/yucaipacitycalifornia](http://www.census.gov/quickfacts/yucaipacitycalifornia) and [www.census.gov/quickfacts/calimesacitycalifornia](http://www.census.gov/quickfacts/calimesacitycalifornia)).

**Table 11-13. 2020 Population Calculation Method**

CITY	YVWD SINGLE FAMILY CONNECTIONS	YVWD MULTI-FAMILY CONNECTIONS	MULTI-FAMILY DWELLING UNITS	TOTAL NUMBER OF DWELLING UNITS	PERSONS PER HOUSEHOLD BY CITY (2015-2019)	POPULATION SERVED
Yucaipa	10,558	475	5,147	15,705	2.92	45,859
Calimesa	1,979	6	124	2,103	2.71	5,699
Total:						51,558

This 2020 population estimate was similar but determined to be more accurate than the 2020 population estimate provided by the DWR Population Tool (49,561 people).

#### Adjustments

The El Dorado Fire that occurred in and around the YVWD service area from September 5, 2020 to November 16, 2020 caused an increase in water usage due to firefighting. The use was unmetered but can be estimated by comparing the water produced during those months in 2020 to the average water produced during those months for the previous three years.

**Table 11-14. Adjustments Calculation Method**

YEAR	WATER PRODUCED SEPTEMBER-NOVEMBER (AF)
Average 2016-2019	3065.7
2020	3193.0
Additional Water Produced in 2020:	127.3

An additional 127.3 AF of water was produced from September-November in 2020 which translates to about 2 GPCD.

**Table 11-15. DWR Table 5-2: 2020 Compliance From SB X7-7 2020 Compliance Form**

Submittal Table 5-2: 2020 Compliance from SB X7-7 2020 Compliance Form <i>Retail Supplier or Regional Alliance Only</i>				
2020 GPCD			2020 Confirmed Target GPCD*	Did Supplier Achieve Targeted Reduction for 2020? Y/N
Actual 2020 GPCD*	2020 TOTAL Adjustments*	Adjusted 2020 GPCD* (Adjusted if applicable)		
188	2	186	229	Y
*All cells in this table should be populated manually from the supplier's SBX7-7 2020 Compliance Form and reported in Gallons per Capita per Day (GPCD)				

YVWD has complied with its 2020 Confirmed Target GPCD and surpassed it by 43 GPCD.

## 11.6 Water Supply Characterization

### 11.6.1 Water Supply Analysis Overview

YVWD relies on three primary water resources to meet annual drinking water demands: groundwater resources, imported water resources, and local surface water resources. YVWD's drinking water supply consists primarily of groundwater pumped from 17 wells located throughout the YVWD service area. In 2020, these wells provide about 62.7 percent of the total drinking water supply. Imported water treated at the Yucaipa Valley Regional Water Filtration Facility (YVWRFF) provided 35.8 percent of the drinking water supply. Surface water treated at the Oak Glen Surface Water Treatment Plant provided the remaining 1.5 percent of the drinking water supply. In addition to the drinking water supplies, YVWD produces recycled water at the Wochholz Regional Water Recycling Facility (WRWRF). Also added to the recycled distribution system is the microfiltration backwash produced at YVWRFF. The combined volume from these two water sources produced enough recycled water to meet 16.5 percent of YVWD's total water demand in 2020, decreasing the potable water use by 2,234.48 AF.

### 11.6.2 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 Geronio Pass Water Agency (SGPWA), for the Riverside County portion of the service area. In 2000, imported water resources were not utilized to meet the water demands of the Yucaipa Valley Water District. By 2020, this resource supplied 35.8% of drinking water demands.

The two State Water Contractors convey purchased water 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.

The SBVMWD 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. This water comes from the Sacramento San Joaquin Delta.

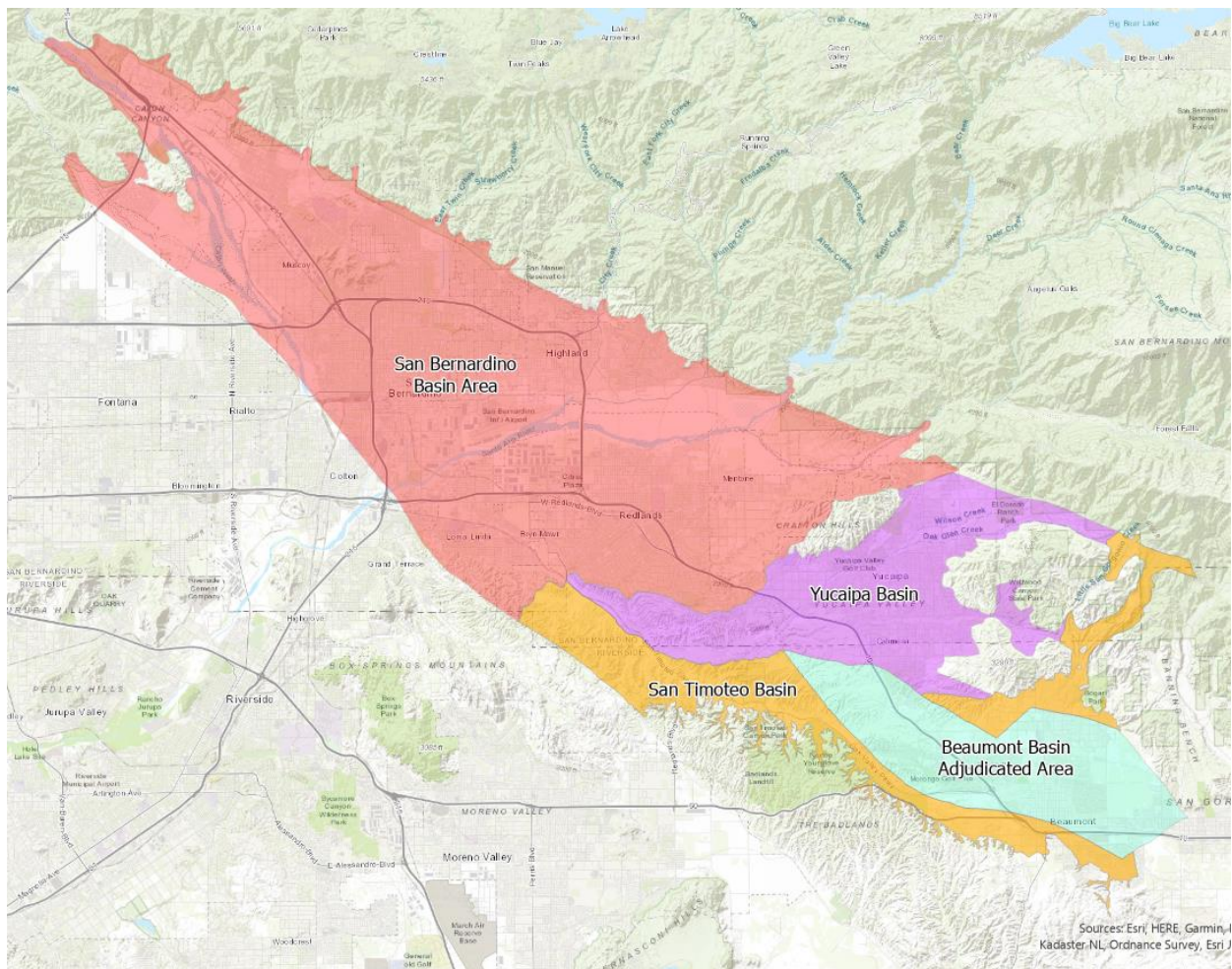
The SGPWA has an entitlement to 17,300 AFY of SWP water that is used for both direct deliveries to treatment plants and artificial recharge of the groundwater basins. SGPWA also purchases other available water to meet retailer demands.

