



# 2020 Urban Water Management Plan

Final

JUNE 2021

VICTORVILLE WATER DISTRICT





VICTORVILLE WATER DISTRICT

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# 2020 Urban Water Management Plan

JUNE 15, 2021

Prepared by Water Systems Consulting, Inc.



# ACKNOWLEDGMENTS

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Victorville Water District's 2020 Urban Water Management Plan was prepared by Water Systems Consulting, Inc. The primary authors are listed below.



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# ACRONYMS AND ABBREVIATIONS

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°F	Degrees Fahrenheit
µg/L	Microgram per Liter
AF	Acre Foot
AFY	Acre-Feet per Year
AWWA	American Water Works Association
Basin	Mojave River Basin
CDFW	California Department of Fish and Wildlife
Chromium VI	Hexavalent Chromium
City	City of Victorville
CWC	California Water Code
DMM	Demand Management Measures
DRA	Drought Risk Assessment
DWR	Department of Water Resources
ET <sub>o</sub>	Reference Evapotranspiration
FPA	Free Production Allowance
GHG	Greenhouse Gases
GPCD	Gallons per Capita per Day
HDPP	High Desert Power Plant
IRWMP	Integrated Regional Water Management Plan
IWTP	Industrial Wastewater Treatment Plant
Judgment	Mojave Basin Area Judgment
Legislature	State of California Legislature
MBR	Membrane Bioreactor
MCL	Maximum Contaminant Level
MGD	Million Gallons per Day
mg/L	Milligrams per Liter
MOU	Memorandum of Understanding
MWA	Mojave Water Agency
PFAS	Per- and Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PUA	Public Utilities Authority

R <sup>3</sup>	Regional Recharge and Recovery Project
Region	Mojave Region
RHNA Housing Needs Assessment	Regional Housing Needs Allocation Progress 6th Cycle Regional Housing Needs Assessment Final Allocation Plan
RW	Recycled Water
RWA	Replacement Water Assessment
RWMP	Final Draft Recycled Water Master Plan
SBX7-7	Senate Bill 7 of Special Extended Session 7
SCLA	Southern California Logistics Airport
SDWA	Federal Safe Drinking Water Act
State Water Board	State Water Resources Control Board
SWP	State Water Project
TDS	Total Dissolved Solids
UCR	University of California Riverside
UCR Center	University of California Riverside School of Business Center for Economic Forecasting and Development
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act
VVWRA	Victor Valley Wastewater Regional Authority
VWD	Victorville Water District
VWD-012	Ordinance No. VWD-012
WSCP	Water Shortage Contingency Plan
WWTP	Wastewater Treatment Plant



# 1

## Introduction and Lay Description

**This section provides a brief overview of Victorville Water District (VWD) and the purpose of this Urban Water Management Plan (UWMP). It also describes how the UWMP is organized and how it relates to other local and regional planning efforts that VWD is involved in.**

The mission of the VWD is to efficiently provide customers with safe, reliable, high quality water, recycled water (RW), and wastewater services while meeting or exceeding all regulatory requirements in a fiscally and environmentally responsible manner.

In this UWMP, VWD evaluates its long-term resource planning and establishes management measures to ensure adequate water supplies are available to meet existing and future demands. This UWMP provides a framework to help VWD maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during drought conditions or other water supply interruptions.

### IN THIS SECTION

- Purpose of the Plan
- UWMP Organization
- UWMP in Relation to Other Efforts
- UWMPs and Grant or Loan Eligibility
- Delta Reliance
- Lay Description

## 1.1 Purpose of the Plan

In 1983, the State of California Legislature (Legislature) enacted the Urban Water Management Planning Act (UWMP Act). The law required an urban water supplier providing water for municipal purposes to more than 3,000 customers or serving more than 3,000 acre-feet (AF) annually to adopt an UWMP every five years demonstrating water supply reliability under normal and drought conditions.

Since the original UWMP Act was passed, it has undergone significant expansion, particularly since the previous UWMPs were prepared for 2015. Prolonged droughts, groundwater overdraft, regulatory revisions, and changing climatic conditions affect the reliability of each water supplier as well as the statewide water reliability overseen by California Department of Water Resources (DWR), the State Water Resources Control Board (State Water Board), and the Legislature. Accordingly, the UWMP Act has grown to address changing conditions, and the current requirements are found in Sections 10610–10656 and 10608 of the California Water Code (CWC).

DWR provides guidance for urban water suppliers by preparing an UWMP Guidebook 2020 (State of California Department of Water Resources, March 2021), conducting workshops, developing tools, and providing program staff to help water suppliers prepare comprehensive and useful water management plans, implement water conservation programs, and understand the requirements in the CWC. Suppliers prepare their own UWMPs in accordance with the requirements and submit them to DWR. DWR then reviews the plans to make sure they address the requirements identified in the CWC and submits a report to the Legislature summarizing the status of the plans for each five-year cycle. The 2020 DWR UWMP Guidebook, finalized in March 2021, was used to complete this 2020 UWMP (State of California Department of Water Resources, March 2021).

The purpose of the UWMP is for water suppliers to evaluate their long-term resource planning and establish management measures to ensure adequate water supplies are available to meet existing and future demands. The UWMP provides a framework to help water suppliers maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during drought conditions or other water supply interruptions.

The UWMP is a valuable planning tool used for multiple purposes, including:

- Provide a standardized methodology for water utilities to assess their water resource needs and availability.
- Serve as a resource to the community and other interested parties regarding water supply and demand, conservation, and other water related information.
- Provide a key source of information for cities and counties when they are considering approval of proposed new developments and preparing regional long-range planning documents, such as City and county General Plans.
- Inform other regional and statewide water planning efforts, such as Integrated Regional Water Management Plans and the California Water Plan.

CWC 10632 also includes updated requirements for suppliers to prepare a Water Shortage Contingency Plan (WSCP). The WSCP documents a supplier's plans to manage and mitigate an actual water shortage condition, should one occur because of drought or other impacts on water supplies. In the 2015 UWMP cycle, the WSCP was part of the UWMP. For the 2020 update, the WSCP is required to be a standalone document so that it can be updated independently of the UWMP, but it must be referenced in and attached to the 2020 UWMP. An overview of the WSCP is described in the body of this plan, and the standalone WSCP is attached as **Appendix A**.

This plan, which was prepared in compliance with the CWC and as set forth in the 2020 guidelines and format established by the DWR, constitutes the 2020 UWMP for VWD.

## 1.2 UWMP Organization

VWD generally followed DWR's recommended organizational outline in the preparation of its 2020 UWMP. Below is a summary of the information included in the various sections of the 2020 UWMP:

**Section 1 — Introduction and Lay Description.** This section provides background information on the UWMP process, new regulatory requirements, and an overview of the information covered throughout the remaining sections.

**Section 2 — Plan Preparation.** This section provides information on the processes used for developing the UWMP, including efforts in coordination and outreach.

**Section 3 — System Description.** This section describes VWD's water system, service area, population demographics, local climate, and land uses.

**Section 4 — Water Use Characterization.** This section describes and quantifies the current and projected water uses through 2045 within the water service area.

**Section 5 — SBX7-7 Baseline, Targets, and 2020 Compliance.** This section describes the Water Conservation Act of 2009 — also known as Senate Bill 7 of Special Extended Session 7 (SBX7-7) — baseline, targets, and 2020 compliance.

**Section 6 — Water Supply Characterization.** This section describes and quantifies the current and projected potable and non-potable water supplies.

**Section 7 — Water Service Reliability and Drought Risk Assessment.** This section describes the water service reliability through 2045 and includes the Drought Risk Assessment for the next five years.

**Section 8 — Water Shortage Contingency Plan.** This section outlines the content of the standalone report in **Appendix A**, which is a detailed plan for how VWD intends to predict and respond to foreseeable and unforeseeable water shortages.

**Section 9 — Demand Management Measures.** This section describes VWD's efforts to promote conservation and reduce water demand, including discussions of specific demand management measures.

**Section 10 — Plan Adoption, Submittal, and Implementation.** This section discusses the steps taken to prepare VWD's 2020 UWMP, hold a public hearing, adopt, and submit the 2020 UWMP, and implement the adopted plan.

## 1.3 UWMP in Relation to Other Efforts

The UWMP characterizes water use, estimates future demands and supply sources, and evaluates supply reliability for normal, single-dry, and consecutive dry years. The UWMP also requires reevaluation of VWD's WSCP. Details on the WSCP are provided in Section 8. Other documents that were leveraged in preparation of this UWMP are listed below:

- VWD 2015 UWMP
- VWD 2021 Water Master Plan
- VWD Final Draft Recycled Water Master Plan
- City of Victorville General Plan 2030
- Mojave Water Agency (MWA) Population Forecast — 2020 Edition

## 1.4 UWMP and Grant or Loan Eligibility

For a water supplier to be eligible for a grant or loan administered by DWR, and potentially other agencies, the supplier must have a current UWMP on file that meets the requirements set forth by the CWC. A current UWMP must also be maintained by the supplier throughout the term of any grants or loans received. VWD has prepared the 2020 UWMP under guidance from DWR's 2020 UWMP Guidebook (State of California Department of Water Resources, March 2021).

## 1.5 Delta Reliance

MWA prepared a delta reliance assessment for its 2020 UWMP and for MWA's retail water service agencies, including VWD. MWA's delta reliance assessment is provided in **Appendix H**.

## 1.6 Lay Description

VWD is located in the southwest region of San Bernardino County, California. VWD lies north of the San Bernardino Mountains in the Mojave Desert, approximately 90 miles northeast of Los Angeles. In 2020, VWD had a total of 36,673 connections and produced 21,865 acre-feet per year (AFY) of potable water and 722 AFY of RW. The VWD service area is expected to increase in population from 134,273 in 2020 to 200,486 in 2040.

### 1.6.1 Water Use

VWD categorizes its water use customers as single-family residential, multifamily residential, commercial/institutional, landscape/irrigation, and RW. VWD's total water use is estimated to increase from 23,452 AFY in 2020 to 32,699 AFY in 2040. The historical water use is presented in **Table 4-3** and **Table 4-4**. The projected water use is presented in **Table 4-6**.

SBX7-7 requires all water suppliers to increase water use efficiency, with the overall goal to decrease per capita water consumption within the State by 20% by the year 2020. This UWMP is required to assess compliance with the 2020 urban water use target. The VWD baseline per capita demand is 253 gallons per capita per day (GPCD), the 2015 Interim Target is 227 GPCD, and the 2020 Target is 202 GPCD. VWD's actual 2020 GPCD was 145.

### 1.6.2 Water Supplies

VWD's potable water system supplies water solely from groundwater pumped from the Mojave River Basin (Basin). The Basin is adjudicated, and MWA serves as the Watermaster. Per the Mojave Basin Area Judgment, producers in the Mojave Basin Area are allocated a Free Production Allowance (FPA). Producers may pump more than their FPA, provided they purchase replacement water. Funds collected for replacement water are then used by MWA to purchase imported water supplies in wet years and recharge them into the Basin for use in dry years.

### 1.6.3 Water Supply Reliability

Natural groundwater supply estimates are based on the long-term averages, which account for inconsistency in natural supplies (i.e., historic periods of drought are included in the long-term average). Therefore, VWD does not have any inconsistent water sources that result in reduced supplies in dry or multiple-dry years. Therefore, this UWMP concludes that VWD has adequate supplies to meet demands during average, single-dry, and multiple-dry years throughout the 25-year planning period. VWD will continue aggressive water conservation efforts, increased use of RW to offset potable water demand, and participation in new water supply projects with MWA to ensure that supplies continue to meet current and projected demands.



# 2 Plan Preparation

**This UWMP was prepared based on guidance from DWR’s 2020 UWMP Guidebook 2020 and provides information on the processes used for developing the UWMP, including coordination and outreach efforts. The 2020 UWMP must be submitted to DWR by urban water suppliers by July 1, 2021.**

This UWMP was prepared following guidance from:

- DWR’s 2020 UWMP Guidebook (State of California Department of Water Resources, March 2021)
- DWR UWMP Public Workshops and Webinars
- 2020 DWR Review Sheet Checklist (**Appendix B**)

The 2020 UWMP was prepared in a transparent manner, and VWD actively engaged stakeholders, cities, counties, water agencies, and the public to both seek and distribute water use, supply, and reliability information to strengthen the region’s ability to assess and plan for the region’s water future. Details regarding VWD’s UWMP preparation and the coordination and outreach efforts conducted are provided in this section.

## IN THIS SECTION

- Plan Preparation
- Basis for Preparing a Plan
- Coordination and Outreach

## 2.1 Plan Preparation

VWD prepared this 2020 UWMP in accordance with CWC Section 10617, which requires water suppliers with 3,000 or more service connections, or those supplying 3,000 AFY or more, to prepare an UWMP. Suppliers are required to update UWMPs at least once every five years on or before July 1 in years ending in six and one, incorporating updated and new information from the five years preceding each update. VWD's 2020 UWMP must be submitted to DWR by July 1, 2021.

## 2.2 Basis for Preparing a Plan

VWD provides water to a service area that includes most of the City of Victorville (City) and areas of unincorporated San Bernardino County. VWD operates a single public water system. VWD's current connections and water supplied are presented in **Table 2-1**. VWD has prepared its UWMP individually and is not a part of a regional plan or alliance. Throughout this UWMP, water volume is represented in units of AFY, unless otherwise noted, and data are presented on a calendar year basis.

**Table 2-1. Public Water Systems**

DWR Table 2-1R

PUBLIC WATER SYSTEM NUMBER	PUBLIC WATER SYSTEM NAME	NUMBER OF MUNICIPAL CONNECTIONS 2020	VOLUME OF WATER SUPPLIED 2020, AFY
CA3610052	VICTORVILLE WATER DISTRICT	36,673	21,865

## 2.3 Coordination and Outreach

To prepare this UWMP, VWD coordinated with multiple neighboring and stakeholder agencies. The coordinated efforts were conducted to (1) inform the agencies of VWD's efforts and activities, (2) gather high quality data for use in developing this UWMP, and (3) coordinate planning activities with other related regional plans and initiatives. The coordination activities conducted by VWD are summarized in **Table 2-2**.

**Table 2-2. Agency Coordination**

AGENCY/ORGANIZATION	PARTICIPATED IN DEVELOPING THE PLAN	SENT A COPY OF THE DRAFT PLAN	SENT A NOTICE OF INTENTION TO ADOPT
Mojave Water Agency	X	X	X
Town of Apple Valley		X	X
City of Adelanto		X	X
San Bernardino County		X	X
Victor Valley Wastewater Reclamation Authority		X	X
City of Hesperia		X	X
City of Barstow		X	X

### 2.3.1 Coordination with Other Agencies and the Community

As a regional water planning and management agency, MWA engaged the retail water agencies in its service area in a cooperative approach to developing 2020 UWMPs. MWA developed a customized and robust methodology for population and demand forecasts that can be applied uniformly to the retail water agencies in its service area to ensure regional consistency for this 2020 UWMP cycle. VWD worked cooperatively with MWA through the development of this UWMP to share historic water use data and apply this regional methodology. The projections presented in this plan have been integrated into MWA's 2020 UWMP to be rolled up into its regional forecast.



# 3 System Description

**This section describes the VWD’s water system, service area, population demographics, local climate, and land uses.**

The mission of VWD is to efficiently provide its customers with safe, reliable, high quality water, recycled water, and wastewater treatment while meeting or exceeding all regulatory requirements in a fiscally and environmentally responsible manner.

VWD provides water services to approximately 36,700 customer connections, serving a population of approximately 127,700 within its 85 square mile service area, which is located in the High Desert area of western San Bernardino County, California. VWD’s water enterprise includes approximately 694 miles of distribution and transmission mains, 34 active wells, 4 booster pumping stations, 26 water storage reservoirs, 1 recycled water storage tank, and 25 pressure-regulating stations.

## IN THIS SECTION

- General Description
- Service Area Climate
- Service Area Population and Demographics
- Land Uses within Service Area

### 3.1 General Description

VWD is located in the southwest region of San Bernardino County, California. VWD lies north of the San Bernardino Mountains in the Mojave Desert, approximately 90 miles northeast of Los Angeles. VWD's service area, shown in **Figure 3-1**, encompasses the entire City as well as areas within the City's sphere of influence. VWD is bounded by the City of Adelanto to the west and the City of Hesperia to the south. The City of Apple Valley, Spring Valley Lake, and the Mojave Narrows Regional Park lie to the east.

In July of 2007, both Victor Valley Water District and Baldy Mesa Water District were absorbed by VWD. VWD's service area also includes the Southern California Logistics Airport (SCLA), comprising approximately 14 square miles.

The VWD service area lies within the service area of MWA, which was established in 1960 due to concerns over declining groundwater levels in the Mojave Basin, El Mirage Basin, Lucerne Valley, Johnson Valley, and Morongo Basin areas. MWA was created to ensure that sufficient water is available to meet current and future needs in its service area. MWA is one of 29 State Water Project (SWP) contractors and imports water from the SWP as a supplemental supply source for its service area. MWA is also responsible for implementing the Mojave Basin Area Judgment, which adjudicated the rights to produce water from the available natural water supply to better manage groundwater supplies. VWD's water supply in the Mojave Basin is discussed further in Section 6.

### 3.2 Service Area Climate

VWD's climate is characterized by warm summers and cool winters. **Table 3-1** presents average climate data for the service area, including temperature, rainfall and reference evapotranspiration (ET<sub>o</sub>). As shown in **Table 3-1**, the warmest month of the year is July, with an average temperature of 80 degrees Fahrenheit (°F), while the coldest months of the year are December and January, with an average temperature of 44°F.