There are no contracts between YVWD and the two wholesale agencies; however, each have resolutions that set forth the rates and rules for water sales and deliveries. SBVMWD's Resolution No. 888, titled "San Bernardino Valley Municipal Water District Rules, Regulations, and Rates for the Sale and Delivery of Water," became effective on January 1, 2003. SGPWA's Resolution No. 2019-03, titled "A Resolution of the San Geronio Pass Water Agency Adopting an Increased Rate for Wholesale Water Delivery," which became effective April 1, 2019.

### 11.6.3 Groundwater

YVWD has traditionally met the bulk of service area customer needs from groundwater using groundwater extraction wells. Since about 1970 and especially during the 1990’s, the widespread 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.

**Figure 11-4. Map of the four basins: Yucaipa Basin, San Timoteo Basin, Beaumont Adjudicated Basin, and the San Bernardino Basin Area.**

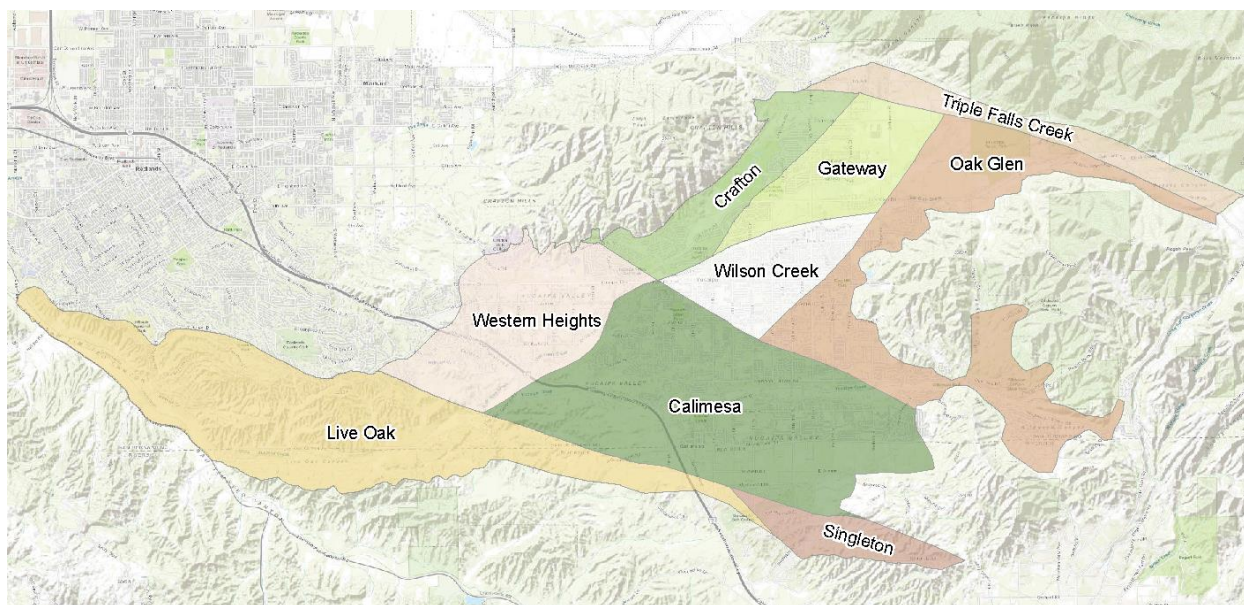


#### 11.6.3.1 Yucaipa Groundwater Basin

In response to the Sustainable Groundwater Management Act (SGMA), the Yucaipa Sustainable Groundwater Management Agency (Yucaipa SGMA) was formed in 2017 by a Memorandum of Agreement between the following local water purveyors, municipalities, and regional water agencies: City of Redlands, City of Yucaipa, SBVMWD, SGPWA, South Mesa

Water Company, South Mountain Water Company, Western Heights Water Company, and YVWD. DWR identified the Yucaipa Basin as a high-priority basin; SGMA stipulates that a Groundwater Sustainability Plan (GSP) must be adopted by medium and high priority basins by 2022. Because of the several faults in the Yucaipa Basin it is further subdivided into several subbasins including the Calimesa, Crafton, Gateway, Live Oak, Oak Glen, Singleton, Triple Falls Creek, Western Heights, and Wilson Subbasins. The Yucaipa SGMA has a working draft GSP and is expecting to have a final draft completed by the end of 2021. The GSP will outline the sustainable yield of the basin that is divided into four Management Areas which have been based on a combination of the hydrogeology and location of purveyors' wells. Each Management Area will have individual sustainability criteria to monitor and avoid undesirable results.