The annual average precipitation at VWD is about 6 inches. As shown in **Table 3-1**, the majority of the rainfall occurs in November through March. January and February are the wettest months, with an average rainfall of approximately 1 inch.

**Table 3-1. Historical Climate Data**

MONTH	AVERAGE TEMPERATURE (°F) <sup>1</sup>	AVERAGE PRECIPITATION (INCH) <sup>1</sup>	AVERAGE STANDARD ET <sub>o</sub> (INCH) <sup>2</sup>
JANUARY	45.4	0.80	2.24
FEBRUARY	47.8	0.90	2.94
MARCH	52.1	0.81	4.90
APRIL	58.7	0.39	6.42
MAY	65.2	0.14	7.98
JUNE	74.1	0.02	9.08
JULY	80.4	0.10	9.54
AUGUST	79.5	0.11	8.87
SEPTEMBER	72.6	0.12	6.59
OCTOBER	62.7	0.30	4.58
NOVEMBER	51.9	0.46	2.78
DECEMBER	44.5	1.02	2.02

Notes:

<sup>1</sup>NOAA weather station 049325 in Victorville (data from 1917-2016) <http://wrcc.dri.edu> and <sup>2</sup>CIMIS weather station 117 in Victorville (2016-2020) <http://www.cimis.water.ca.gov/>;

<sup>2</sup>CIMIS weather station 117 in Victorville; <http://www.cimis.water.ca.gov/>

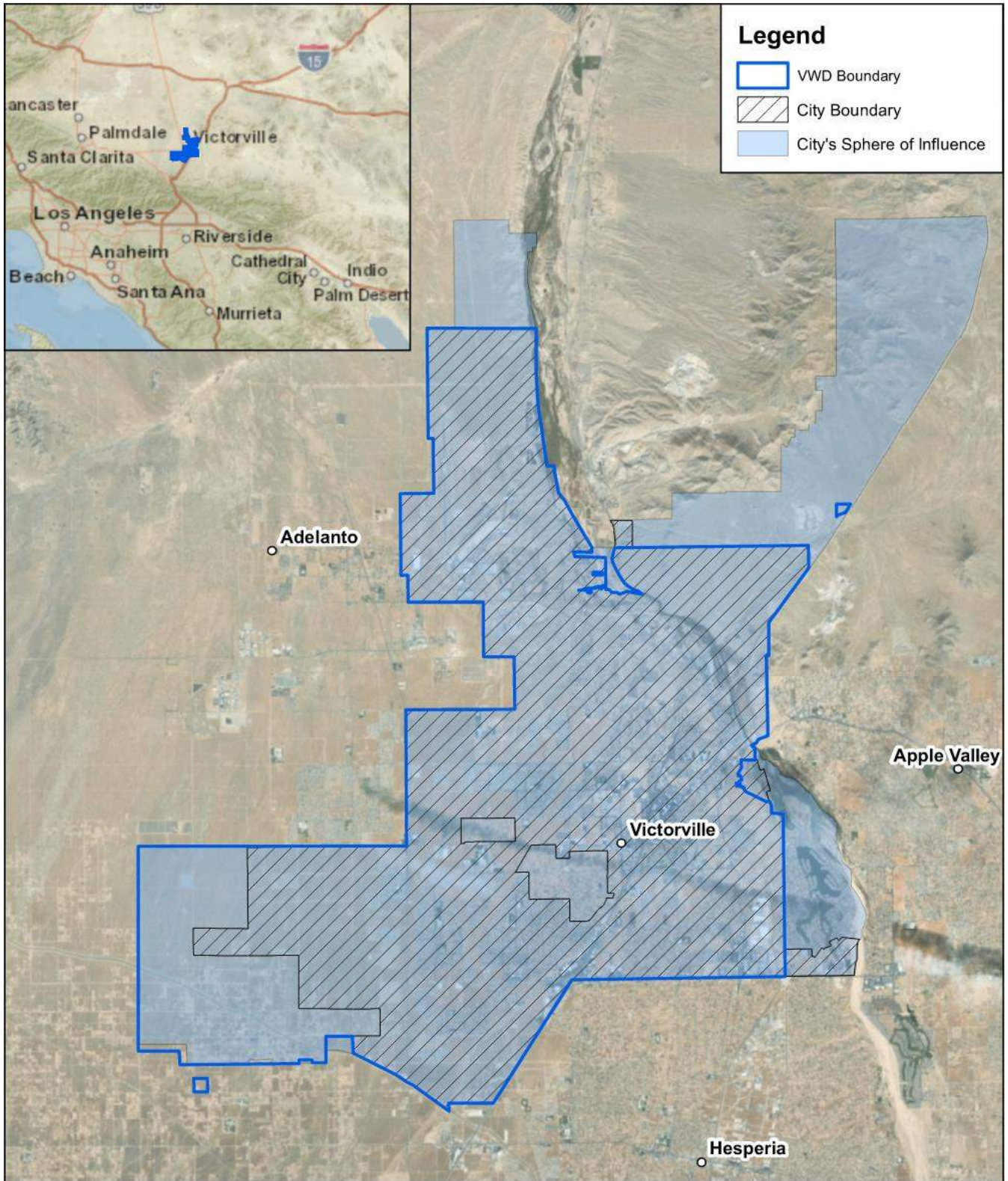


Figure 3-1. Water Service Area Boundary Map

### 3.2.1 Climate Change Effects

The MWA Integrated Regional Water Management Plan (IRWMP) (Kennedy/Jenks Consultants, 2014) performed an assessment of climate change effects throughout its service area, including VWD's service area. Climate change is driven by increasing concentrations of carbon dioxide and other greenhouse gases (GHG) that cause an increase in temperature and stress natural systems, such as oceans and the hydrologic cycle. California faces the prospect of significant water management challenges related to climate change and is already experiencing a wide array of effects. Impacts that are currently occurring and that are projected to continue include increased temperatures, sea level rise, a reduced winter snowpack, and altered precipitation patterns, including more frequent and intense storm events.

While it is clear that actions must be taken to reduce GHG emissions to mitigate impacts on global climate, adaptation to already occurring impacts is also crucial to continue to effectively manage the State's water resources. Water resource managers and customers can play key roles in improving water and energy efficiency, reducing GHG emissions, and improving stewardship of the State's natural resources. Climate changes that may affect VWD water resources include:

- **Higher Temperatures and Heat Waves.** These increase demand for water, especially for agricultural and residential irrigation uses.
- **Water Uncertainty.** A projected overall decrease in precipitation levels coupled with more intense individual storm events may lead to increased flooding. Higher temperatures may cause more precipitation to fall as rain rather than snow, hasten snowmelt, and increase runoff, making it more difficult to capture stormwater flows for storage. Increased evaporation will create a generally drier climate, with wildfires likely to increase and groundwater basins likely to receive less replenishment.

VWD's expected water supply is groundwater pumped from the Mojave Groundwater Basin, the largest groundwater resource in the MWA service area. Any water quality impacts to groundwater sources due to climate change are expected to be indirect, primarily due to decreased recharge from lower precipitation and increased use of groundwater to make up loss of imported water. Decreased recharge and increased groundwater pumping may allow concentrations of groundwater contaminants such as arsenic, nitrates, hexavalent chromium (Chromium VI) and Total Dissolved Solids (TDS) to increase in local basins, which may trigger additional treatment requirements and increase groundwater treatment costs.

A projected overall decrease in precipitation levels coupled with more intense individual storm events may lead to increased flooding in the region. Flood risks are greatest if flood conveyance channels, storm drains, and natural streambeds lack sufficient capacity to convey these intense flows.

#### 3.2.1.1 Addressing Climate Change

There are two main strategies to deal with climate change — mitigation strategies and adaptation strategies. Mitigation strategies combat climate change by directly reducing GHG emissions or minimizing increases in GHG emissions, while adaptation strategies generally refer to efforts that deal with the impacts of climate change.

Mitigation or GHG reduction measures include implementing specific energy efficiency programs or projects, installing renewable energy projects, implementing waste-to-energy projects at wastewater treatment plants, promoting carbon sequestration, and conducting water efficiency and demand reduction programs. All of these measures either directly create carbon-free energy or reduce the need for generation of electricity from fossil fuel-fired electric plants. The Assembly Bill 32 Scoping Plan contains the main strategies California will use to reduce GHG emissions that cause climate change. The scoping plan has a range of GHG reduction actions, including direct regulations, alternative



compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, and market-based mechanisms, such as a cap-and-trade system.

Adaptation addresses operational changes that need to be made to accommodate increasing temperatures, increasing possibility for severe flooding, and decreasing precipitation as snow predicted by the climate models.

Large water and wastewater agencies could conduct energy and GHG master plans to assess their energy and carbon footprints and create an action plan of strategies for greater energy efficiency and GHG emission reductions. Full exploration of the water-energy-carbon nexus can identify opportunities for energy savings and GHG emission reductions through water operations, programs, and projects.

Per the IRWMP, suggested regional adaptation strategies to address potential reductions in water supply include the following:

- Establish a climate change adaptation public outreach and education program.
- Build collaborative relationships between regional entities and neighboring communities to promote complementary adaptation strategy development and regional approaches.
- Establish an ongoing monitoring program to track local and regional climate impacts and adaptation strategy effectiveness.
- Expand water storage and conjunctive management of surface and groundwater resources.
- Address the State policy goal of reducing reliance on the Delta by promoting and investing in projects and programs that allow the region to meet water demands with alternative sources of supply and/or demand management actions during times when imported supplies from the Delta are reduced or unavailable due to dry years, droughts, system outages, environmental and regulatory restrictions, or other reasons.
- Enhance use of recycled water for appropriate uses as a drought-proof water supply.
- Enhance practices of water exchanges and water banking outside the region to supplement water supply.
- Develop plans for local agencies in the region to monitor the elevation of their groundwater basins.
- Encourage cities and the county agencies in the region to adopt local ordinances that protect the natural functioning of groundwater recharge areas.

## 3.3 Service Area Population and Demographics

### 3.3.1 Service Area Population

For the 2020 UWMP cycle, MWA engaged University of California Riverside (UCR) School of Business Center for Economic Forecasting and Development (UCR Center) to develop a customized population forecast through 2065 for the MWA service area and its incorporated cities, subareas, and water purveyors, including the VWD service area. These population forecasts were used for this UWMP. The methodology and findings are summarized briefly below and are described in more detail in the MWA Population Forecast (UCR School of Business, 2020) provided in **Appendix C**.

Historical data used in the population forecast of the incorporated cities was obtained from the California Department of Finance, which makes population estimates available from 1970 forward on an annual basis, and the United States decennial census. Based on this data, the UCR Center created an econometric time series model to capture the historical correlations with countywide population growth. Future population growth for the incorporated cities of the MWA service area was predicted using these historic correlations and a long-run driver of countywide population growth. Long-run

forecasts are an estimate of what the population is expected to be in a given time period based on current economic and demographic trends.

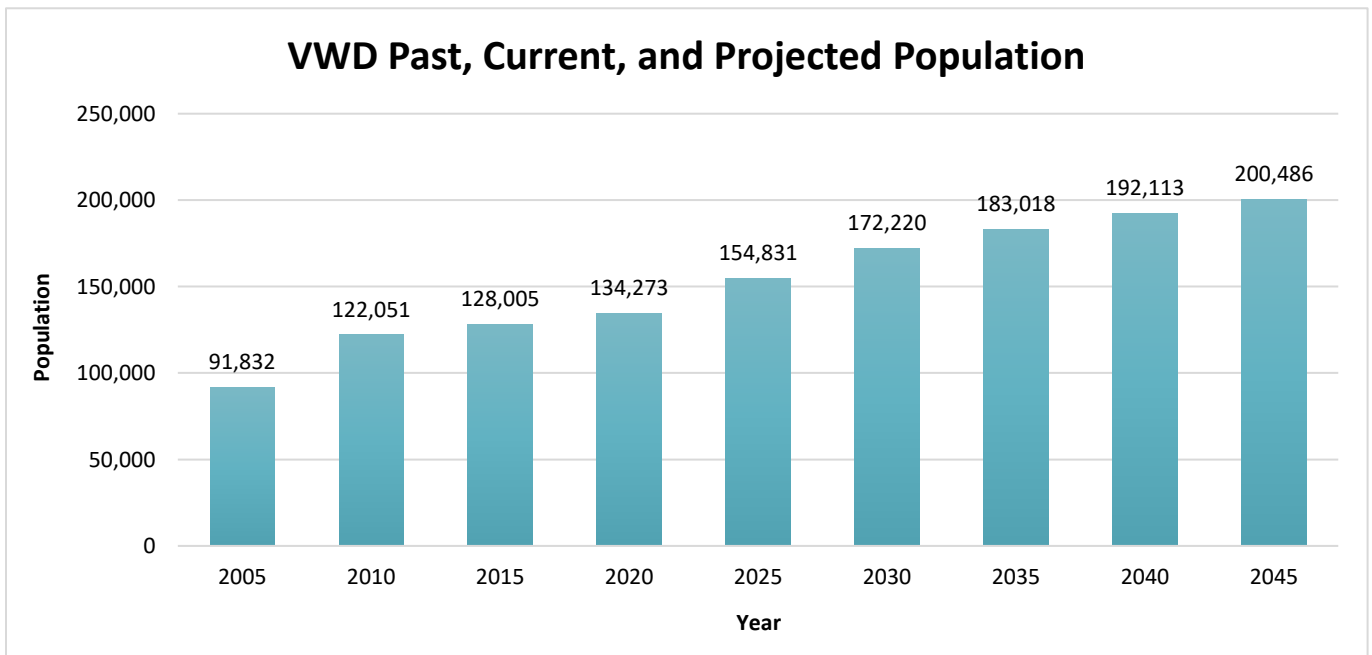
Current economic and demographic trends indicate that California’s population growth is slowing down and will continue to do so well into the future. Statewide net migration remains positive but has declined significantly, relying on foreign migration to keep total net migration above zero. Furthermore, birth rates have dropped across most racial and ethnic groups and are expected to flatten out or continue declining. The UCR Center expects the same patterns across California to resonate within San Bernardino County and the MWA. While San Bernardino County and the MWA service area have greater home affordability compared to the nearby regions, regional data patterns over the past few years have shown negative net migration and declining birth rates. With the decline in birth rates and negative net migration, the MWA service area’s population growth projections have decreased.

Even with population growth slowing, the MWA service area population growth rates over the next several decades are anticipated to be stronger than those anticipated for San Bernardino County overall. The broader Inland Empire region has seen strong economic and employment growth these last few years, and much of that has been due to its affordability compared with the coastal counties of Southern California. The MWA service area is expected to see this kind of growth as well, relative to other parts of the Inland Empire, due to its affordability relative to the broader region.

The UCR Center’s analysis showed that, compared with other cities in the region, the City experienced some of the largest growth between 2011 and 2019, with 7.7%. The past, current, and projected service area populations are shown in **Figure 3-2**. The current forecast calls for 2.0% average annual population growth for the VWD service area through 2045. The historical and projected annual growth rates are shown in **Table 3-2**.

**Table 3-2. Historical and Projected Annual Growth Rate**

GROWTH RATES	2020-2025	2025-2030	2030-2035	2035-2040	2040-2045
VWD’s Service Area	3.1%	2.2%	2.3%	1.3%	1.0%



**Figure 3-2. Historical, Current, and Projected Population**

### 3.3.2 Other Social, Economic, and Demographic Factors

Demographic factors that can influence future water demand include land use, relative proportion of single-family residences to multifamily residences, population density, economic characteristics (e.g., income levels, employment rate), and the composition of customer types.

Census data reported that 46% identified as White, 15% identified as Black and 33% identified as Two or More Races or Some Other Race Alone. Out of the total population, 56% were of Hispanic origin. Census data also reported the average household size of 3.5 people, with an average median household income of \$55,025.

With relatively more affordable housing compared to areas closer to the coast, a large commuter population also works in nearby Los Angeles and Orange counties. The number of residents commuting to jobs in nearby counties is expected to increase in the near term as housing prices continue to rise and supply remains constrained (UCR School of Business, 2020).

### 3.4 Land Uses within Service Area

VWD's 2021 Water Master Plan summarized the developed parcels as of 2016, areas to be developed, and the projected 2040 developed parcels within VWD's service area. Data used in this analysis were received from the City's Planning Department and the City's General Plan (City of Victorville, 2008). Based on these data as of 2016, VWD's service area is approximately 38% developed and is expected to be approximately 62% developed by 2040. **Table 3-3** summarizes the 2016 and projected 2040 land use.

**Table 3-3. VWD's Land Use**

LAND USE CATEGORY	LAND USE AT BUILDOUT, ACRES	2016 % DEVELOPED	PROJECTED 2040 % DEVELOPED
Residential	26,800	41%	64%
Commercial	6,703	31%	62%
Industrial	1,947	24%	44%

VWD has identified the following categories of growth:

- Specific Plans listed in the City's General Plan, such as the Civic Center Specific Plan and Old Town Specific Plan
- Development within the remaining vacant land
- SCLA Specific Plan



# 4 Water Use Characterization

**This section describes historical and current water use and presents projected future demands within VWD’s service area. Water use is presented by customer class, such as residential, commercial, institutional, landscape, and other purposes. This section also includes the historical, current, and projected (RW) use for VWD.**

Demand projections are dynamic, often changing as a result of economic, political, and environmental pressures. Several factors can affect demand projections, including population growth, land use revisions, new regulations, consumer choice, economic conditions, transportation needs, environmental factors, conservation programs, and plumbing codes.