**Figure 11-5. Map of the Yucaipa Basin**

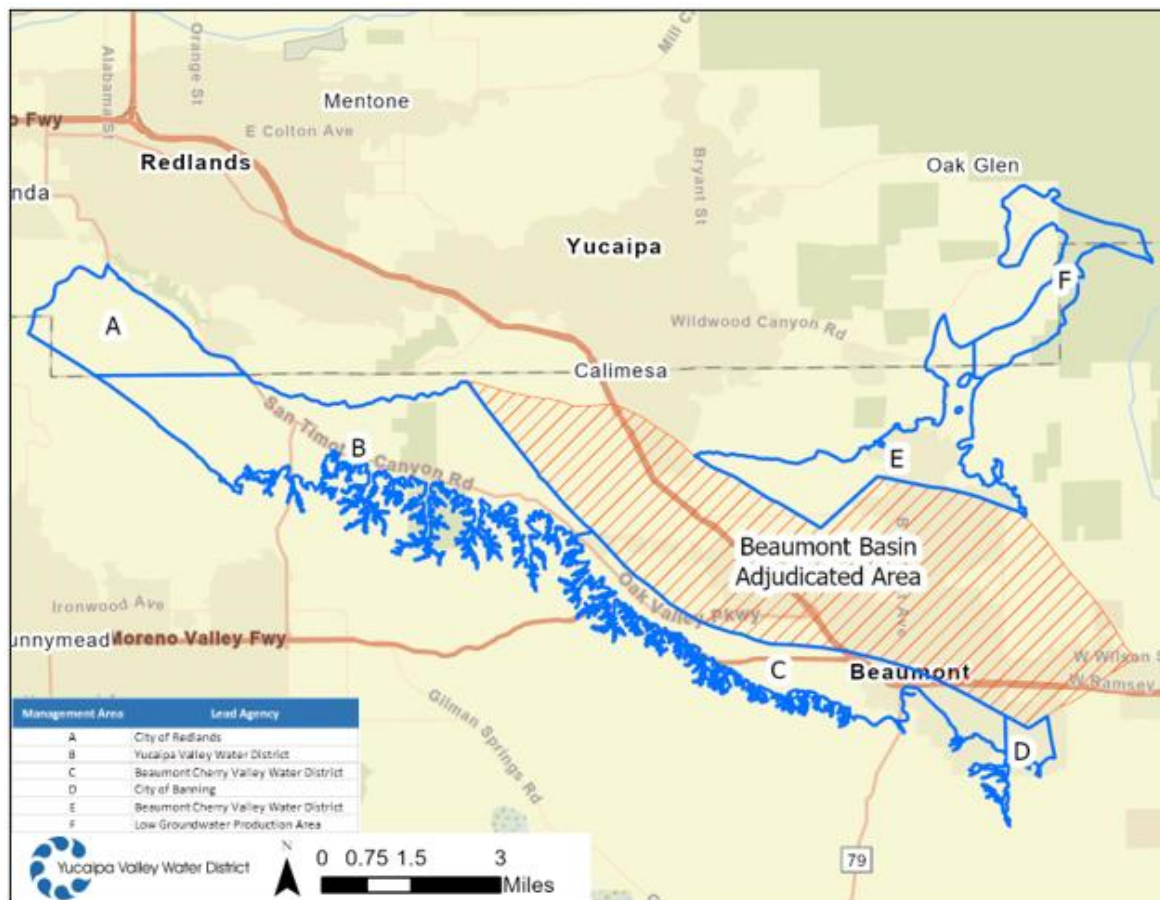


### 11.6.3.2 San Timoteo Groundwater Basin

San Timoteo Groundwater Sustainability Agency (GSA) is a low priority basin as reprioritized by the Department of Water Resources in 2019. The San Timoteo GSA is comprised of the City of Banning, Beaumont Cherry Valley Water District, City of Redlands and Yucaipa Valley Water District. It was agreed by the Parties of the San Timoteo GSA to establish Management Areas for the GSA for each agency's respective boundaries. Each agency agrees to work in good faith and coordinate all activities to carry out the purposes of the Memorandum of Agreement in implementing the policy, purposes, and requirements of SGMA within the boundaries of the San Timoteo GSA. The management areas are defined in the map below.



Figure 11-6. San Timoteo Groundwater Sustainability Agency Management Areas



**Beaumont Adjudicated Basin**

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 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. The adjudication of the Beaumont Basin has defined overlying and appropriator pumping rights and allows for supplemental water to be stored and recovered from the basin.

**11.6.3.3 San Bernardino Basin**

YVWD has one well located in the eastern most part of the Basin adjacent to the Yucaipa Basin. This well has produced an average of 135 AF per year from 2016 through 2020.

**11.6.3.4 Past Five Years**

YVWD's historical production for the past five years is shown in Table 11-16.

**Table 11-16. DWR Table 6-1: Retail: Groundwater Volume Pumped**

Submittal Table 6-1 Retail: Groundwater Volume Pumped						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
<input type="checkbox"/>	All or part of the groundwater described below is desalinated.					
Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2016*	2017*	2018*	2019*	2020*
Alluvial Basin	Yucaipa Basin; 8-002.07	4,428.66	3,303.83	4,949.14	4,173.12	5,575.22
Alluvial Basin	Beaumont Adjudicated Basin	4.58	0.12	191.2	528.63	1,407.72
Alluvial Basin	Yupper Santa Ana Valley; 8-002.06; Bunker Hill, San Bernardino Basin	161.62	109.76	177.7	91.56	133.16
Alluvial Basin	San Timoteo Basin; 8-002.08	0	0	0	0	0
<b>TOTAL</b>		4,595	3,414	5,318	4,793	7,116
<b>* Units of measure AF</b>						
NOTES: Pisgah Peak wells and others just outside Yucaipa Basin are counted in the Yucaipa Basin area.						

### 11.6.4 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 occurs 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 2020, local surface water supplies provided 1.5% of the total water demands of YVWD.

### **11.6.5 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.

### **11.6.6 Wastewater and Recycled Water**

In addition to serving drinking water, Yucaipa Valley Water District also owns and operates the Wochholz Regional Water Recycled Facility (WRWRF). This facility treats wastewater collected from the YVWD service area and from Western Heights Mutual Water Company and South Mesa Mutual Water Company service areas with the exception of a few small pockets where residents depend on their septic systems.

The WRWRF produces a high-quality, tertiary treated recycled water that is used as a non-potable source of water within the YVWD service area. In addition to the recycled water produced at WRWRF, non-potable water which is added to the recycled distribution system is produced at the YVRWFF. This non-potable water is produced as a by-product of backwashing the drinking water microfilters.

The WRWRF, which has a treatment capacity of 8 million gallons a day, 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 extended a brineline to dispose of the salts removed by the treatment system. The Yucaipa Valley Brineline is a 15-mile pipeline that connects 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.

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.

**Table 11-17. DWR Table 6-2: Retail: Wastewater Collected Within Service Area in 2020**

Table 6-2 Retail: Wastewater Collected Within Service Area in 2020						
<input type="checkbox"/>	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2015 service area covered by wastewater collection system <i>(optional)</i>					
	Percentage of 2015 service area population covered by wastewater collection system <i>(optional)</i>					
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2020 *	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional) Drop Down List</i>
Yucaipa Valley Water District	Metered	4,237	Yucaipa Valley Water District	WRWRF	Yes	No
Total Wastewater Collected from Service Area in 2020:		4,237				
<b>* Units of measure AF</b>						

**Table 11-18. DWR Table 6-3: Retail: Wastewater Treatment and Discharge within Service Area in 2020**

Submittal Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2020											
<input type="checkbox"/> No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.											
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional) 2	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area? <i>Drop down list</i>	Treatment Level <i>Drop down list</i>	2020 volumes <sup>1</sup>				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area <sup>3</sup>	Recycled Outside of Service Area	Instream Flow Permit Requirement
Wochholz Regional Water Recycling Facility	San Timoteo Creek	Creek; Upper tributary to the Santa Ana Watershed	CA 0105619	River or creek outfall	No	Tertiary	4,237	1,677	1,280	0	1,792
						<b>Total</b>	4,237	1,677	1,280	0	1,792

### 11.6.6.1 Recycled Water System Description

YVWD's existing recycled water system went into operation in 2002. The system currently includes 22 miles of pipeline, approximately 460 service connections, and 5 reservoirs capable of storing 12 million gallons (36.8 AF) of water.

Due to an increasing demand of recycled water, YVWD will continue expanding the recycled water system. YVWD will be constructing a Regional Recycled Water Conveyance System to the 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 residing within the newly developed dual-plumbed community in the City of Calimesa.

### 11.6.6.2 Potential, Current, and Projected Recycled Water Uses

YVWD has an extensive recycled water program. 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 about 16 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.

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 11-19. DWR Table 6-4: Retail: Recycled Water Direct Beneficial Uses within Service Area**

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area										
<input type="checkbox"/> Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.										
Name of Supplier Producing (Treating) the Recycled Water:		Yucaipa Valley Water District								
Name of Supplier Operating the Recycled Water Distribution System:		Yucaipa Valley Water District								
Supplemental Water Added in 2020 (volume) <i>Include units</i>		953.9 AF								
Source of 2020 Supplemental Water		Filtered MF Backwash from the Yucaipa Valley Regional Water Filtration Facility.								
Beneficial Use Type <i>Insert additional rows if needed.</i>	Potential Beneficial Uses of Recycled Water (Describe)	Amount of Potential Uses of Recycled Water (Quantity) <i>Include volume units<sup>1</sup></i>	General Description of 2020 Uses	Level of Treatment <i>Drop down list</i>	2020 <sup>1</sup>	2025 <sup>1</sup>	2030 <sup>1</sup>	2035 <sup>1</sup>	2040 <sup>1</sup>	2045 <sup>1</sup> (opt)
Agricultural irrigation				Tertiary	22	25	25	25	25	25
Landscape irrigation (exc golf courses)			meridians and parks	Tertiary	1,026	1,250	1,500	2,000	2,300	2,600
Golf course irrigation				Tertiary	300	300	300	300	300	300
Commercial use				Tertiary	14	20	25	30	35	40
Industrial use										
Geothermal and other energy production										
Seawater intrusion barrier										
Recreational impoundment						10	10	10	10	10
Wetlands or wildlife habitat										
Groundwater recharge (IPR)	Beaumont Adjudicated Basin Recharge					2,025	1,940	1,635	1,530	1,425
Reservoir water augmentation (IPR)										
Direct potable reuse										
Other (Description Required)			construction water	Tertiary	12					
<b>Total:</b>					<b>1,374</b>	<b>3,630</b>	<b>3,800</b>	<b>4,000</b>	<b>4,200</b>	<b>4,400</b>
<b>2020 Internal Reuse</b>					<b>789</b>					

<sup>1</sup> Units of measure - AF



**Table 11-20. DWR Table 6-5: Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual**

Submittal Table 6-5 Retail: 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual		
<input type="checkbox"/>	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.	
Beneficial Use Type	2015 Projection for 2020 <sup>1</sup>	2020 Actual Use <sup>1</sup>
Agricultural irrigation		22
Landscape irrigation (exc golf courses)	1,651	1,026
Golf course irrigation		300
Commercial use		14
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)	2,828	
Reservoir water augmentation (IPR)		
Direct potable reuse		
Other (Description Required)	Construction water	12
<b>Total</b>	<b>4,479</b>	<b>1,374</b>
<sup>1</sup> Units of measure - AF		
NOTE: IPR is an ongoing effort.		