## IN THIS SECTION

- Past, Current, and Projected Water Use
- Water Use for Lower Income Households
- Climate Change Considerations

## 4.1 Past, Current, and Projected Water Use

### 4.1.1 Water Use Customers

VWD categorizes its water use customers as single-family residential, multifamily residential, commercial/institutional, landscape/irrigation, and RW. The number of active connections in each category from 2016 to 2020 is shown in **Table 4-1**.

**Table 4-1. VWD 2016-2020 Connections by Customer Class**

USE TYPE	NUMBER OF CONNECTIONS BY CUSTOMER TYPE				
	2016	2017	2018	2019	2020
Single-Family Residential	32,652	32,185	32,380	32,927	33,348
Multi-Family Residential	197	775	756	763	762
Landscape (Irrigation)	236	266	304	339	378
Commercial/Institutional	1,823	1,850	2,162	2,172	2,178
Recycled Water	2	4	4	3	7
<b>TOTAL:</b>	<b>34,910</b>	<b>35,080</b>	<b>35,606</b>	<b>36,204</b>	<b>36,673</b>

### 4.1.2 Distribution System Water Losses

Distribution system water losses are calculated as the difference between water produced and the amount of water billed to customers plus other authorized uses of water. Sources of water loss include:

- **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 because they are very small; however, these small leaks contribute to the overall water loss. Aging pipes typically have more leaks.
- **Water Used for Flushing and Fire Hydrant Operations.** Certain areas of a water distribution system must be flushed to maintaining high quality water. Use of water from fire hydrants are not metered.
- **Unauthorized Uses or Theft of Water.**

VWD monitors its water loss and prepares an annual American Water Works Association (AWWA) Water Audit, attached in **Appendix D**, to estimate the volume of water loss. The results of the water audits from 2016 to 2019 are shown in **Table 4-2**. The average 2016–2019 water loss was 10% of production. The 2020 water loss is estimated to be 6% of total water use based on the difference between production and consumption for 2020. VWD will complete a 2020 AWWA Water Audit by October 1, 2021, in accordance with reporting requirements to the State.

For future water loss, VWD assumes the water loss will stay constant at 6% of total water use. This reflects VWD's continuous efforts to detect leaks and monitor losses.

**Table 4-2. Water Loss Audit Reporting, AFY**

DWR Table 4-4R

REPORT PERIOD START DATE		VOLUME OF WATER LOSS
MM	YYYY	
1	2016	2,951
7	2017	1,847
1	2018	2,627
1	2019	1,013
1	2020	1,225 (Estimated)

### 4.1.3 Past and Current Water Use

VWD's actual water use by customer class for 2016–2020 is shown in **Table 4-3**, along with RW demands. In 2020, approximately 59% of VWD's potable water deliveries were to single-family residential, 9% were to multifamily residential, 27% were to commercial and institutional, and 5% were to landscape.

**Table 4-3. VWD 2016-2020 Water Use, AFY**

CUSTOMER CLASS	2016	2017	2018	2019	2020
Single-Family Residential	13,056	12,700	12,468	11,430	12,208
Multi-Family Residential	1,562	1,273	1,350	1,860	1,848
Commercial/Institutional	3,137	4,771	4,549	5,482	5,487
Landscape	1,244	1,056	1,001	1,235	1,097
<b>POTABLE WATER SUBTOTAL</b>	<b>19,000</b>	<b>19,800</b>	<b>19,368</b>	<b>20,006</b>	<b>20,640</b>
Recycled Water	432	401	619	666	722
<b>TOTAL</b>	<b>19,433</b>	<b>20,201</b>	<b>19,987</b>	<b>20,673</b>	<b>21,362</b>

#### 4.1.3.1 Sales to Other Water Agencies

VWD has emergency connections with the Phelan/Pinon Hills Community Services District, Adelanto Public Utilities Authority (PUA), and Liberty Utilities Apple Valley to deliver water in emergencies. Water deliveries were made to Adelanto PUA for 2017–2020, as shown in **Table 4-4**. As these connections are intended for emergency use, VWD does not intend to regularly sell water to Phelan/Pinon Hills Community Services District and Liberty Utilities Apple Valley in the future. However, VWD expects to sell emergency water to Adelanto PUA in the future and estimates providing 900 AFY through 2045.

**Table 4-4. Sales to Other Water Agencies, AFY**

WATER SOLD	2017	2018	2019	2020
Adelanto PUA	724	348	883	865

### 4.1.4 Projected Water Use

#### 4.1.4.1 Projected Potable Water Use

VWD’s potable water use forecast was estimated in conjunction with MWA, the population projection (discussed in **Section 3.3.1**), and GPCD factors. The GPCD factors were determined for the existing customers and new customers that are expected in the future using the California Model Water Efficient Landscape Ordinance, Green Building Standards Code, and per capita urban water conservation objectives. The existing customer water factor was based upon the actual 2020 GPCD and is scaled down slightly for future use to account for future conservation efforts. The future customer water factor was estimated using the expected future indoor targets set by the CWC (Tully & Young, 2021).

The existing customer GPCD was applied to the 2020 population, and the future customer GPCD was applied to new population after 2020 at five-year increments (through 2045). Existing and future customer water use were summed to obtain the total water use for VWD’s service area. **Table 4-5** presents the projected potable water use through 2045 and GPCD, which is calculated using the projected water use and population.

**Table 4-5. Potable Water Demand Projections**

	2025	2030	2035	2040	2045
Projected Water Demand, AFY	24,720	27,090	28,190	29,250	30,480
Population	154,831	172,220	183,018	192,113	200,486
GPCD	143	140	138	136	136

In addition to these potable water demand projections, as stated in **Section 4.1.3.1**, VWD expects to continue to sell water to Adelanto PUA and estimates providing 900 AFY through 2045.

#### 4.1.4.2 Projected Recycled Water Use

VWD recently completed a Final Draft Recycled Water Master Plan (RWMP) (Water Systems Consulting, Inc., 2020) to analyze current and future RW use. VWD is currently expanding its RW distribution system at SCLA to serve RW to additional customers. VWD’s current RW customers and uses are discussed in **Section 6.1.5**. Per the RWMP, VWD expects RW demands to reach 1,139 AFY after 2040 and includes irrigation and industrial users in the SCLA area. **Table 4-6** presents the projected RW demands through 2045.

#### 4.1.4.3 Projected Water Use Summary

**Table 4-6** and **Figure 4-1** show the current and projected water use for VWD.

**Table 4-6. Demand Projections Summary, AFY**

	2020	2025	2030	2035	2040	2045
VWD Potable Water Demands	21,865	24,720	27,090	28,190	29,250	30,480
Sales to Other Agencies	865	900	900	900	900	900
<b>POTABLE WATER SUBTOTAL</b>	<b>22,730</b>	<b>25,620</b>	<b>27,990</b>	<b>29,090</b>	<b>30,150</b>	<b>31,380</b>
Recycled Water	722	885	979	1,075	1,149	1,139
<b>TOTAL</b>	<b>23,452</b>	<b>26,505</b>	<b>28,969</b>	<b>30,165</b>	<b>31,299</b>	<b>32,699</b>



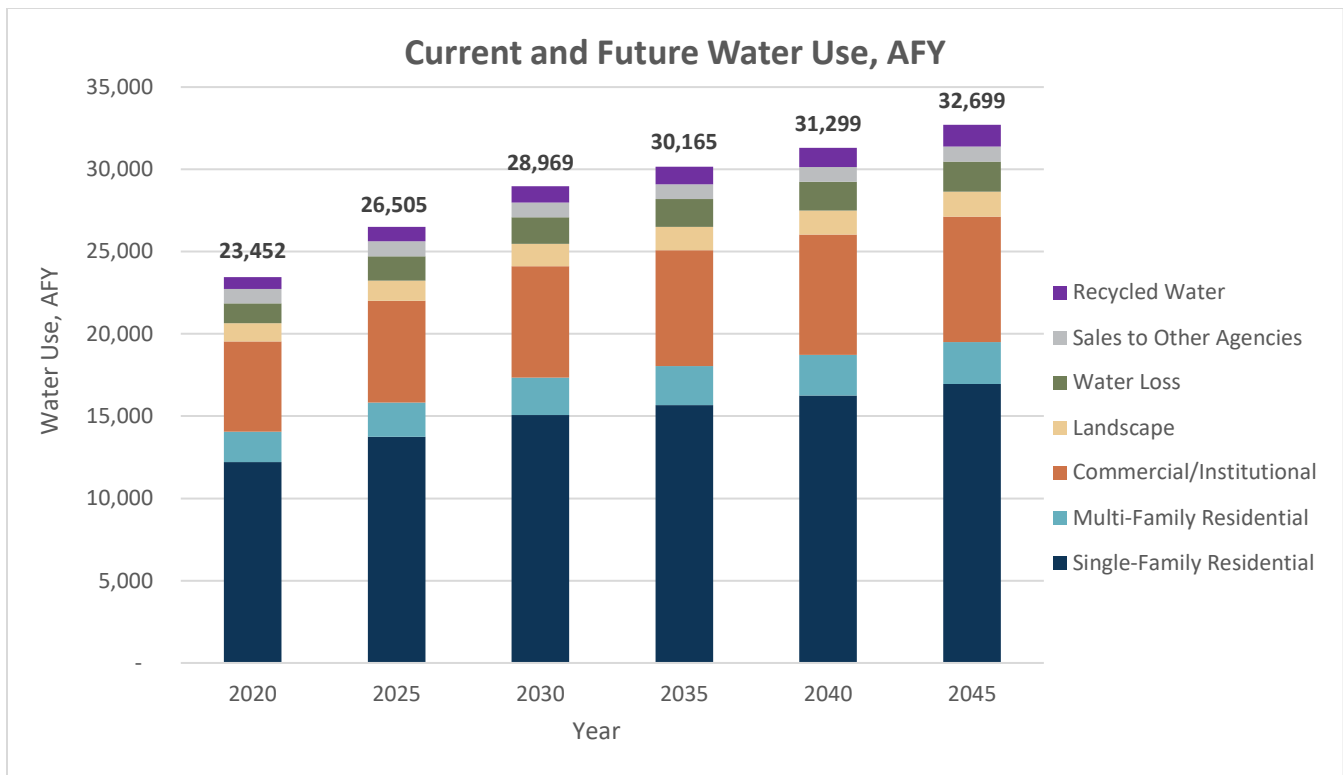


Figure 4-1. Current and Future Total Gross Water Use

Projected water use by customer class was determined by applying ratios of water use by customer type in 2020 to the total water use from 2025 through 2045, as shown in **Table 4-7**. Water losses are assumed to remain at the 2020 value of 6%. Water losses are discussed in more detail in **Section 4.1.3**.

Table 4-7. Projected Demands for Potable Water, AFY

DWR Table 4-2R

USE TYPE	ADDITIONAL DESCRIPTION	PROJECTED WATER USE				
		2025	2030	2035	2040	2045
Single Family		13,744	15,061	15,673	16,262	16,946
Multi-Family		2,081	2,280	2,373	2,462	2,565
Commercial	Includes Institutional	6,177	6,770	7,044	7,309	7,617
Landscape		1,235	1,354	1,409	1,462	1,523
Losses		1,483	1,625	1,691	1,755	1,829
Sales/Transfers/Exchanges to Other Agencies		900	900	900	900	900
<b>TOTAL:</b>		<b>25,620</b>	<b>27,990</b>	<b>29,090</b>	<b>30,150</b>	<b>31,380</b>

## 4.2 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.

The Southern California Association of Governments published the Regional Housing Needs Allocation Progress 6th Cycle Regional Housing Needs Assessment Final Allocation Plan (RHNA Housing Needs Assessment) (Southern California Association of Governments, March 2021), which assessed the cities in Southern California to determine the percent of individuals living in the community that are very low income, low income, moderate income, and above moderate income. For the City, the RHNA Housing Needs Assessment determined that 21% are very low income and 14% are low income, for a combined total of 35%. VWD applied this 35% to the projected single-family and multifamily demands to determine projected demands specifically for very low and low income single-family and multifamily users. These demands are shown in **Table 4-8**.

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

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

The conditions above apply equally to all applicants and developers.

**Table 4-8. Lower Income Housing Demands, AFY**

<b>DEMAND</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>
Single-Family	4,273	4,810	5,271	5,486	5,692	5,931
Multi-Family	647	728	798	831	862	898
<b>TOTAL</b>	<b>4,920</b>	<b>5,539</b>	<b>6,069</b>	<b>6,316</b>	<b>6,553</b>	<b>6,829</b>

## 4.3 Climate Change Considerations

Including climate change in a water use analysis aids in understanding the potential effects on long-term reliability, which, in turn, allows VWD to proactively begin planning appropriate responses with MWA. For example, hotter and drier weather may lead to an increased demand in landscape irrigation, especially during the spring and fall months, increasing the pressure on water supplies that may have availability restrictions during these periods. (Tully & Young, 2021)

However, the City's climate already has low rainfall and extreme temperatures. A small increase in irrigation is projected, but the impact to total demand is within the range of accuracy of the existing demand projections; therefore, adjustments for the near-term planning horizon are not warranted. In addition, long-term effects of climate change are not expected to impact the residential use within VWD's service area.

# 5 SBX7-7 Baseline, Targets, and 2020 Compliance

This section describes the Water Conservation Act of 2009, also known as SBX7-7; GPCD baseline; GPCD targets; and 2020 GPCD compliance. The goal of this section is to demonstrate compliance with the 2020 targeted water use reduction of 20%.

SBX7-7 was incorporated into the UWMP Act in 2009 and requires that all water suppliers increase water use efficiency with the overall goal to decrease per capita water consumption within the State by 20% by the year 2020. SBX7-7 required Department of DWR to develop certain criteria, methods, and standard reporting forms through a public process that water suppliers could use to establish their baseline water use and determine their water conservation targets.

## IN THIS SECTION

- Baselines and Target Summary
- 2020 Compliance Daily Per Capita Water Use

SBX7-7 and DWR's Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (State of California Department of Water Resources, March 2021) specify methodologies for determining the baseline water demand, 2015 interim urban water use target, and the 2020 urban water use target for VWD, as described in the following sections. The SBX7-7 Verification and Compliance Forms, which are required to be submitted to DWR to demonstrate compliance with the SBX7-7 requirements, are presented in **Appendix E**.

## 5.1 Baselines and Target Summary

VWD's baseline and 2020 target were calculated in the 2015 UWMP and has not changed for this UWMP. More details on the development of the baselines and target can be found in the 2015 UWMP and **Appendix E**. VWD's calculated water use target for 2020 is 202 GPCD.

## 5.2 2020 Compliance Daily Per Capita Water Use

Through the implementation of its active water conservation program, VWD has met its 2020 GPCD target of 202 GPCD, with an actual per capita water use of 145 GPCD in 2020. VWD also met the 2015 Interim Target of 227 GPCD, with an actual 2015 GPCD of 143. To maintain this level of water use, VWD intends to continue its current level of outreach and conservation programs for the foreseeable future.

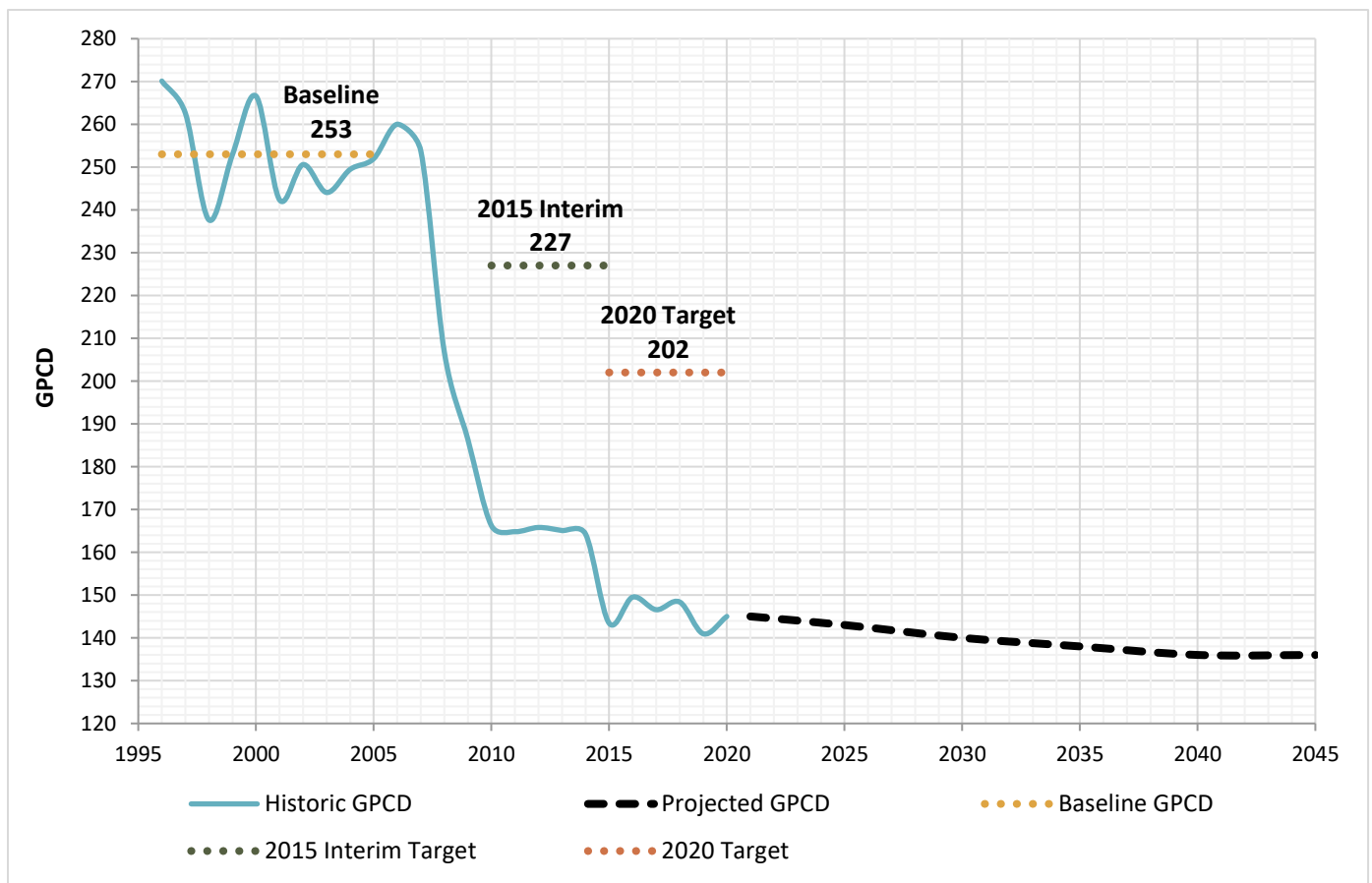
### 5.2.1 Future GPCD Projections

As discussed in **Section 4**, projected GPCD was calculated using the projected water use and population. The projected GPCD for 2025 through 2045 are presented **Table 5-1**.

**Table 5-1. Projected GPCD**

	2025	2030	2035	2040	2045
Projected GPCD	143	140	138	136	136

**Figure 5-1** illustrates the historical GPCD from 2010 through 2020 and the projected GPCD through 2045, along with the baseline and target GPCD.



**Figure 5-1. Baseline, Historic, and Projected GPCD**

# 6 Water Supply Characterization

This section describes the existing and projected supplies for VWD. VWD currently pumps potable water supplies from groundwater in the Mojave Groundwater Basin and purchases water from MWA's Regional Recharge and Recovery Project (R<sup>3</sup>), when available.

## 6.1 Water Supply Characterization

### 6.1.1 Purchased or Imported Water

VWD purchases water from R<sup>3</sup> when it is available but does not rely on purchased or imported water as a future potable water supply. Through R<sup>3</sup>, MWA delivers SWP water to recharge sites located along the Mojave River in Hesperia and southern Apple Valley. MWA recovers the recharged water at wells downstream and delivers through pipelines directly to retail water agencies. This project provides an alternate source of supply that enables agencies to reduce pumping and maintain groundwater water levels in the vicinity of their wells. The project enables MWA to use SWP water beneficially by recharging the water when supplies exceed demand. VWD began receiving water from R<sup>3</sup> in 2013 and has an agreement to purchase up to 6,800 AFY, when available. A copy of the agreement is included in **Appendix F**. The recharge sites, recovery wells, and distribution pipeline are shown in **Figure 6-1**.

#### IN THIS SECTION

- Purchased Water
- Groundwater
- Wastewater and Recycled Water
- Future Projects
- Summary of Existing and Planned Supplies
- Energy Intensity

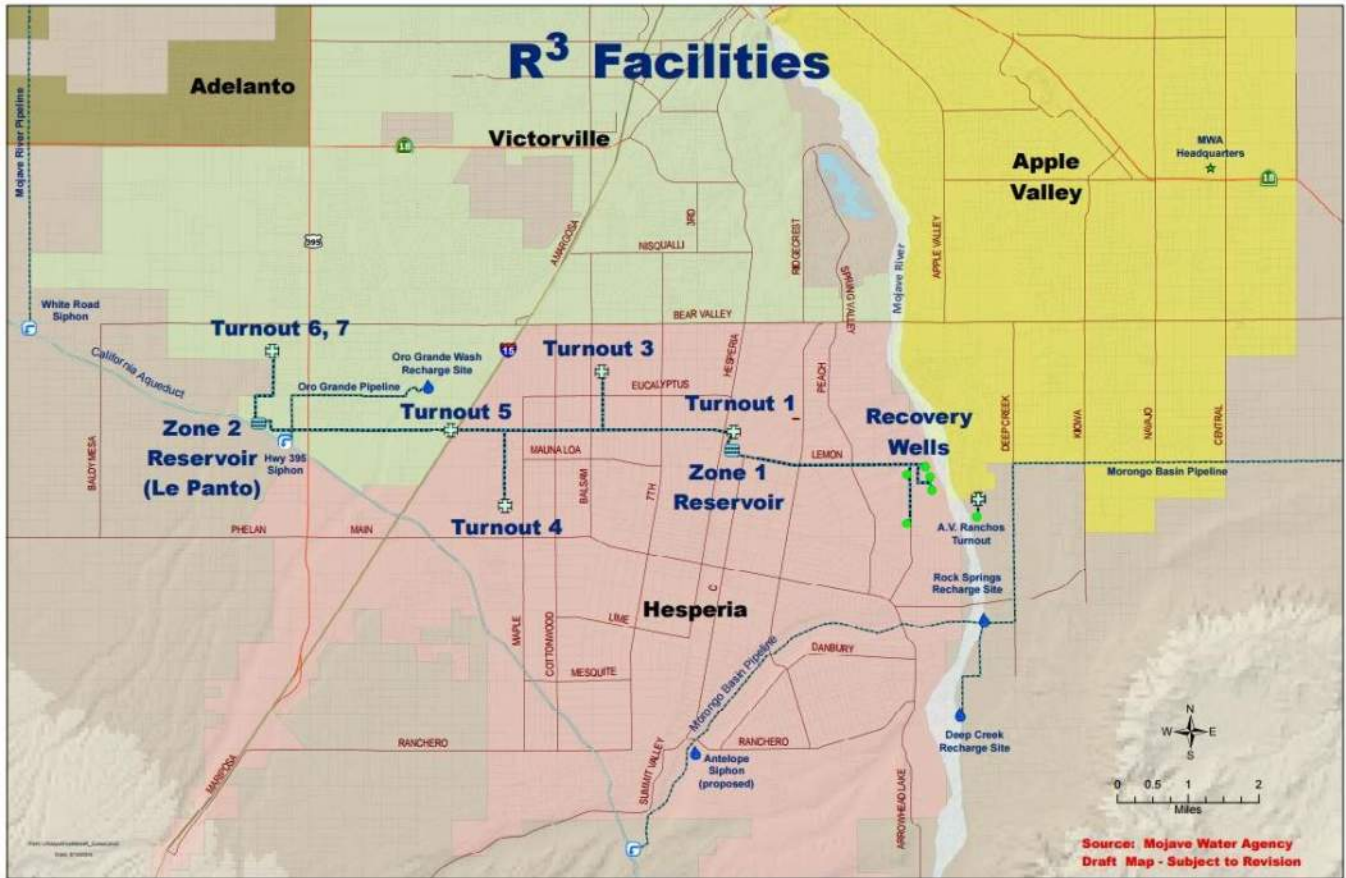


Figure 6-1. R<sup>3</sup> Facilities and Distribution Pipeline

Water supply from R<sup>3</sup> is interruptible because it depends on the amount of SWP available for storage as well as other operational constraints. VWD intends to continue maximizing purchases of water from R<sup>3</sup> when available, but because this is an interruptible source of supply, VWD does not rely on this source to meet its demands. For the purposes of this UWMP, it is assumed that VWD will meet all current and future demands through groundwater, so purchased water is not included in future supply projections. The historical, current, and estimated future amounts of purchased water are shown in Table 6-1.

Table 6-1. Historical, Current, and Projected R<sup>3</sup> Water, AFY

	2010	2015	2020	2025	2030	2035	2040
R <sup>3</sup> Water	0	3,503	3,752	0	0	0	0

6.1.1.1 High Desert Power Plant Imported Water Supply

The City also has a connection from the MWA Mojave River Pipeline to provide untreated SWP water for cooling for the High Desert Power Plant (HDPP). HDPP also stores SWP water, in the Basin and later extracts it for use when SWP water is not available to HDPP. VWD operates the pipeline that provides SWP water to HDPP as well as extraction facilities on behalf of HDPP. HDPP has its own water rights and storage account in the groundwater basin, so the HDPP’s imported water supply is not considered a supply for VWD and is not included in the data presented in this UWMP.

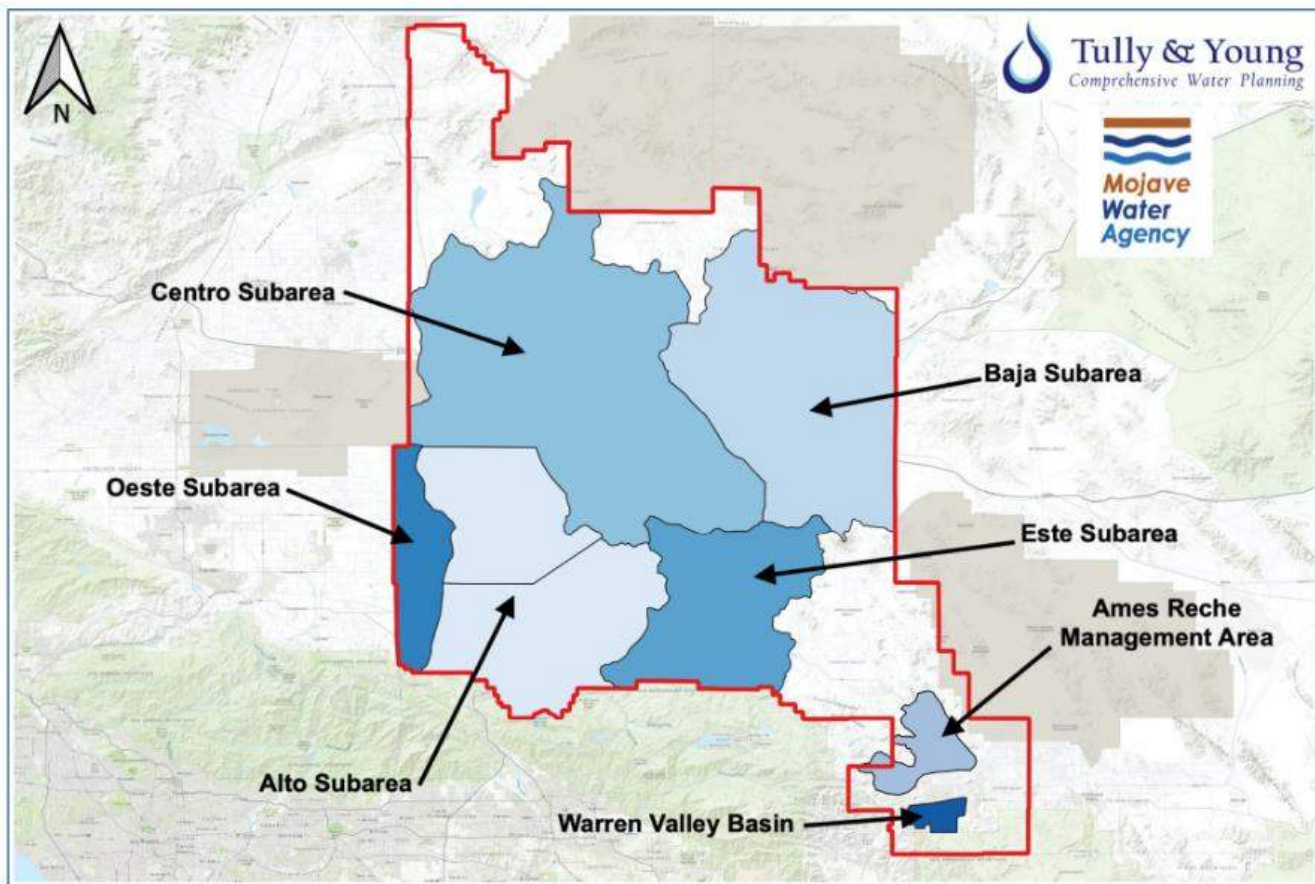
The VWD also delivers RW to HDPP as a supplemental supply for cooling, as discussed in more detail in **Section 6.1.5**.

## 6.1.2 Groundwater

VWD has 34 active groundwater wells within its distribution system that are used to pump groundwater from the Mojave River Groundwater Basin, which lies beneath the Victor Valley.

### 6.1.2.1 Mojave River Basin

The Mojave River Groundwater Basin, the largest in the region, encompasses 1,400 square miles and has an estimated total water storage capacity of nearly 5 million AF. The Mojave River Groundwater Basin Area is essentially a closed basin, which means that little groundwater enters or exits the basin. Within the basin, however, groundwater moves between the different subareas; groundwater-surface water and groundwater-atmosphere interchanges also occur. Approximately 80% of the basin's natural recharge is through infiltration from the Mojave River. Other sources of recharge include infiltration of storm runoff from the mountains and recharge from human activities, such as irrigation return flows, wastewater discharge, and enhanced recharge with imported water. More than 90% of the basin groundwater recharge originates in the San Gabriel and San Bernardino mountains. Groundwater is discharged from the basin primarily by well pumping; evaporation through soil; transpiration by plants; seepage into dry lakes, where accumulated water evaporates; and seepage into the Mojave River. The Mojave Basin Area is shown in **Figure 6-2**.



**Figure 6-2. Mojave Basin Area Within MWA's Service Area (Figure 3-6; MWA 2020 UWMP)**

Recent investigations by MWA, the US Geological Survey, and others have developed an improved understanding of the geology and hydrogeology of the Mojave Basin Area. Specifically, a more refined examination of the hydrostratigraphy has allowed for differentiation between the more permeable floodplain aquifer that has a limited extent along the Mojave River and the more extensive but less permeable regional aquifer. In the Mojave Basin Area, the Alto, Centro, and Baja subareas contain both the floodplain aquifer and the regional aquifer, while the Oeste and Este subareas contain only the regional aquifer.

The MWA IRWMP established the framework for managing future water supplies within the MWA's service area, which encompasses 4,900 square miles. Water rights within the Mojave River Basin have been the subject of litigation since the early 1990s. Riverside County Superior Court's stipulated Mojave Basin Area Judgment (Judgment) for the adjudication of the Mojave River Groundwater Basin identified MWA as the Watermaster. The Judgment stipulated that MWA has both the authority and the obligation to secure supplemental supplies as part of the solution to overdraft within the Mojave River Basin. Although the increased groundwater pumping in excess of natural supplies over the past 50 years has resulted in a decline in groundwater elevations, the groundwater basins remain capable of meeting annual water demands through dry years and consecutive multiple-dry years. The Judgment and IRWMP are intended to bring all basins into long-term hydrologic balance. Projects and water management actions are needed to continue to recharge the groundwater basins to maintain groundwater levels and protect quality. A copy of the Judgment is included in **Appendix G**.

To maintain proper water balance within each subarea, any producer, such as VWD, that produces in any year an amount of water in excess of that producer's share (Free Production Allowance [FPA]) for a subarea must buy replacement water (Replacement Water Assessment [RWA]). Replacement obligations can be met by buying additional water rights, buying imported water from the MWA, or leasing groundwater rights for one year from other water rights holders. The RWA is equal to the number of AFof excess production by the producer multiplied by the RWA rate per AF as adopted annually by the 2020 Mojave Basin Area Watermaster. Based on this year's municipal percentage for the VWD subarea, the FPA for VWD is 14,274 AFY and is subject to further ramp-down. The 14,274 AFY FPA is used as the available supply for VWD without RWA. Use over this quantity is subject to replacement obligations adopted by the Watermaster and paid to the Watermaster. When water is available, VWD can also lease water from agencies that pump less than their FPA, which can offset the amount of water in their RWA.

Producers in the Mojave Basin Area are allowed to produce as much water as they need annually to meet their requirements, according to the Judgment. An underlying assumption of the Judgment is that sufficient water will be made available to meet the needs of the basin in the future from a combination of natural supply, imported water, water conservation, water reuse, and transfers of FPA among parties. MWA is actively operating recharge sites for conjunctive use along the Mojave River Pipeline, Oro Grande Wash Pipeline, Morongo Basin Pipeline, and Silverwood Dam. Recharge sites enable the MWA to recharge SWP water into the subareas from which replacement water is purchased. These sites also enable the MWA to bank excess SWP water when available in wet years for storage to be used in dry years. R<sup>3</sup> facilities allow MWA to manage the groundwater basins surrounding VWD by delivering imported SWP water stored in upper Mojave River recharge areas to purveyors that can reduce pumping from their wells when taking R<sup>3</sup> water, which allows partial recovery of local pumping depressions.

VWD will continue aggressive water conservation efforts and increase the use of RW to offset potable water demand in an effort to balance supplies and demands into the future. Pumping beyond the FPA is anticipated to continue as needed to meet water demands and will require VWD to continue to pay replenishment fees to support additional water supply projects MWA is implementing or purchase of water rights from other agencies in the subbasin.



### 6.1.2.2 Groundwater Quality

An extensive federal, state, and local regulatory framework has evolved to protect and improve water quality for all beneficial uses. Today, many of these regulations directly influence the water management actions in the Mojave Region (Region). The regulations are designed to support continued, long-term use of the Region's water supplies for drinking water, agricultural use, and ecosystem benefits. The Federal Safe Drinking Water Act (SDWA) was originally passed by the US Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The SDWA applies to every public water system in the United States. The SDWA authorizes the US Environmental Protection Agency to set national health-based standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water. Originally, the SDWA focused primarily on treatment as the means of providing safe drinking water at the tap. Amendments in 1996 greatly enhanced the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. Under the SDWA, technical and financial aid is available for certain source water protection activities. DWR is responsible for enforcing the SDWA and California-specific drinking water regulations as defined in Title 22 of the California Code of Regulations.