### 11.6.6.3 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 11-21. DWR Table 6-6: Retail: Methods to Expand Future Recycled Water Use**

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
<input type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use *
Dual-plumbing of new homes	YVWD resolution requiring front and backyard irrigation with recycled water adopted in 2008	2020	2,000
Recycled ASR	Injection/recharge	2022	2,500
Total			4,500
Units of Measurement - Acre Feet			

### 11.6.7 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, 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.

## 11.6.8 Water Exchanges and Transfers

YVWD's acutely aware of possible water shortage conditions in the area and is mitigating potential shortages in its service area and the service area of neighboring purveyors by participating in a number of exchange plans, transfers, and emergency interties.

YVWD, along with several other local water agencies, participates in the Santa Ana River – Mill Creek Cooperative Water Project Agreement. This agreement went into place in 1976 and outlines the procedures for exchanges and transfers among the agencies. Although YVWD has not used this agreement for exchanges in recent years, it can easily be utilized when necessary.

### 11.6.8.1 Transfers

YVWD has sold treated water to Western Heights Water Company annually since 2008. The average water sold to Western Heights is 442 AF per year between 2016 and 2020.

### 6.2.7.3 Emergency Interties

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.

## 11.6.9 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.

Additionally, YVWD is completing the necessary studies to implement the Calimesa Aquifer Storage and Recovery Project. This project will be a system of injection wells that will inject recycled water into the aquifer. That water can be pulled from those same injections wells to be used as recycled water or drawn from wells farther away as potable water. This project would allow YVWD a great amount of flexibility to meet both the recycled and potable needs of the community.

**Table 11-22. DWR Table 6-7: Retail: Expected Future Water Supply Projects or Programs**

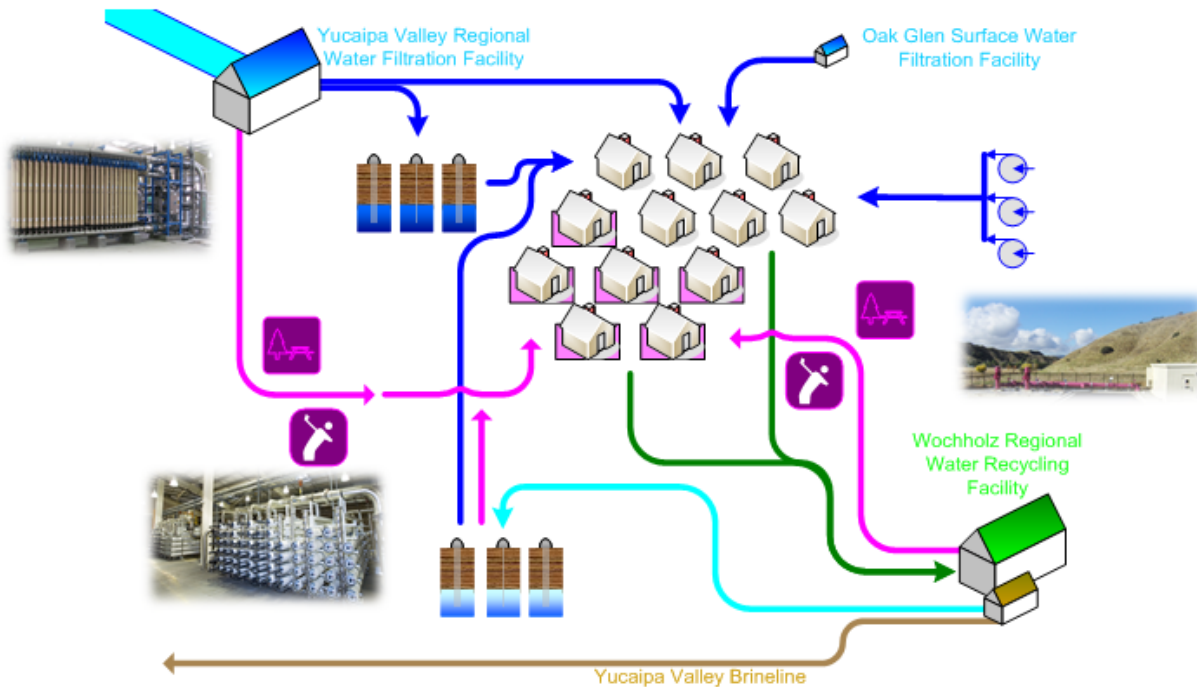
Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
<input type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
<input checked="" type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
Provide page location of narrative in the UWMP						
Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down List</i>	Expected Increase in Water Supply to Supplier* <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Supplier Name</i>				
<i>Add additional rows as needed</i>						
Calimesa ASR	No			2022	All Year Types	2,500-3,500
Bunker Hill CUP	Yes	SBVMWD		2023	All Year Types	10,000-20,000
<b>*Units of measure AF</b>						

### 11.6.10 Summary of Existing and Planned Sources of Water

As addressed in previous sections YVWD has numerous potable sources including imported water, groundwater from three separate basins, and surface water from a local creek. YVWD also produces a high-quality recycled water that is used throughout the district from the WRWRF. Lastly, the microfiltration backwash from the YVWRFF is added to the recycled system.

Future homes will be dependent on recycled water for irrigation. The Calimesa ASR project will aid in that endeavor by ensuring there is a recycled supply when needed or being to draw the water further from the injection wells as potable water. The Bunker Hill Conjunctive Use Project will allow YVWD to store water in wet years and use it during dry years.