The Region's groundwater basins contain numerous areas that have water quality issues. Key contaminants include arsenic, nitrates, iron, manganese, Chromium VI, and TDS. Some of these are naturally occurring in desert environments while others are associated with human activities. Measurements in excess of drinking water standards have been found for some of these constituents within the Mojave River Basin. Groundwater in these areas may have to be treated before consumption.

Numerous studies have characterized groundwater quality in the Region. Despite local groundwater quality degradation in Barstow and variability elsewhere, these studies generally confirmed the suitability of groundwater for beneficial uses in the Region. Areas of degraded groundwater quality in terms of TDS occur near Barstow and the Harper Lake area. Arsenic is a naturally occurring element in groundwater. California has established a primary maximum contaminant level (MCL) of 10 milligrams per liter (mg/L) for arsenic. Within the Region, arsenic concentrations have been measured at levels above the MCL in the Transition Zone portion of the Alto Subarea, located in the northern Alto, Baja, and Morongo sub-basins. Nitrate in irrigation water helps stimulate plant growth. In drinking water, high nitrate levels water can have acute health problems in infants younger than six months of age, causing a condition known as "blue baby syndrome." Long-term health impacts in adults are not well known. Nitrate concentrations have been measured at levels far below the primary MCL of 10 mg/L across the Region.

Many of VWD's groundwater wells meet state and federal drinking water standards without treatment. These wells receive wellhead chlorination for disinfection and pump directly into the distribution system or into storage tanks.

VWD operates three Arsenic Treatment Plants and an Arsenic Blending Pipeline. The Balsam and El Evado Arsenic Treatment Plants are coagulation/filtration treatment plants, and the La Mesa Arsenic Treatment Plant is an ion exchange plant. The Arsenic Blending Pipeline is used to blend water from a portion of the VWD's wells to produce a blended water quality that meets the MCL before entering the distribution system.

In 2014, the State Water Board established an MCL for Chromium VI at 10 microgram per liter ( $\mu\text{g/L}$ ). Previously, Chromium VI had been regulated under the 50  $\mu\text{g/L}$  primary drinking water standard for total chromium. On May 31, 2017, the Superior Court of Sacramento County issued a judgment invalidating the Chromium VI MCL for drinking water and ordering the State Water Board to adopt a new MCL for Chromium VI that adequately considers the economic feasibility of complying with the MCL. A new MCL has not yet been adopted but may in 2021.

Several of VWD’s wells were affected by the 10 µg/L requirement, and one has been temporarily taken out of service because it does not meet the MCL. VWD does not currently intend to install blending or treatment facilities for these wells because the total well production capacity is sufficient to meet demands with these wells offline. VWD will continue to monitor the water quality of this well and may be able to restore it to service if Chromium VI levels decline or if blending or treatment is added. Additionally, several wells that pump into the Arsenic Blending Line have levels of Chromium VI that exceed the MCL. VWD has adapted the operation of the Arsenic Blending Pipeline such that blended water quality meets the MCL for both arsenic and Chromium VI.

The emerging water quality constituents of concern are per- and polyfluoroalkyl substances (PFAS) and perfluorooctanoic acid (PFOA). These chemical constituents are generally produced through chemical manufacturing of items such as Teflon pans, stain-resistant carpet, and fast-food packaging. Acceptable levels for PFAS and PFOA compounds are regulated by California and have recently been lowered. As such, the regulatory actions may have some impact on the regional availability of groundwater supplies. MWA and regional purveyors are addressing this emerging issue in the region-wide management of groundwater resources and imported supplies that augment local sources.

### 6.1.2.3 Overdraft Conditions

MWA and VWD consider it a high priority to maintain stability in previously over-drafted groundwater basins and reduce overdraft in groundwater basins experiencing ongoing water table declines. Overdraft is considered a challenge for reliability not only in quantity of supply but also in quality of supply. One way to reduce overdraft throughout the basin is through artificial recharge. Further discussion of artificial recharge within the basin is in **Section 6.1.2.1**.

### 6.1.2.4 Past Five Years

Historic groundwater use by VWD over the past five years is presented in **Table 6-2**.

**Table 6-2. Groundwater Volume Pumped, AFY**

DWR Table 6-1R

GROUNDWATER TYPE	LOCATION OR BASIN NAME	2016	2017	2018	2019	2020
Alluvial Basin	Mojave Basin	17,693	18,580	17,645	16,689	18,977

### 6.1.3 Surface Water

VWD does not use surface water supplies.

### 6.1.4 Stormwater

The Judgment included an injunction against diverting stormwater flow away from downstream users of the Mojave River. Therefore, no stormwater capture projects are planned to increase water supplies.

### 6.1.5 Wastewater and Recycled Water

#### 6.1.5.1 Wastewater

The wastewater that is generated within the service boundary of VWD is collected through a gravity sewer system owned and operated by the City of Victorville. A portion of the collection system conveys wastewater to the Industrial Wastewater Treatment Plant (IWTP) that is owned and operated by VWD. A portion of the collection system discharges to a regional interceptor, which conveys the wastewater

flows to a regional wastewater treatment plant (WWTP) owned and operated by the Victor Valley Wastewater Regional Authority (VWVRA).

In 2010, VWD began operation of the IWTP, a domestic and industrial wastewater treatment plant at the SCLA with a design capacity of 2.5 million gallons per day (MGD). The IWTP is designed to treat wastewater using both anaerobic (for high-strength industrial wastewater) and aerobic (for sanitary wastewater) treatment processes. The combined flows then undergo a complete-mix activated-sludge treatment and solids-separation process using membrane bioreactor (MBR) technology. The final process is ultraviolet disinfection, resulting in tertiary treated RW that meets Title 22 requirements. Sludge from the facility is currently discharged to VWVRA's WWTP for treatment and disposal. The portion of treated effluent from IWTP that is not reused at the SCLA is conveyed to the VWVRA WWTP site for disposal at Percolation Pond 14, which the VWD owns and operates.

VWVRA is a Joint Powers Authority consisting of the Town of Apple Valley, City of Hesperia, City of Victorville, and County Service Areas of Oro Grande (Number 42) and Spring Valley Lake (Number 64). The regional plant has a current capacity of 14 MGD and is located approximately 7 miles north of the City, between SCLA and the Mojave River. VWVRA's regional WWTP discharges disinfected tertiary effluent to the Mojave River and supplies RW to VWD. In 2003, VWVRA executed a memorandum of understanding (MOU) with the California Department of Fish and Game (now California Department of Fish and Wildlife [CDFW]), which requires VWVRA to discharge 9,000 AFY of available treated effluent to the Mojave River. The MOU includes a provision to allow reduced discharges as long as a minimum flow of 15,000 AFY is measured at the Lower Narrows gage. In 2005, VWVRA and the City executed a Second Amended and Restated Agreement for Reclaimed Water Service with a perpetual term that entitles the City to take delivery of all the treated effluent from VWVRA's WWTP in excess of the amount required to be discharged under the MOU. Treated effluent that is not discharged to the Mojave River or purchased by the City is disposed of through onsite percolation ponds.

Wastewater collected, treated, and disposed of within VWD's service area in 2020 is summarized in **Table 6-3** and **Table 6-4**.

**Table 6-3. Wastewater Collected within Service Area in 2020**

DWR Table 6-2R

WASTEWATER COLLECTION			RECIPIENT OF COLLECTED WASTEWATER			
NAME OF WASTEWATER COLLECTION AGENCY	WASTEWATER VOLUME METERED OR ESTIMATED	WASTEWATER VOLUME COLLECTED FROM UWMP SERVICE AREA IN 2020, AFY	NAME OF WASTEWATER AGENCY RECEIVING COLLECTED WASTEWATER	WASTEWATER TREATMENT PLANT NAME	WASTEWATER TREATMENT PLANT LOCATED WITHIN UWMP AREA	WWTP OPERATION CONTRACTED TO A THIRD PARTY
The City of Victorville	Metered	2,335	Victorville Water District	Industrial Wastewater Treatment Plant	Yes	Yes
The City of Victorville	Metered	7,297	Victor Valley Wastewater Reclamation Authority	Victor Valley Wastewater Reclamation Authority WWTP	Yes	No
<b>TOTAL:</b>		<b>9,632</b>				

**Table 6-4. Wastewater Treatment and Discharge within Service Area in 2020**

DWR Table 6-3R

WASTEWATER TREATMENT PLANT NAME	DISCHARGE LOCATION NAME OR IDENTIFIER	DISCHARGE LOCATION DESCRIPTION	WASTEWATER DISCHARGE ID NUMBER	METHOD OF DISPOSAL	PLANT TREATS WASTEWATER GENERATED OUTSIDE THE SERVICE AREA	TREATMENT LEVEL	2020 VOLUMES, AFY				
							WASTEWATER TREATED	DISCHARGED TREATED WASTEWATER	RECYCLED WITHIN SERVICE AREA	RECYCLED OUTSIDE OF SERVICE AREA	INSTREAM FLOW PERMIT REQUIREMENT
Industrial Wastewater Treatment Plant	VVWRA	Percolation Ponds	-	Percolation ponds	No	Tertiary	2,335	1,613	722	-	-
Victorville Valley Wastewater Reclamation Authority WWTP	VVWRA	Mojave River and Percolation Ponds	-	River or creek outfall	Yes	Tertiary	7,297	7,297	-	-	-
<b>TOTAL:</b>							<b>9,632</b>	<b>8,910</b>	<b>722</b>	<b>-</b>	<b>-</b>

### 6.1.5.2 Recycled Water

Currently, VWD serves RW to HDPP for cooling water and irrigation and to Schmidt Park and the Westwinds Sports Center Baseball Field for irrigation use. RW was historically applied at the Westwinds Golf Course for irrigation; however, the golf course is now closed, and this use has been discontinued. VWD currently has temporary authorization by the Regional Board to discharge into VVWRA's lower ponds and is pursuing a permanent permit amendment for this activity. VWD also has RW fill stations to provide water for dust control at the SCLA airfield and construction sites located at SCLA and High Desert Solar site. VWD is not currently serving RW from its RW fill stations but can issue permits and begin doing so when the demand arises.

The annual volume of RW supply available to VWD from VVWRA is equal to the total treated effluent less the volume required to be discharged to the Mojave River under the MOU with CDFW. In 2020, VWD did not receive RW from VVWRA to support RW demands.

VVWRA recently completed the construction of two subregional treatment plants in Hesperia and Apple Valley that have an initial capacity of up to 1.0 MGD each. The subregional plants began limited operation in 2018 and will reduce the flows received and treated at the VVWRA WWTP. Future flows to be diverted to the subregional plants are unknown at this time. In addition, reductions in wastewater flows have occurred as a result of conservation efforts driven by the recent drought. VWD, VVWRA, and CDFW are in ongoing discussions regarding changes in available RW at VVWRA.

RW used in 2020 is summarized in **Table 6-5** and compared with the projected 2020 RW use from the 2015 UWMP.

### 6.1.5.3 Actions to Exchange and Optimize Future Recycled Water Use

VWD's RWMP analyzes current and future RW use. VWD plans to continue to pursue opportunities to expand RW use at SCLA. The SCLA Specific Plan is currently under development and proposes development with a variety of land uses, including for business park, industrial, and public open space. RW could be used at future developments throughout the SCLA for irrigation of landscaped areas. Some developments may also be able to use RW for cooling or other industrial uses; however, demands for industrial uses are highly dependent on the specific process and water quality needs. Any projections of future industrial demands would be particularly uncertain, so VWD decided to limit the evaluation of future RW demands to landscape uses throughout SCLA for the purposes of this RWMP. VWD will continue to coordinate with new developments at SCLA to identify additional RW uses and will make RW available for suitable industrial purposes whenever possible.

**Table 6-6** summarizes the projected RW use for VWD.

**Table 6-5. 2015 Recycled Water Use Projection Compared with 2020 Actual, AFY**

DWR Table 6-5R

USE TYPE	2015 PROJECTION FOR 2020	2020 ACTUAL USE
Landscape Irrigation (excludes golf courses)	30	40
Industrial Use	2,900	682
<b>TOTAL:</b>	<b>2,930</b>	<b>722</b>

**Table 6-6. Methods to Expand Future Recycled Water Use, AFY**

DWR Table 6-6R

NAME OF ACTION	DESCRIPTION	PLANNED IMPLEMENTATION YEAR	EXPECTED INCREASE OF RECYCLED WATER USE
Irrigation	Phases 1-5 of RWMP	2040	462
Irrigation	Phase 6 of RWMP	2065	848
<b>TOTAL:</b>			<b>1,310</b>

## 6.1.6 Desalination

“Desalination” refers to treatment processes that remove salts from water to achieve salinity concentrations that are acceptable for municipal and agricultural uses. The desalination strategy covers treatment of seawater as well as brackish water. Desalination technologies may also be used to treat wastewater to produce high quality RW. In California, the principal method for desalination is reverse-osmosis. This process can be used to remove salt as well as specific contaminants in water, such as disinfection byproduct precursors, volatile organic compounds, nitrates, and pathogens. As summarized below, there is no opportunity for desalination of any kind by VWD.

### 6.1.6.1 Brackish Water and/or Groundwater Desalination

The groundwater basins located under or near the VWD are not brackish and do not require desalination. Therefore, there is no water of this nature available to VWD for direct use.

### 6.1.6.2 Seawater Desalination

Because VWD is not located in a coastal area, it is neither practical nor economically feasible for VWD to implement a seawater desalination program.

## 6.1.7 Water Exchanges and Transfers

Regional water transfer and exchange opportunities are described in MWA’s 2020 UWMP.

VWD frequently executes temporary transfers of FPA or carryover water from other parties in the Alto subarea to offset a portion of excess groundwater production.

### 6.1.8 Future Water Projects

At the time of this UWMP, no potable water supply projects are planned.

#### 6.1.8.1 RW Supply—IWTP Expansion

In 2017, Woodard & Curran prepared an expansion evaluation for the IWTP to evaluate options to increase the capacity to treat the projected flows and loads through 2040, as projected in the 2016 Sewer Master Plan (David Evans and Associates, Inc, 2016). The evaluation considered maximizing the biological and hydraulic capacity of the existing treatment train using additional MBR cassettes. This option requires only installation of additional equipment within existing tanks at the IWTP and provides a relatively low-cost method to increase the capacity to 3.5 MGD in the near term. To accommodate 2040 flows, the evaluation conducted that two additional treatment trains, similar to the current train, would need to be constructed to increase the capacity to 7.55 MGD. VWD will monitor increases in flows and loads and determine the timing of the IWTP expansion needs based on updated flow projections. The additional RW could be used for industrial purposes within the SCLA area.

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

VWD’s historical, current, and projected water supplies are summarized in **Table 6-7** and **Table 6-8**. These quantities are based on projected demands in **Section 4**.

**Table 6-7. Actual Water Supplies, AFY**

DWR Table 6-8R

WATER SUPPLY	ADDITIONAL DETAIL ON WATER SUPPLY	2020		
		ACTUAL VOLUME	WATER QUALITY	TOTAL RIGHT OR SAFE YIELD
Groundwater (not desalinated)	Mojave River Basin	18,978	Drinking Water	-
Purchased or Imported Water	Mojave Water Agency R <sup>3</sup>	3,752	Drinking Water	-
Recycled Water		722	Recycled Water	-
<b>TOTAL:</b>		<b>23,452</b>		

**Table 6-8. Projected Water Supplies, AFY**

DWR Table 6-9R

		PROJECTED WATER SUPPLY									
		2025		2030		2035		2040		2045	
WATER SUPPLY	ADDITIONAL DETAIL ON WATER SUPPLY	REASONABLY AVAILABLE VOLUME	TOTAL RIGHT OR SAFE YIELD	REASONABLY AVAILABLE VOLUME	TOTAL RIGHT OR SAFE YIELD	REASONABLY AVAILABLE VOLUME	TOTAL RIGHT OR SAFE YIELD	REASONABLY AVAILABLE VOLUME	TOTAL RIGHT OR SAFE YIELD	REASONABLY AVAILABLE VOLUME	TOTAL RIGHT OR SAFE YIELD
Groundwater (not desalinated)	Mojave Basin	25,620	-	27,990	-	29,090	-	30,150	-	31,380	-
Recycled Water		885	-	979	-	1,075	-	1,149	-	1,319	-
	<b>TOTAL:</b>	<b>26,505</b>	<b>-</b>	<b>28,969</b>	<b>-</b>	<b>30,165</b>	<b>-</b>	<b>31,299</b>	<b>-</b>	<b>32,699</b>	<b>-</b>



## 6.2 Energy Intensity

“Water energy intensity” is the total amount of energy, calculated on a whole-system basis, required for the use of a given amount of water in a given location. This calculation is intended to report energy use for facilities within VWD’s operational control for extraction, diversion, conveyance, treatment, and distribution for the entirety of 2020. Energy that others use to supply water to VWD, such as to produce and deliver water from the R<sup>3</sup>, is not included. Reporting water energy intensity has many benefits for water utilities 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 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 at each water acquisition and delivery step and the ability to compare energy use among similar agencies.

VWD’s 2020 energy intensity is provided in **Table 6-9**.

**Table 6-9. 2020 Energy Intensity**

ENERGY CONSUMED IN 2020, KWH	2020 TOTAL PRODUCTION, AF	2020 ENERGY INTENSITY, KWH/AF
15,910,934	18,978	838
kWh = kilowatt per hour		



# 7 Water Service Reliability and Drought Risk Assessment

**This section considers VWD’s water supply reliability during average, single-dry, and multiple-dry water years. The supply reliability assessment discusses factors (i.e., climatic, environmental, water quality, and legal) that could potentially limit the expected quantity of water available from VWD’s current sources of supply through 2045.**

Multiple drought scenarios are considered and the quantitative impacts of the aforementioned factors on water supply and demand are discussed as well as possible methods for addressing these issues. The management tools that VWD has implemented to maximize current resources, identify supplemental sources of supply, and minimize the need to import water from other regions are also discussed.

## IN THIS SECTION

- Constraints on Water Sources
- Water Service Reliability Assessment
- Drought Risk Assessment

## 7.1 Water Service Reliability Assessment

### 7.1.1 Constraints on Water Sources

Per the Judgment, producers in the Mojave Basin Area are allowed to produce as much water as they need annually to meet their requirements. An underlying assumption of the Judgment is that sufficient water will be made available to meet the needs of the basin in the future from a combination of natural supply, imported water, water conservation, water reuse, and transfers of FPA among parties.

Portions of the Mojave Basin Area contain numerous, naturally occurring contaminants, including arsenic, nitrates, iron, manganese, Chromium VI, and excess TDS. VWD operates several treatment and blending facilities to ensure that water delivered to its customers meets the drinking water standards. VWD will continue to monitor groundwater quality and implement additional treatment and blending as needed to maintain the quality of the water supply.

Climate change impacts that may have a long-term effect on water supplies include increased temperatures; sea level rise; reduced winter snowpack; and altered precipitation patterns, including more frequent and intense storm events. Mitigation and adaptation strategies are being investigated and implemented by VWD and MWA to address the effects that climate change will have on their future water supply.

Additional details on the water quality of the Mojave Basin Area as it pertains to VWD and climate change's effect on VWD's supply are provided in **Section 6.2.2** and **Section 3.2.1**, respectively.

### 7.1.2 Year Type Characterization

In general, groundwater and RW supplies are less vulnerable to seasonal and climatic changes than surface water (local or imported) supplies. Natural groundwater supply estimates are based on long-term averages, which account for inconsistency in natural supplies (i.e., historic periods of drought are included in the long-term average). Therefore, VWD does not have any inconsistent water sources that result in reduced supplies in dry or multiple-dry years. MWA is actively operating recharge sites for conjunctive use along the Mojave River Pipeline, Oro Grande Wash Pipeline, Morongo Basin Pipeline, and Silverwood Dam. Recharge sites enable MWA to recharge SWP water into the subareas where replacement water is purchased. These sites also enable MWA to bank excess SWP water when available in wet years for storage to be used in dry years. R<sup>3</sup> facilities allow MWA to manage the groundwater basins surrounding VWD by delivering imported SWP water stored in upper Mojave River recharge areas to purveyors, which can then reduce pumping from their wells when taking R<sup>3</sup> water, facilitating partial recovery of local pumping depressions. For these reasons, supplies are considered unchanged in average, dry, and multiple-dry years.

The basis for the "year type" is determined from the single-driest and multiple-driest years using precipitation data (1940-2020) from National Ocean and Atmospheric Administration Station 049325 in Victorville. Even though precipitation is variable, however, groundwater supply estimates are based on long-term averages, which account for these variabilities so that groundwater is assumed to be 100% available in single-dry and multiple-dry year conditions.

Per UWMP requirements, VWD has evaluated reliability for an average year, single-dry year, and a five-consecutive-dry-years period. The UWMP Act defines these years as:

- **Average Year.** This condition represents the water supplies a supplier considers available during normal conditions. This could be a single year or averaged range of years that most closely represents the average water supply available.
- **Single-Dry Year.** The single dry year is recommended to be the year that represents the lowest water supply available. The single lowest year of precipitation was 1953, with 1.3 inches per year.
- **Five-Consecutive-Years Drought.** The driest five-year historical sequence for the supplier, which may be the lowest average water supply available for five years in a row. The lowest five years of precipitation was 2013 to 2017, with an average of 3.5 inches per year.

### 7.1.3 Water Service Reliability

Demand during dry years was assumed to remain constant because of ongoing state and local conservation programs. Groundwater supply is assumed to remain 100% available because the long-term average of the groundwater basin includes dry periods, and no single or multiple-year dry cycle affects the long-term yield of the basin. Supplies are sufficient to meet average, single-dry year, and multiple-dry years demands through year 2045, as shown in **Table 7-1**.

**Table 7-1. Supply and Demand Comparison, AFY**

	2025	2030	2035	2040	2045
<b>Supply Totals</b>	26,505	28,969	30,165	31,299	32,699
<b>Demand Totals</b>	26,505	28,969	30,165	31,299	32,699
<b>DIFFERENCE</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

According to the MWA 2020 UWMP, MWA has adequate supplies to meet the region’s demands and replacement water needs during average, single-dry year, and five consecutive dry years from 2020 to 2065. VWD’s demand projections were provided to MWA for inclusion in its analysis; therefore, it is concluded that VWD has adequate supplies to meet demands during average, single-dry year, and five consecutive dry years throughout the 25-year planning period. VWD will continue aggressive water conservation efforts, increased use of RW to offset potable water demand, and participation in new water supply projects with MWA to ensure that it has enough supply to continue to meet demands.

## 7.2 Drought Risk Assessment

A new provision of the CWC directs suppliers to prepare a Drought Risk Assessment (DRA). The DRA considers a drought period that last five consecutive years, starting from the year following when the assessment is conducted. For this UWMP, the DRA considers five consecutive dry years from 2021 through 2025. VWD may conduct an interim update or updates to this DRA within the five-year cycle of its UWMP update.

The DRA analysis enables VWD to examine the management of its supplies during stressed hydrologic conditions and an opportunity to evaluate whether it may need to enact its WSCP during the next actual drought period lasting at least five years. The projected gross water use for the five-year DRA is based on unrestricted potable demand. The reliability of supplies over a five-consecutive-years drought is described in **Section 7.1.2. Table 7-2** compares the total projected supply and demand for the five-year DRA for 2021 through 2025. As shown, VWD does not expect to enact its WSCP for a five-year consecutive year drought based on the unrestricted potable demand projections and the current supply portfolio and reliability.

Although projections in this UWMP show that VWD's water supplies are sufficient to meet the demands even during a 5-year drought, VWD remains committed to water conservation and to being a good steward of local water resources to preserve supplies for the future due to the possibility of experiencing more severe droughts than anticipated in this UWMP.

**Table 7-2. Drought Risk Assessment, AFY**

	2021	2022	2023	2024	2025
<b>DEMAND TOTALS</b>	24,063	24,674	25,285	25,896	26,505
<b>SUPPLY TOTALS</b>	24,063	24,674	25,285	25,896	26,505
<b>DIFFERENCE</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

# 8 Water Shortage Contingency Plan

**This section provides a summary of VWD's Water Shortage Contingency Plan.**

The WSCP is a detailed plan for how VWD intends to respond to foreseeable and unforeseeable water shortages. A water shortage occurs when the supply is reduced to a level that cannot support the normal demand at any given time or if the State mandates a cutback regardless of supplies.

The intent of the WSCP is to provide guidance to VWD's governing body, its staff, and the public by identifying anticipated water shortages and response actions to allow for efficient management of any water shortage with predictability and accountability. Good preparation provides the tools to maintain reliable supplies and reduce the impacts of supply interruptions resulting from extended drought or catastrophic supply interruptions.

## IN THIS SECTION

- WSCP Overview

VWD's WSCP describes the following:

1. **Water Supply Reliability Analysis.** Identifies the key issues that may trigger a shortage condition within the service area.
2. **Annual Water Supply and Demand Assessment Procedures.** Describes the methodology for assessing the system's reliability for the coming year and the steps to formally approve any water shortage levels and response actions.
3. **Standard Water Shortage Stages.** Establishes water shortage levels to clearly identify and prepare for shortages.
4. **Shortage Response Actions.** Describes the response actions that may be implemented or considered for each stage to reduce gaps between supply and demand.
5. **Communication Protocols.** Describes communication protocols to inform customers, the public, and government agencies of shortage conditions and requirements.
6. **Compliance and Enforcement.** Defines compliance and enforcement actions available to administer demand reductions.
7. **Legal Authority.** Lists the legal authorities available to declare a water shortage and implement and enforce response actions.
8. **Financial Consequences of WSCP Implementation.** Describes the anticipated financial impact of implementing water shortage stages and identifies mitigation strategies.
9. **Monitoring and Reporting.** Summarizes the monitoring and reporting techniques to evaluate the effectiveness of shortage response actions and overall WSCP implementation; results are used to determine whether additional shortage response actions should be activated or if efforts are successful and response actions should be adjusted.
10. **WSCP Refinement Procedures.** Discusses the factors that may trigger updates to the WSCP as new information becomes available.
11. **Special Water Features Distinctions.** Defines special water features, which are separate from pools and spa.
12. **Plan Adoption, Submittal, and Availability.** Describes the process for WSCP adoption, submittal, and availability after each revision.

The WSCP is a standalone document that can be modified as needed and is included as **Appendix A**.





# 9 Demand Management Measures

This section provides a comprehensive description of the water conservation programs that VWD has implemented for the past five years, is currently implementing, and plans to implement in the future.

## 9.1 Existing Demand Management Measures

### 9.1.1 Water Waste Prevention Ordinances

VWD Ordinance Number A-101-89 adopted a program of voluntary water conservation and restrictions on water use during water supply shortages and emergencies. VWD promotes and advertises a water waste hotline number for anyone to report water waste in neighborhoods within the City’s boundaries (1-866-955-4H2O). Staff rearrange hours to conduct nightly, after-hours, and weekend canvassing of the entire water system during which they survey for violations of the ordinance. Door-tag flyers have been made to proactively notify customers of the watering restrictions, including bill inserts, envelope sniping, etc.

On May 19, 2015, Ordinance No. VWD-012 (“VWD-012”) was adopted, establishing Chapter 10.05 of the Victorville Municipal Code, which serves as the VWD standards, guidelines, and procedures for year-round water conservation to prevent the waste or unreasonable use of water. It also specifies restrictions, prohibitions, and limitations on water use pursuant to the State Water Board final regulations implemented in response to the Governor’s Executive Order B-29-15. This order calls for action to address the State’s escalating drought and water shortage conditions.

#### IN THIS SECTION

- Demand Management Measures
- Public Outreach
- Past Implementation
- Future Water Use Objectives

To promote flexibility and provide for increasingly more stringent water use prohibitions and conservation requirements when drought and water supply shortage conditions intensify, VWD-2338 contains one year-round conservation stage (Stage 1) and three Water Supply Shortage Stages (Shortage Stages 2, 3, and 4). These stages can be activated by resolutions adopted by the City Council when the VWD General Manager so recommends (following noticed public hearings). These shortage stages can likewise be deactivated in the same fashion when drought and water supply shortage conditions cease or become less severe.

### 9.1.2 Metering

VWD meters and bills 100% of existing accounts by volume of use. VWD performs meter reading on a monthly basis and bills customers on a monthly basis. All customers are billed a meter charge and a consumption charge for each unit of water consumed. More details on rate structures are provided in VWD's WSCP.

VWD has installed automatic meter-reading systems that allow meter readers to collect data from their moving vehicles while traveling. This is faster, more accurate, and more cost-effective than hand reading. The meter-reading system also archives consumption information. The data are used to identify leaks, address customer consumption concerns, and monitor water conservation efforts.

### 9.1.3 Conservation Pricing

VWD adopted new water rates on July 1, 2019. The rate structure collects the projected water supply costs from volumetric charges (consumption rate) and the remaining revenue requirement from fixed (meter) charges. The volumetric rate is uniform for all customers and does not include a tiered rate.

The new volumetric rate is set to the marginal cost of water, meaning that changes in consumption would cause corresponding changes in revenue and expenses. The rate structures include drought rates to ensure VWD collects sufficient revenue to cover costs if water sales continue to decline.

### 9.1.4 Public Education and Outreach

#### 9.1.4.1 Public Information Programs

Public information programs consist of distributing water use efficiency information to the public through a variety of methods, including brochures, radio, television, school presentations and videos, and websites. VWD uses online media, including Twitter and Facebook, to promote articles and feature water conservation. VWD also promotes water conservation by using its website as a source for conservation tips, including indoor and outdoor water use, water-smart landscaping, guides to high-desert gardening, and locations of local water-wise nurseries.

VWD's Conservation Division staff participated in a variety of events in 2016 through 2019, including 3-Day Expo, Women's Expo, Home and Garden Show at San Bernardino County Fairgrounds, Spring Valley Lake Expo, and Fall Festival and National Night out at City Hall. The Conservation Division staff also participated in three Pop Up events at various locations in the City.

Due to COVID-19 restrictions Conservation Division staff conducted four online workshops, including "3 easy steps to convert your lawn into a water efficient landscape", watering scheduling guidelines, water efficient gardening, and outdoor water conservation and dynamics of drip conversion.

VWD's Conservation Division staff help residential and commercial customers to reduce water waste and save money on water bills through onsite visits to residents and businesses and distribution of Conservation Kits to eligible homeowners.

#### 9.1.4.2 School Education Program

VWD Conservation Division staff from continued to conduct a program for grade school classes, reaching hundreds of students. From 2016 through 2019, the Conservation Division staff concentrated on the Water Cycle Bracelet program and the Incredible Edible Aquifer program. Due to COVID-19 restrictions, there were no classroom water education programs in 2020.

#### 9.1.5 Programs to Assess and Manage Distribution System Real Losses

VWD staff performs the following steps to minimize water losses from the distribution system:

- Regularly inspects for leaks in pipeline and production/distribution facilities.
- Provides adequate staff on duty to respond quickly to pipe ruptures, leaks, and repairs. Staff is available for service laterals inspections.
- Supports an ongoing valve-exercising program by regularly exercising all control and shut-off valves so that leaks can be corrected in a timely manner.

VWD also actively monitors its water distribution system through annual completion of water audits, providing water audit training, and annual calibration and testing of 40 source production meters. The AWWA Water Audits for 2016–2019 have been completed and are attached in **Appendix D**.

#### 9.1.6 Water Conservation Program Coordination and Staffing Support

Program funding is provided through water rates and includes the budget for a Water Conservation Supervisor and two Water Conservation Specialists. These three positions can be reached by calling the Conservation Hotline number at 1-866-955-4426. VWD continues to offer indoor and outdoor water audits to commercial, industrial, and institutional accounts through their Free Water Audit program.

#### 9.1.7 Other Demand Management Measures

VWD's current rebate program(s) are described below.

##### 9.1.7.1 Income-qualified Toilet Replacement Program

VWD Conservation Division staff coordinated a toilet exchange program to replace seven hundred seventeen (717) 3.0 gallons per flush or greater toilets with 1.28 gallons per flush high efficiency water savings toilets from 2016 through 2019. All toilet exchanges programs were halted in 2020 due to COVID-19.

## 9.2 Reporting Implementation

### 9.2.1 Implementation Over the Past Five Years

VWD maintains records for each of the programs described above, including the extent of each program and the expenditures. As described above, the City implemented several conservation-based programs for the public over the past five year to assist in reducing demands. Conservation efforts are expected to continue.

### 9.2.2 Implementation to Achieve Water Use Targets

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

## 9.3 Water Use Objectives (Future Requirements)

The State of California is developing water use efficiency standards that will require suppliers to limit water use to allowable levels for indoor use, landscape irrigation, and other categories. The allowable indoor residential use is scheduled to reduce to 50 GPCD by 2030. The State is also preparing performance standards for water loss from the distribution system. These future regulations and potential variances are still being reviewed and finalized with stakeholder input.

# 10 Plan Adoption, Submittal, and Implementation

This section describes steps taken to adopt and submit the and to make it publicly available. VWD's 2020 UWMP was adopted on June 15, 2021.

## 10.1 Notice of Public Hearing

Before the public hearing, VWD made a draft of the Water Shortage Contingency Plan (WSCP) and the UWMP available for public inspection at VWD's office and on the VWD website. Pursuant to CWC Section 10642, general notice of the public hearing was provided through publication of the hearing date and time and posting of the hearing at VWD's office.

**Table 2-2** provides a summary of the notifications that were issued as a part of VWD's development of the UWMP. VWD notified the public within its service area of the opportunity to provide input regarding the UWMP. A copy of the public outreach materials, including newspaper notices and invitation letters, are included in **Appendix I**.

### IN THIS SECTION

- Public Hearing Notices
- Public Hearing and Adoption
- Plan Submittal
- Public Availability

## 10.2 Public Hearing and Adoption

VWD held a public hearing regarding its WSCP and UWMP on June 15, 2021, prior to their adoption.

The WSCP and UWMP were publicly reviewed during the June 15, 2021 public hearing. This hearing provided the cities, counties, and other members of the public a chance to review the staff reports and to attend the hearing to provide comment. The public hearing took place before the adoption, allowing opportunity for the reports to be modified in response to public input. Following the public hearing, the WSCP and UWMP were adopted by VWD on June 15, 2021.

A copy of the Resolution of Plan Adoption signed by the VWD council members and a cover letter addressed to DWR is included as **Appendix J** of this UWMP. The UWMP includes all applicable information necessary to meet the requirements of the CWC. The 2020 UWMP and WSCP were submitted to the DWR within 30 days of adoption.