## Water Resource Management Schematic for the Yucaipa Valley Water District



### 11.6.10.1 Description of Supplies

YVWD has a diverse portfolio of water resources that can easily be adjusted as the available supplies of each change. Because 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. 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.

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 in wet years and can use groundwater sources to back up imported water deliveries during a single-dry and multiple-dry years.

11.6.10.2 Quantification of Supplies

Table 11-23 summarizes the water resources used by YVWD in 2015, and the projected future supplies are summarized in Table 11-24. The estimated amount of imported water supply shown in Table 11-24 has been estimated by YVWD and provided to Valley District.

**Table 11-23. DWR Table 6-8: Retail: Water Supplies — Actual**

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2020		
<b>Drop down list</b> 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)
Purchased or Imported Water	Yucaipa Valley Regional Water Filtration Facility	4,057	Drinking Water	
Groundwater (not desalinated)	Groundwater Supplies	7,116	Drinking Water	
Surface water (not desalinated)	Oak Glen Filtration Facility	171	Drinking Water	
Recycled Water	Regional Water Recycling Facility	1,281	Recycled Water	
Other	Backwash at YVRWFF	954	Other Non-Potable Water	
<b>Total</b>		<b>13,579</b>		<b>0</b>
*Units of measure - AF				

**Table 11-24. DWR Table 6-9: Retail: Water Supplies — Projected**

Water Supply	Additional Detail on Water Supply	Projected Water Supply * Report To the Extent Practicable									
		2025		2030		2035		2040		2045 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Groundwater (not desalinated)	Beaumont Adjudicated Basin	15,000		15,000		15,000		15,000		15,000	
Groundwater (not desalinated)	San Timoteo Basin; 8-002.08	250		250		250		250		250	
Groundwater (not desalinated)	Yupper Santa Ana Valley; 8-002.06; Bunker Hill, San Bernardino Basin	750		750		750		750		750	
Groundwater (not desalinated)	Yucaipa Basin; 8-002.07	29,000		34,000		39,000		44,000		49,000	
Surface water (not desalinated)	Oak Creek/Birch Creek/Well 25 (Groundwater under the influence of surface water)	250		250		250		250		250	
Purchased or Imported Water	SGPWA	450		450		500		500		600	
Purchased or Imported Water	SBVMWD to YVRWFF	6,750		7,500		9,000		9,750		10,500	
Purchased or Imported Water	SBVMWD to Yucaipa Basin groundwater recharge	2,250		2,500		3,000		3,250		3,500	
Recycled Water	WRWRF	4,480		4,700		4,950		5,200		5,450	
Other											
<b>Total</b>		<b>59,180</b>	<b>0</b>	<b>65,400</b>	<b>0</b>	<b>72,700</b>	<b>0</b>	<b>78,950</b>	<b>0</b>	<b>85,300</b>	<b>0</b>
<i>*Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.</i>											
Groundwater supplies for YvWD reflect volume available since YVWD has recharged additional state water project supplies totaling approximately 28,783 AF.											

### 11.6.11 Special Conditions

A number of special conditions may affect YVWD's water supply availability. YVWD projects 59,000 AF in 2025 and 85,000 AF by 2045. This represents the active groundwater recharge and aquifer storage recovery projects YVWD has in place. YVWD also recognizes these projections are significantly different from the regional water budget illustrated in the overall IRUWMP. YVWD's service area is unique in relation to the water districts within the San Bernardino Valley. Active recharge through local water sources is minimal. Purchasing and storing imported water during wet years allows YVWD to have an additional supply of available sources as illustrated in Table 11-24.

#### 11.6.11.1 Climate Change Effects

Climate change has the potential to change water supply availability in the future. The amount of imported water available to YVWD from the State Water Project is dependent upon the precipitation received that year. Climate change may also affect the local precipitation patterns which can impact the precipitation recharge and surface water percolation in the local groundwater basins. However, YVWD does not anticipate an issue with accessing water resources due to climate change or severe droughts. YVWD recharges excess water into the groundwater basins during wet years. The amount of water currently stored would provide enough water for YVWD's service area in case of a multi-year drought. YVWD intends to increase the water in storage and expects to have 85,000 AF of usable groundwater by 2045.

### 11.6.12 Energy Use

Energy reporting has many benefits for water suppliers and their customers including:

- Identifying energy saving opportunities as energy consumption is often a large portion of the cost of delivering water.
- Calculating energy savings and greenhouse gas (GHGs) emissions reductions associated with water conservation programs.
- Potential opportunities for receiving energy efficiency funding for water conservation programs.
- Informing climate change mitigation strategies.
- Benchmarking of energy use or generation at each water acquisition and delivery step and the ability to compare energy use and generation among similar agencies.

The tables below show the energy intensity of the water, wastewater, and recycled water processes.



**Table 11-25. DWR Table O-1A: Recommended Energy Use Reporting – Water Supply Process Approach**

Table O-1A: Recommended Energy Reporting - Water Supply Process Approach									
Enter Start Date for Reporting Period 1/1/2020 End Date 12/30/2020	Urban Water Supplier Operational Control								
	Water Management Process						Non-Consequential Hydropower (if applicable)		
<input type="checkbox"/> Is upstream embedded in the values reported?									
Water Volume Units Used	Extract and Divert	Place into Storage	Conveyance	Treatment	Distribution	Total Utility	Hydropower	Net Utility	
Volume of Water Entering Process	AF	7,116.10	0.00	0.00	5,830.90	11,344.79	11,344.79	0	11,344.79
Energy Consumed (kWh)	N/A	7,102,321.00	0.00	0.00	2,237,833.00	3,731,982.00	13,072,136.00		13,072,136.00
Energy Intensity (kWh/vol.)	N/A	998.06	0.00	0.00	383.80	329.00	1,152.30	0.0	1,152.30

**Table 11-26. DWR Table O-2: Recommended Energy reporting – Wastewater & Recycled Water**

	Collection / Conveyance	Treatment	Discharge / Distribution	Total
Volume of Wastewater Entering Process (volume units selected above)	4,237	4,237		4,237
Wastewater Energy Consumed (kWh)	654,340	7,964,082		8,618,934
Wastewater Energy Intensity (kWh/volume)	154.4	1,879.7		2,034.2
Volume of Recycled Water Entering Process (volume units selected above)	0	0	1,280.58	1,280.58
Recycled Water Energy Consumed (kWh)	0	0	352,377	352,377
Recycled Water Energy Intensity (kWh/volume)	0.0	0.0	275.2	275.2

## 11.7 Water Service Reliability and Drought Risk Assessment

### 11.7.1 Water Service Reliability Assessment

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.