### 10.3 Plan Submittal

A hard copy of the 2020 UWMP and WSCP were sent to the California State Library and electronic copies were sent to DWR (electronically using the WUEdata reporting tool) and electronic copies to all cities and counties within VWD's service area within 30 days of adoption.

### 10.4 Public Availability

To fulfill the requirements of CWC Section 10642 of the UWMP Act, VWD made the 2020 UWMP and WSCP available online (see below) and at the main VWD office located at 14343 Civic Drive, Victorville, CA 92392, between the hours of 8:00 am and 5:00 pm, for public review within 30 days of adoption.

### 10.5 Amending an Adopted UWMP or WSCP

Amendments to the VWD's 2020 UWMP and WSCP will be made on an as-needed basis. Should VWD need to amend the adopted 2020 UWMP or WSCP in the future, VWD will hold a public hearing for review of the proposed amendments to the document and send a 60-day notification letter to all cities and counties within their service area and notify the public in the same manner as set forth in this UWMP. Once the amended document is adopted, a copy of the finalized version will be distributed to the California State Library, DWR (electronically using the WUEdata reporting tool), and all cities and counties within VWD's service area within 30 days of adoption. The finalized version will also be made available to the public both online on VWD's website and in person at VWD's office during normal business hours.

# 11 References

City of Victorville. (2008). *City of Victorville General Plan 2030*.

David Evans and Associates, Inc. (2016). *City of Victorville Sewer Master Plan*.

Kennedy/Jenks Consultants. (2014). *Mojave Integrated Regional Water Management Plan*.

Southern California Association of Governments. (March 2021). *Regional Housing Needs Allocation Plan 6th Cycle*.

State of California Department of Water Resources. (March 2021). *Urban Water Management Plan Guidebook 2020*.

Tully & Young. (2021). *Mojave Water Agency 2020 Urban Water Management Plan — Public Draft*.

UCR School of Business. (2020). *Mojave Water Agency Population Forecast*.

Water Systems Consulting, Inc. (2020). *Final Draft 2019 Recycled Water Master Plan*.





# A

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## Appendix A - VWD's Water Shortage Contingency Plan



VICTORVILLE WATER DISTRICT

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# Water Shortage Contingency Plan

## Final

JUNE 2021

Prepared by Water Systems Consulting, Inc.





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# LIST OF ACRONYMS

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Annual Assessment	Annual Water Supply and Demand Assessment
AWIA	America’s Water Infrastructure Act
City	City of Victorville
City’s Code	City’s Municipal Code
CWC	California Water Code
DWR	State of California Department of Water Resources
ERP	Emergency Response Plan
RRA	Risk and Resilience Assessment
State	State of California
UWMP	2020 Urban Water Management Plan
VWD	Victorville Water District
WSCP	Water Shortage Contingency Plan

# Water Shortage Contingency Plan

**This Water Shortage Contingency Plan (WSCP) is a strategic plan that the Victorville Water District uses to prepare for and respond to water shortages.**

A water shortage occurs when water supply available is insufficient to meet the normally expected customer water use at a given point in time. A shortage may occur due to a number of reasons, such as water supply quality changes, climate change, drought, regional power outage, and catastrophic events (e.g., earthquake). Additionally, the State of California (State) may declare a statewide drought emergency and mandate that water suppliers reduce demands, as occurred in 2014. The WSCP serves as the operating manual that VWD will use to prevent catastrophic service disruptions through proactive, rather than reactive, mitigation of water shortages. This WSCP provides a process for an Annual Water Supply and Demand Assessment and structured steps designed to respond to actual conditions. This level of detailed planning and preparation provide accountability and predictability and will help VWD maintain reliable supplies and reduce the impacts of any supply shortages and/or interruptions.

This WSCP was prepared in conjunction with VWD's 2020 Urban Water Management Plan (UWMP) and is a standalone document that can be modified as needed. This document is compliant with the California Water Code (CWC) Section 10632 and incorporated guidance from the State of California Department of Water Resources (DWR) UWMP Guidebook.

The WSCP describes the following:

1. **Water Service Reliability Analysis:** Summarizes VWD's water supply analysis and reliability and identifies any key issues that may trigger a shortage condition.
2. **Annual Water Supply and Demand Assessment Procedures:** Describes the key data inputs, evaluation criteria, and methodology for assessing the system's reliability for the coming year, and the steps to formally declare any water shortage levels and response actions.
3. **Six Shortage Stages:** Establishes water shortage levels to clearly identify and prepare for shortages.
4. **Shortage Response Actions:** Describes the response actions that may be implemented or considered for each stage to reduce gaps between supply and demand.
5. **Communication Protocols:** Describes communication protocols under each stage to ensure customers, the public, and government agencies are informed of shortage conditions and requirements.
6. **Compliance and Enforcement:** Defines compliance and enforcement actions available to administer demand reductions.
7. **Legal Authority:** Lists the legal documents that grant VWD the authority to declare a water shortage and implement and enforce response actions.
8. **Financial Consequences of WSCP Implementation:** Describes the anticipated financial impact of implementing water shortage stages and identifies mitigation strategies to offset financial burdens.
9. **Monitoring and Reporting:** Summarizes the monitoring and reporting techniques to evaluate the effectiveness of shortage response actions and overall WSCP implementation. Results are used to determine if additional shortage response actions should be activated or if efforts are successful and response actions should be reduced.
10. **WSCP Refinement Procedures:** Describes the factors that may trigger updates to the WSCP and outlines how to complete an update.
11. **Special Water Features Distinctions:** Water use for decorative features shall be limited unless necessary to sustain aquatic life. Decorative features include ornamental fountains, ponds, and other aesthetic features.
12. **Plan Adoption, Submittal, and Availability:** Describes the process for the WSCP adoption, submittal, and availability after each revision.



## 1.1 Water Supply Reliability Analysis

As part of the 2020 UWMP, VWD completed a water supply reliability analysis for normal, single-dry, and five-year consecutive dry year periods. As described in Chapter 7 of VWD's 2020 UWMP, the effects of a local drought are not immediately recognized because the region uses the local groundwater basins to simulate a large reservoir for long-term storage. VWD is able to pump additional groundwater to meet increased demands in dry years and participates in efforts to replenish the basins with imported and local water through regional recharge programs. Based on the analysis, VWD does not anticipate any supply shortage due to single or consecutive dry years. Even though localized drought conditions should not affect supply, VWD participates in several ongoing water conservation measures and regional recharge projects to optimize and enhance the use of regional water resources. VWD will use this WSCP as appropriate to reduce the demand during critical drought years or other supply emergencies.

A Drought Risk Assessment was also performed to analyze supply reliability for the next five years, 2021 through 2025. Similarly, the results show that VWD's water supply is reliable and is not expected to see impactful change under drought conditions.

## 1.2 Annual Water Supply and Demand Assessment

As an urban water supplier, VWD must prepare and submit an Annual Water Supply and Demand Assessment (Annual Assessment) per CWC Section 10632.1. Starting in 2022, the Annual Assessment will be due by July 1 of every year. The Annual Assessment is an evaluation of the near-term outlook for supplies and demands to determine whether the potential for a supply shortage exists and whether there is a need to trigger a WSCP shortage level and response actions in the current calendar year to maintain supply reliability. This process will take place at the same time each year based on known circumstances and information available to VWD at the time of analysis and can be update or revised at any time if circumstances change.

VWD will establish and convene an internal WSCP Team to conduct the Annual Assessment each year. The WSCP may include the following staff:

- General Manager
- Water Supply/Engineering Staff
- Water Conservation Staff
- Public Works Staff
- Finance

The Annual Assessment procedure, including key data inputs and evaluation criteria, is summarized in **Table 1-1**.

**Table 1-1. Annual Assessment Procedure**

<b>TIMING</b>	<b>ASSESSMENT ACTIVITIES</b>	<b>PROCEDURE, KEY DATA INPUTS, EVALUATION CRITERIA AND OTHER CONSIDERATIONS</b>	<b>STAFF RESPONSIBLE</b>
<b>Oct-Nov</b>	Estimate unconstrained demands for coming year	Demands will be estimated based on water sales forecasts from annual budget or prior year demands plus any anticipated changes	Water Supply/Engineering
<b>Oct-Nov</b>	Estimate available supplies for the year, considering the following year will be dry	Previous year supplies (from Electronic Annual Report Water Supply) will be reviewed and compared to estimated demands for the coming up year to determine estimated supplies. VWD will coordinate with Mojave Water Agency to determine availability of Regional Recharge and Recovery Project water supply.	Water Supply/Engineering
<b>Jan - Feb</b>	Consider potential constraints that may impact supply delivery	Identify any known regional or VWD infrastructure issues that may pertain to near-term water supply reliability, including repairs, construction, and environmental mitigation measures that may temporarily constrain capabilities, as well as any new projects that may add to system capacity.  Identify any facilities out of service due to water quality problems, equipment failure, etc. that may impact normal water deliveries.	Water Supply/Engineering
<b>Feb</b>	Convene WSCP Team to conduct Annual Assessment	Compare supplies and demands and discuss any constraints that may impact supply delivery. If the potential for a shortage exists, determine which shortage response level and actions are recommended to reduce/eliminate the shortage.  Additionally, if the State declares a drought state of emergency and requires demand reductions, the WSCP Team will determine which water shortage level and response actions are needed to comply with the State mandate.	WSCP Team
<b>Jun</b>	City of Victorville (City) Council review and action	If the potential for a shortage exists or the State has mandated demand reductions, the results of the Annual Assessment will be presented to the VWD City Council, including the recommended shortage level and response actions. City Council may order the implementation of a shortage level and will adopt a resolution declaring the applicable water shortage level.	General Manager City Council
<b>On-going</b>	Implement WSCP actions, if needed	Relevant members of VWD staff will implement shortage response actions associated with the declared water shortage level	WSCP Team
<b>By July 1</b>	Submit Retail Annual Assessment	Send Final Retail Annual Assessment to DWR	WSCP Team

## 1.3 Six Standard Water Shortage Levels

Water agencies relying solely on groundwater sources which are being managed under an adjudication, such as the VWD, are less likely to experience water shortages than those agencies relying primarily on surface water, due to the limited influence of climatic variability on groundwater supplies. Nevertheless, it is still important for groundwater agencies to reduce production during drought years to avoid excessive overdraft of the groundwater basin. VWD's rationing plan will be invoked during declared water shortages. Each stage includes a water reduction objective expressed as a percentage of normal demands. The rationing plan is dependent on the cause, severity, and anticipated duration of the water supply shortage.

### Stage 1: Normal Water Supply Condition (Year-Round Water Conservation)

Stage 1 (when VWD is able to meet all the water demands of its customers in the immediate future) shall be in effect at all times, unless the City Council otherwise declares under the provisions of Section 10.05.070 of VWD Ordinance No. VWD-012 that one or more of the VWD's stages are in effect. During Conservation Stage 1, it shall be unlawful and a violation of VWD Ordinance No. VWD-012 for any water user to make, cause, use, or permit the use of water in any manner contrary to the provisions of the prohibitions listed in **Table 1-3**. The VWD's Ordinance No VWD-012 is available in Attachment 2.

### Stage 2: Threatened Water Supply Shortage

Stage 2 shall be in effect when VWD's ability to provide water for ordinary domestic and commercial uses may be adversely impaired or threatened. Shortage Stage 2 will be implemented when a 10% to 28% reduction in total potable water production or water usage must be met. The actual percentage reduction required (based on State conservation mandates and other contributing factors) will be indicated in the VWD resolution enacting Shortage Stage 2. During Shortage Stage 2, it shall be unlawful and a violation of VWD Ordinance No. VWD-012 for any water user to make, cause, use, or permit the use of water in any manner contrary to the prohibitions listed in **Table 1-3**.

### Stage 3: Critical Water Supply Shortage

Stage 3 shall be in effect when VWD's ability to provide water for ordinary domestic and commercial uses may be critically impaired or threatened. Shortage Stage 3 will be implemented when a 29% to 40% reduction in total potable water production or water usage must be met. The actual percentage reduction required (based on State conservation mandates and other contributing factors) will be indicated in the VWD resolution enacting Shortage Stage 3. During Shortage Stage 3, it shall be unlawful and a violation of VWD Ordinance No. VWD-012 for any water user to make, cause, use, or permit the use of water in any manner contrary to the prohibitions listed in **Table 1-3**.

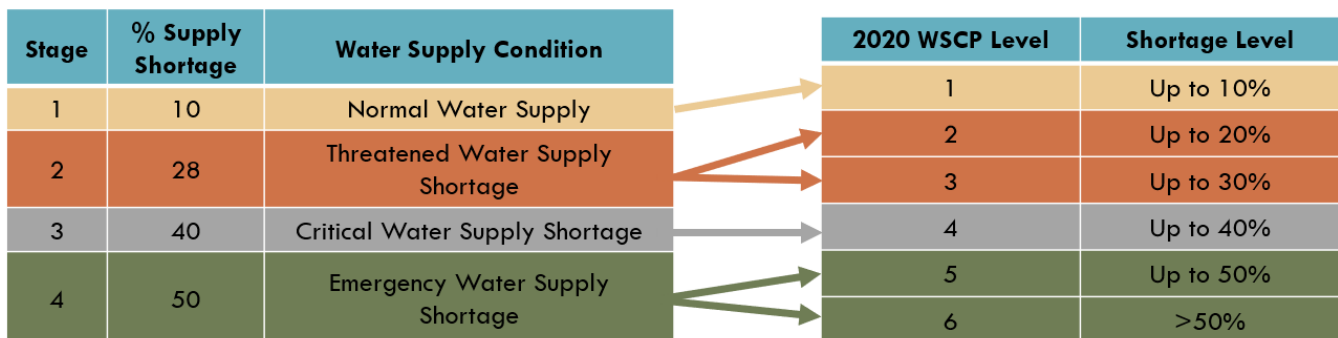
### Stage 4: Emergency Water Supply Shortage

Stage 4 shall be in effect when a disaster or other major disruption in the water supply or any emergency that prevents VWD from meeting the water demands of water users is threatened or exists. Shortage Stage 4 will be implemented when a total potable water production or water usage reduction in excess of 41%. The actual percentage reduction required (based on State conservation mandates and other contributing factors) will be indicated in the VWD resolution enacting Shortage Stage 4. Prohibitions during stage 4 are provided in **Table 1-3**.

The City Manager shall promulgate a drought management plan containing regulations setting forth the criteria for implementation and termination of various water use reduction stages. The City Manager is authorized to declare a water shortage, and to implement a water shortage management plan, in response to events including (but not limited to) reductions in supply from any water purveyor or when an insufficient supply appears likely due to water system limitations or structural failure. Such declaration may designate the entire area of the City or a portion of it if the shortage is not citywide.

The CWC outlines six standard water shortage levels that correspond to a gap in supply compared to normal year availability. The six standard water shortage levels correspond to progressively increasing estimated shortage conditions (up to 10%, 20%, 30%, 40%, 50%, and greater than 50% shortage compared to the normal reliability condition) and align with the response actions that a water supplier would implement to meet the severity of the impending shortages.

The CWC allows suppliers with an existing water shortage contingency plan that uses different water shortage levels to comply with the six standard levels by developing and including a cross-reference relating its existing shortage categories to the six standard water shortage levels. VWD is maintaining the current four shortage stages for this WSCP. A crosswalk defines how VWD's current water shortage stages will align with the DWR's standardized six levels of shortage. A visual representation of this alignment is shown in **Figure 1-1**. **Table 1-2** summarizes DWR's WSCP levels and where VWD's levels align.



**Figure 1-1. Crosswalk to DWR's Six Shortage Stages**

**Table 1-2. DWR Water Shortage Contingency Plan Levels**

SHORTAGE LEVEL	PERCENT SHORTAGE RANGE <sup>1</sup> (NUMERICAL VALUE AS A PERCENT)	WATER SHORTAGE CONDITION
1	Up to 10%	Normal Water Supply (VWD Stage 1)
2	Up to 20%	Threatened Water Supply Shortage (VWD Stage 2)
3	Up to 30%	Threatened Water Supply Shortage (VWD Stage 2)
4	Up to 40%	Critical Water Supply Shortage (VWD Stage 3)
5	Up to 50%	Emergency Water Supply Shortage (VWD Stage 4)
6	>50%	Emergency Water Supply Shortage (VWD Stage 4)

<sup>1</sup> One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.

## 1.4 Shortage Response Actions

This section was completed pursuant to CWC Section 10632(a)(4) and 10632.5(a) and describes the response actions that must be implemented or considered for each stage to minimize social and economic impacts to the community.

### 1.4.1 Demand Reduction

Mandatory compliance measures enacted during a water shortage are more severe than voluntary measures, produce greater savings, and are less costly to the utility. The principal drawback to these measures could result from customer resentment if the measures are not seen as equitable. Therefore, such measures need to be accompanied by a good public relations campaign. The demand reduction actions for each stage are shown in **Table 1-3**.