#### 11.7.1.1 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 an extended drought period, it is a priority to make direct deliveries to the water treatment plants operated by Redlands, West Valley Water District, 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.

#### 11.7.1.2 Groundwater Water Quality

YVWD groundwater wells have not been impacted by water quality issues. YVWD continues to monitor for any indication of groundwater contamination. See Consumer Confidence Report, Part 4 Appendix K-11.

#### 11.7.1.3 Single Versus Dry Year Reliability

Based on the studies and information listed in Chapter 6, it is anticipated that groundwater pumping by YVWD will not need to be reduced or curtailed during a single-dry or multi-dry year. Although, YVWD encourages additional water use efficiency measures during drought. These actions would result in reduced pumping of the groundwater basins. In addition, the planned water management actions and strategies below will also ensure water reliability during multi-dry years.

#### 11.7.1.4 Planned Water Management Actions and Strategies

The Calimesa Aquifer Storage and Recovery Program has been in development to utilize the groundwater basin for the additional storage and extraction of recycled water and drinking water. This project will involve the construction of a lake and groundwater injection facilities in the Beaumont Basin to maximize the operational efficiency of groundwater resources within the Calimesa portion of the

District's service area. The goal for the next five years will be to complete the preliminary design, environmental review, tracer study and construction for the project.

The expansion of the recycled water system adds an additional planned water management strategy to increase water reliability. YVWD expects to increase recycled water use to 4,000 AF/Year.

11.7.1.5 Service Reliability – Year Type Characterization

**Table 11-27. DWR Table 7-1: Retail: Basis of Water Year Data (Reliability Assessment)**

Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)			
Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020	Available Supplies if Year Type Repeats	
		<input checked="" type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location
		<input type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available *	% of Average Supply
Average Year	2020	57,013	100%
Single-Dry Year	2013	53,500	94%
Consecutive Dry Years 1st Year	2013	50,000	88%
Consecutive Dry Years 2nd Year	2013	46,500	82%
Consecutive Dry Years 3rd Year	2013	43,000	75%
Consecutive Dry Years 4th Year	2013	39,500	69%
Consecutive Dry Years 5th Year	2013	36,000	63%
Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
*Units of measure - AF			

11.7.1.6 Description of Management Tools and Options

Management tools and options being implemented or planned for implementation are included in Table 11-28.

**Table 11-28. DWR Table 7-2: Retail: Normal Year Supply and Demand Comparison**

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals (from Table 6-9)	59,180	65,400	72,700	78,950	85,300
Demand totals (from Table 4-3)	16,288	15,826	15,430	15,072	14,746
Difference	42,892	49,574	57,270	63,879	70,554

### 11.7.2 Drought Risk Assessment

The methodology used to determine the water supply shortage conditions during extended drought are comprised of:

**Imported Water** – YVWD purchases water from San Bernardino Valley Municipal Water District and San Gorgonio Pass Water Agency. Imported water supplies have ranged from 40% - 50% of the total water portfolio for the past 10 years. YVWD plans to increase the use of recycled water in order to decrease reliance on imported water.

**Groundwater** – Groundwater is managed and available to YVWD from the Yucaipa Basin, San Timoteo Basin, Beaumont Basin and San Bernardino Basin.

**Surface Water** – A prolonged drought would reduce surface water supplies. YVWD does not rely heavily on surface water supplies since this portion of supply makes up only 1% - 2% of the entire water portfolio.

**Recycled Water** – Recycled water represents 10% of the total water supply. A strategic goal of YVWD is to increase the use of recycled water to approximately 33% in order to reduce reliance on imported and local supplies.

**Table 11-28. DWR Table 7-3: Retail: Single Dry Year Supply and Demand Comparison**

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045 (Opt)
Supply totals*	59,180	65,400	72,700	78,900	85,300
Demand totals*	12,658	12,026	11,430	10,872	10,346
Difference	46,522	53,374	61,270	68,028	74,954

**Table 11-29. DWR Table 7-4: Retail: Multiple Dry Years Supply and Demand Comparison**

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	59,180	65,400	72,700	78,950	85,300
	Demand totals	12,658	12,026	11,430	10,872	10,346
	Difference	46,522	53,374	61,270	68,078	74,954
Second year	Supply totals	55,261	61,000	67,000	68,000	69,000
	Demand totals	11,696	11,256	10,744	10,470	9,994
	Difference	43,565	49,744	56,256	57,530	59,006
Third year	Supply totals	55,888	58,000	64,000	65,000	66,000
	Demand totals	10,807	10,536	10,100	10,082	9,654
	Difference	45,081	47,464	53,900	54,918	56,346
Fourth year	Supply totals	56,861	55,000	61,000	62,000	63,000
	Demand totals	9,986	9,862	9,494	9,709	9,326
	Difference	46,875	45,138	51,506	52,291	53,674
Fifth year	Supply totals	55,104	52,000	58,000	59,000	60,000
	Demand totals	9,227	9,230	8,924	9,350	9,009
	Difference	45,877	42,770	49,076	49,650	50,991
Units of Measurement - AF						

**Table 11-30. DWR Table 7-5: Retail: Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635 (b)**

<b>Submittal Table 7-5: Five-Year Drought Risk Assessment Tables to address Water Code Section 10635(b)</b>	
<b>2021</b>	<b>Total</b>
Total Water Use	11,673
Total Supplies	57,555
Surplus/Shortfall w/o WSCP Action	45,882
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	45,882
Resulting % Use Reduction from WSCP action	0%
<b>2022</b>	<b>Total</b>
Total Water Use	12,000
Total Supplies	58,100
Surplus/Shortfall w/o WSCP Action	46,100
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	46,100
Resulting % Use Reduction from WSCP action	0%
<b>2023</b>	<b>Total</b>
Total Water Use	12,330
Total Supplies	58,625
Surplus/Shortfall w/o WSCP Action	46,295
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	46,295
Resulting % Use Reduction from WSCP action	0%
<b>2024</b>	<b>Total</b>
Total Water Use	12,450
Total Supplies	58,970
Surplus/Shortfall w/o WSCP Action	46,520
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	46,520
Resulting % Use Reduction from WSCP action	0%
<b>2025</b>	<b>Total</b>
Total Water Use	12,550
Total Supplies	59,180
Surplus/Shortfall w/o WSCP Action	46,630
<b>Planned WSCP Actions</b> (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	46,630
Resulting % Use Reduction from WSCP action	0%

## 11.8 Water Shortage Contingency Plan

YVWD adopted a revised Water Shortage Contingency Plan (WSCP) and Water Waste Ordinance in 2019. The WSCP is in Part 4 Appendix K-9.

**Table 11-31. DWR Table 8-1: Water Shortage Contingency Plan Levels**

Table 8-1 Water Shortage Contingency Plan Levels		
Shortage Level	Percent Shortage Range	Shortage Response Actions <i>(Narrative description)</i>
1	Up to 10%	Normal Conditions: no conservation triggers or water savings objectives are initiated at this level.
2	Up to 20%	Public is notified of shortage. Customers are reminded to conserve water. Asses main flushing and reservoir cleaning activities.
3	Up to 30%	Continued voluntary cooperation. Consult with customer groups, initiate major public media campaign, identify next steps, regulate construction meter activity, contact largest customers, and prepare for level 4.
4	Up to 40%	Prohibit watering during the day, limit watering to certain days, prohibit ornamental fountains, prohibit car washing etc.
5	Up to 50%	Implement rate surcharge, continue water patrols, curtail fire flow and pipeline testing, turf irrigation prohibited, rescind construction meters
6	>50%	Monthly community meetings and enforce fines and penalties.



**Table 11-32. DWR Table 8-2: Demand Reduction Actions**

Table 8-2: Demand Reduction Actions				
Shortage Level	Demand Reduction Actions <b>Drop down list</b> These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <b>For Retail Suppliers Only</b> <i>Drop Down List</i>
1	Expand Public Information Campaign	10%		No
2	Provide Rebates on Plumbing Fixtures and Devices	20%		No
3	Decrease Line Flushing	30%		No
3	Expand Public Information Campaign			No
3	Landscape - Restrict or prohibit runoff from landscape irrigation			No
4	Increase Water Waste Patrols	40%		Yes
5	Improve Customer Billing	50%		Yes
6	Moratorium or Net Zero Demand Increase on New Connections	60%		Yes

**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.

### Consumption Reduction Methods

YVWD offers various rebates to encourage conservation. The reduction goal is to balance supply and demand.

### 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.

### 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.

### 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.

**Table 11-33. DWR Table 8-3: Supply Augmentation and Other Actions**

Submittal Table 8-3: Supply Augmentation and Other Actions			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap? <i>Include units used (volume type or percentage)*</i>	Additional Explanation or Reference <i>(optional)</i>
1	Other Purchases	11,500	Three party agreement
2	New Recycled Water	2,500	Aquifer storage and recovery
3	Stored Emergency Supply	28,783	Yucaipa Basin
*Units of Measurement - AF			

## 11.9 Demand Management Measures

Demand Management Measures are mechanisms implemented by Yucaipa Valley Water District to increase water conservation. The District was 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. YVWD is now a member of the California Water Efficiency Partnership (CalWEP) which replaced the CUWCC. The following demand management measures implemented by YVWD over the last five years.

### DMM 1 – Water Waste Prevention Ordinance

YVWD adopted a new water waste ordinance in 2019, Ordinance 60-2019. The ordinance addresses new state legislation requirements for water retailers to achieve their conservation goals.

### DMM 2 – Metering

YVWD customers are all metered. In addition, YVWD is actively replacing aged meters with AMI Sensus meters. The AMI meters enable YVWD and its customers to track water use, waste, and leaks on a timely basis.

**DMM 3 - 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).

**DMM 4 – Public Education and Outreach**

YVWD engages in education and outreach for the community and school groups throughout the year. YVWD offers facility tour and in class presentations for the community and schools. Facility tours emphasize where Yucaipa and Calimesa's water originates, treatment processes and conservation techniques as well. YVWD also participates in regional events coordinated by the retailers in the San Bernardino Valley.

**DMM 5 – Distribution System Real Loss Programs**

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 complete.

**DMM 6 – Water Conservation Program Coordination**

YVWD is a member of the Basin Technical Advisory Commission, Water Conservation Subcommittee. The committee meets bi-monthly to coordinate water conservation programs and events throughout the SBVMWD's service area.

## 11.10 Plan Adoption, Submittal, and Implementation

**Table 11-34. DWR Table 10-1: Retail: Notification to Cities and Counties**

Submittal Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Banning	Yes	Yes
Beaumont	Yes	Yes
Calimesa	Yes	Yes
Colton	Yes	Yes
Fontana	Yes	Yes
Grand Terrace	Yes	Yes
Highland	Yes	Yes
Loma Linda	Yes	Yes
Redlands	Yes	Yes
Rialto	Yes	Yes
Riverside	Yes	Yes
San Bernardino	Yes	Yes
Yucaipa	Yes	Yes
County Name	60 Day Notice	Notice of Public Hearing
Riverside County	Yes	Yes
San Bernardino County	Yes	Yes