**Table 1-3. Demand Reduction Actions**

DWR Table 8-2

SHORTAGE LEVEL	DEMAND REDUCTION ACTIONS	HOW MUCH IS THIS GOING TO REDUCE THE SHORTAGE GAP?	ADDITIONAL EXPLANATION OR REFERENCE	PENALTY, CHARGE, OR OTHER ENFORCEMENT
1	CII - Restaurants may only serve water upon request	0-1%	Providing glasses of drinking water (except upon request) to customers in restaurants or other public places where food is routinely served is prohibited.	Yes
1	Landscape - Limit landscape irrigation to specific times	0-5%	<u>Summer Outdoor Sprinkler Restrictions:</u> From June 1 through September 30, irrigation/watering is permitted only between the hours of 10:00 p.m. and 6:00 a.m. <u>Winter Outdoor Sprinkler Restrictions:</u> From October 1 through May 31, irrigation/watering is permitted only between the hours of 9:00 a.m. and 3:00 p.m. <u>Summer Outdoor Sprinkler Restrictions (Large Systems):</u> From June 1, through September 30, irrigation/watering for facilities with Large Systems is only permitted between the hours of 10:00 p.m. and 9:00 a.m. <u>Winter Outdoor Sprinkler Restrictions (Large Systems):</u> From October 1, through May 31, irrigation/watering for facilities with Large Systems is only permitted between the hours of 9:00 a.m. and 3:00 p.m.	Yes
1	Landscape - Other landscape restriction or prohibition	0-5%	Irrigation with potable water of ornamental turf on public street medians is prohibited.	Yes
1	Landscape - Other landscape restriction or prohibition	0-1%	Irrigation/watering is permitted at any time if a handheld hose fitted with a positive shut-off nozzle is used or a Low-Volume Irrigation System is used, provided that the Low-Volume Irrigation System is not on an irrigation Station which operates at the same time as a sprinkler system	Yes
1	Landscape - Other landscape restriction or prohibition	0-5%	Application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall is prohibited.	Yes
1	Landscape - Other landscape restriction or prohibition	0-5%	It is prohibited to plant any Water-intensive Landscape or Turf: a. In any Right-of-Way, narrow pathway, parking strip, roadway median, or along foundations of buildings. b. Having a width of less than five (5) feet, unless adjacent to a planter bed or other landscaped area which will catch Overspray.	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	0-5%	Water Users are prohibited from causing or permitting any water furnished to their properties/premises by the VWD to run or to escape from any hose, pipe, valve, faucet, sprinkler or irrigation device onto any sidewalk, parking lot, adjacent property, street, or gutter or to otherwise escape, if such running or escaping can be prevented.	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	0-5%	Watering of turf, ground cover, open ground, shrubbery, crops, gardens, and trees, including agricultural irrigation, or any outdoor dispensing of water in a manner or to an extent which allows Excess Runoff is prohibited. However, a minimum amount of runoff, which is a natural consequence of conservative watering, either by hand or by mechanical or automated sprinkling facilities, is permitted, so long as such runoff does not amount to Excess Runoff.	Yes
1	Other	0-1%	Irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0-1%	Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the Water User's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected is prohibited. Upon receiving notice from the VWD of the existence of any such break, leak or other malfunction, Water Users shall identify the source of the water and within 48 hours, stop the source, by turning off the valve that supplies the water, and within 7 days, evaluate the extent of the problem and repair or correct same.	Yes
1	Other - Prohibit use of potable water for washing hard surfaces	0-1%	Washing down of impervious surfaces, including but not limited to walkways, patios, tennis courts, driveways, sidewalks or other paved surfaces (except in emergencies to remove spills of hazardous materials or eliminate dangerous conditions) is prohibited.	Yes
1	Other - Require automatic shut of hoses	0-1%	Using a hose that dispenses potable water for any outside purpose (including the washing of a motor vehicle), except where the hose is fitted with a positive shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use, is prohibited.	Yes
1	Other water feature or swimming pool restriction	0-1%	Use of potable water in fountains or other decorative water features, except where the water is part of a recirculating system, is prohibited.	Yes

SHORTAGE LEVEL	DEMAND REDUCTION ACTIONS	HOW MUCH IS THIS GOING TO REDUCE THE SHORTAGE GAP?	ADDITIONAL EXPLANATION OR REFERENCE	PENALTY, CHARGE, OR OTHER ENFORCEMENT
2	Landscape - Limit landscape irrigation to specific days	0-5%	<p><u>Summer Outdoor Sprinkler Restrictions</u> - From June 1, through September 30, it shall be prohibited to: a) Apply potable water to any outdoor landscape at properties with street addresses ending in an even number (0, 2, 4, 6, or 8) except on Tuesdays, Thursdays, or Saturdays between the hours of 10:00 pm and 6:00 am. b) Apply potable water to any outdoor landscape at properties with street addresses ending in an odd number (1, 3, 5, 7, or 9) except on Wednesdays, Fridays, and Sundays between the hours of 10:00 pm and 6:00 am. c) Apply potable water to any outdoor landscape at facilities such as schools, parks, cemeteries, golf courses or industrial sites and areas without street address numbers, such as landscape maintenance assessment districts ("LMADS"), except on Mondays, Tuesdays, Thursdays, Fridays and Sundays, between the hours of 10:00 p.m. and 9:00 a.m., unless such facilities have Large Systems with approved Reduction Plans. Water users at facilities with approved Reduction Plans may water in accordance with the provisions of those Reduction Plans so long as the Water Users maintain full compliance with the provisions of such Reduction Plans. Water users which fail to meet the minimum required Reduction Plan percentage during any one (1) billing cycle more than two (2) times in one twelve- month period, shall not be considered in full compliance and must immediately resume watering in accordance with the first sentence of this Subsection. Failure to immediately resume watering in accordance therewith shall constitute a violation of this Ordinance.</p> <p><u>Winter Outdoor Sprinkler Restrictions</u> - from October 1 through May 31, it shall be prohibited to: a) Apply potable water to any outdoor landscape at properties with street addresses ending in an even number (0,2,4,6, or 8) except on Tuesdays, Thursdays, or Saturdays between the hours of 9:00 a.m. and 3:00 p.m. b) Apply potable water to any outdoor landscape at properties with street addresses ending in an odd number (1,3,5,7, or 9) except on Wednesdays, Fridays, and Sundays between the hours of 9:00 a.m. and 3:00 p.m. c) Apply potable water to any outdoor landscape at facilities such as schools, parks, cemeteries, golf courses or industrial sites and areas without street address numbers, such as landscape maintenance assessment districts ("LMADS") except on Mondays, Tuesdays, Thursdays, Fridays and Sundays, between the hours of 9:00 a.m. and 3:00 p.m., unless such facilities have Large Systems with approved Reduction Plans. Water Users at facilities with approved Reduction Plans may water in accordance with the provisions of those Reduction Plans so long as the Water Users maintain full compliance with the provisions of such Reduction Plans. Water Users which fail to meet the minimum required Reduction Plan percentage during any one (1) billing cycle more than two (2) times in one twelve-month period, shall not be considered in full compliance and must immediately resume watering in accordance with the first sentence of this Subsection. Failure to immediately resume watering in accordance therewith shall constitute a violation of this ordinance.</p>	Yes
2	Landscape - Other landscape restriction or prohibition	5-20%	Fall overseeding of Turf areas, unless irrigated with Reclaimed Water for non-residential water intensive landscape, shall be prohibited.	Yes
2	Landscape - Other landscape restriction or prohibition	0-5%	Exterior landscape plans for all new multi-family, commercial and industrial development must be presented to and approved by VWD prior to issuance of a will serve letter.	Yes
2	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	0-1%	Using water for washing of motor vehicles is prohibited, except when done by commercial car wash facilities equipped with a recirculation system.	Yes
2	Pools and Spas - Require covers for pools and spas	0-1%	All swimming pools, spas and hot tubs must be covered when not in use.	Yes
3	Landscape - Other landscape restriction or prohibition	5-20%	It shall be unlawful to use a sprinkler system in the irrigation of outdoor landscaping of any kind.	Yes
3	Other	0-1%	Use of water from fire hydrants shall be limited to firefighting or other authorized or approved water uses that are necessary to maintain health, safety, and welfare.	Yes
3	Other - Prohibit use of potable water for construction and dust control	0-1%	All existing construction meters shall be removed and no installation of or new construction meters shall be permitted.	Yes
4	Landscape - Prohibit all landscape irrigation	10-30%	The watering of turf, lawns, grass, shrubbery, ground cover or other outdoor landscaping with potable water at any time is prohibited; the watering of parks, school grounds and golf courses with potable water is also prohibited.	Yes
4	Other water feature or swimming pool restriction	0-1%	The use, filling or adding water to swimming pools or spas of any size, fountains, ponds, water courses, waterfalls and other artificial water structures filled or refilled with water from any source is prohibited.	Yes
4	Other	0-1%	The washing of vehicles, trucks, trailers, boats, airplanes, and other types of mobile equipment with potable water, is prohibited unless such washing is necessary for the immediate interest of the public health or safety, and such washing occurs upon the immediate premises of commercial vehicle washes using recirculated water.	Yes
4	CII - Other CII restriction or prohibition	5-10%	All existing nurseries shall discontinue all potable irrigation watering.	Yes

## 1.4.2 Supply Augmentation

**Table 1-4** identifies the supply augmentation actions VWD can take in the event of a water shortage condition. VWD currently maintains interconnections with Mojave Water Agency. During water shortage emergencies, VWD may be able to obtain supplemental water supply through this connection, if available.

**Table 1-4. Supply Augmentation & Other Actions**

DWR Table 8-3

SHORTAGE LEVEL	SUPPLY AUGMENTATION METHODS AND OTHER ACTIONS BY WATER SUPPLIER	HOW MUCH IS THIS GOING TO REDUCE THE SHORTAGE GAP?	ADDITIONAL EXPLANATION OR REFERENCE
4	Other purchases	0-15%	Purchase additional water from Mojave Water Agency if available

## 1.4.3 Emergency Response Plan

In 2020, VWD completed a Risk and Resilience Assessment (RRA) and Emergency Response Plan (ERP) in accordance with America’s Water Infrastructure Act (AWIA) of 2018. The purpose of the RRA and ERP is to meet the AWIA compliance requirements and plan for long-term resilience of VWD’s infrastructure. The RRA assessed VWD’s water system to identify critical assets and processes that may be vulnerable to human and natural hazards, and to identify measures that can be taken to reduce risk and enhance resilience from service disruption for the benefit of customers. The RRA identifies and characterizes both infrastructure-specific and system-wide vulnerabilities and threats and quantifies the consequences of disruption. The RRA also identifies various options (and constraints) in addressing and mitigating risk. The RRA, in conjunction with the ERP, charts a course for water system resilience. The RRA also provided various recommendations to increase reliability of VWD’s system. Because critical pieces of infrastructure and specific vulnerabilities are detailed in the RRA and ERP, the contents of the document are confidential and for use by VWD’s staff only. However, VWD can confirm that these plans meet the requirements set forth by AWIA and evaluate seismic risks and mitigation actions to VWD’s infrastructure.

In the event of a water shortage emergency resulting from equipment failure, power outage, or other catastrophe, VWD is prepared to purchase emergency water supplies from nearby agencies while repairs or other remedial actions are underway. VWD may also implement its four-stage plan for conservation, as described above, with either voluntary or mandatory reductions depending on the severity of the shortage. For severe disasters (Stage 4), mandatory water use reductions are specified.

## 1.4.4 Seismic Risk Assessment and Mitigation Plan

Disasters, such as earthquakes, can and will occur without notice. VWD has assessed the risk and mitigations for water facilities. VWD has identified a set of hazard mitigation actions that are intended to reduce the impact of hazards, including:

- Installed isolation valves on main transmission lines.
- Replaced pipes in areas of moderate to high liquefaction or traverse active faults.
- Strengthened concrete tank walls on large reservoirs.
- Retrofitted water tanks.
- Installed well discharge piping to accommodate differential settlement.
- Installed flexible connections for pipeline connections to pump stations.



### 1.4.5 Shortage Response Action Effectiveness

VWD has estimated the effectiveness of shortage response actions when data pertaining to such actions is available. Estimates of the effectiveness for actions has been included in the DWR submittal tables. It is expected that response actions effectiveness is also a result of successful communication and outreach efforts.

## 1.5 Communication Protocols

VWD prioritizes effective communication, especially in times of a water shortage emergency. VWD routinely communicates to customers about details on when a stage is announced. Communication actions may include bill inserts, handouts, informative flyers, and direct mail pieces to newspaper and bus shelter advertisements, news releases, social media outreach, and website content. VWD continues to provide reminders about shortage levels and encourages conservation at all times.

## 1.6 Compliance and Enforcement

Section 10 of VWD's Ordinance No. VWD-012, sets forth the four-stage WSCP, where violations to all mandatory provisions are a misdemeanor and violators may be punished by imprisonment, fine or both. In addition to these criminal penalties, the following civil actions can be initiated by VWD:

- For a first violation of any provision of the WSCP, the enforcement officer shall issue a written notice of first violation and provide the violator with educational materials on landscape water conservation, including a copy of this chapter. The notice shall give the designated water user a reasonable period of time to correct the violation. Failure to correct the violation within a reasonable period of time shall constitute a second violation.
- For a second violation of any provision of this chapter, the City shall issue a written notice of second violation to the designated water user imposing a fine in an amount not to exceed \$100 and requiring immediate correction of the violation.
- For a third violation of any provision of this section, the City shall issue a written notice of third violation to the designated water user imposing a fine in an amount not to exceed \$200 and requiring immediate correction of the violation.
- For a fourth or subsequent violation of this section, the City shall impose a fine in an amount not to exceed \$500. The fourth and each subsequent violation of this chapter shall be deemed a public nuisance, which may be abated pursuant to the procedures provided in Chapter 13.02 "nuisances" of the City's Municipal Code (City's Code).

Any citations issued and fines imposed on designated water users for violations of the chapter shall be served, administered, collected, and appealed in accordance with the procedures of Chapter 1.05 "administrative remedies" of the City's Code.

## 1.7 Legal Authorities

The City's Code Chapter 13.60 addresses water conservation and establishes water waste prohibitions. This section of the City's Code is adopted through Ordinances 2114, 2133, 2135, and 2338. City Ordinance No. 2338, revised Chapter 13.60 of the City's Code to include provisions for water efficient landscaping as well as restrictions and prohibitions related to water waste. VWD also has adopted Ordinance Number VWD-012 on May 19, 2015, which adopts a conservation program and amends the VWD's WSCP.

## 1.8 Financial Consequences of WSCP

In May of 2021, VWD updated its comprehensive water rate study from 2015 for several reasons, including meeting long-term revenue requirements, providing revenue stability and adequate funding for capital improvements, and complying with legal requirements, including Proposition 218. The rates proposed in this study were developed in a manner that is consistent with industry standards, including court rulings affecting how the cost bases for water rates should be established.

The rate study specifically addressed several key issues, including:

- **Revenue Requirements and Financial Planning** – The long-range financial plan for VWD was closely examined and adjusted to best meet annual operating expenses, capital improvement costs, annual other post-employment benefits funding requirements, and established reserve requirements.
- **Rate Structure** – VWD’s rate structure was evaluated to ensure it is consistent with industry standards and addresses other key objectives. The fixed monthly charge will continue to be based on meter size which provides greater revenue stability. VWD also compared a number of volumetric rate alternatives, including tiered and uniform volumetric alternatives. Given VWD’s source of supply and costs, the proposed 2-Tier volumetric rates for single-family residential customers with a uniform volumetric rate for all other customers is best suited for VWD.
- **Fixed vs. Variable Charges** – The amount of revenue collected from fixed charges vs. volumetric rates was carefully examined. The proposed rate design will collect the projected water supply costs from volumetric charges and the remaining revenue requirement from fixed charges. In the first year of the rate adjustment, new rates will continue to collect 27% of revenue from fixed charges and 73% from volumetric charges but will transition to a 40% fixed and 60% volumetric split by Year 5 of the proposed rates to move closer to the 53% fixed and 47% volumetric split that resulted from the cost-of-service analysis. By adjusting the fixed vs. volumetric split, VWD is increasing revenue stability while still promoting conservation.
- **Statewide Conservation** – The State imposed drought-related conservation level 2 (25% Statewide) back in 2015 and VWD was mandated to reduce water consumption by 28% beginning in April 2015. As the State may be heading into another drought, the current and projected future consumption levels were closely evaluated and incorporated into the rate study.
- **Long-Term Conservation** – The assumptions and recommendations contained in the rate study assume that water supplies will continue to be limited in the future and that, in the long run, customers will reduce consumption accordingly. Therefore, the drought rates developed in the rate study will allow VWD to meet its annual revenue requirements at various stages of conservation even if drought conditions worsen over the next five years.

The new volumetric rate structure recommended by the rate study is set to the marginal cost of water, meaning that changes in consumption would cause matching changes in revenue and expenses. Under this structure, a reduction in water sales due to conservation would not have a negative fiscal impact on VWD. Drought rates can be implemented by VWD at various conservation levels that range from 20% through 50%; however, due to the higher marginal cost savings provided by the new rate structure, drought rates would not be needed after Year 2 since the losses from drought revenue reductions would be offset by marginal cost reductions. Drought rates were developed in 10% increments that VWD can implement for 20% through 50% conservation levels.

The new rates are subject to the substantive and procedural requirements of Proposition 218 (Cal. Const. Art. XIII D). Section 6 of Article XIII D sets forth standards for setting rates that reflect the proportional cost of providing water services, as well as requirements for providing notice, a public hearing, and the ability to protest such proposed revisions to and increases in charges and fees for water service.

To ensure VWD customers comply with Ordinance 225 and CWC Chapter 3.3 (Excessive Residential Water Use During Drought), additional staff costs will be incurred to monitor and enforce response actions. The incurred cost may vary depending on the shortage stage and duration of the water shortage emergency.

## **1.9 Monitoring and Reporting**

The water savings from implementation of the WSCP will be determined based on monthly production reports, which are reviewed and compared to production reports and pumping statistics from prior months and the same period of the prior year. Under shortage conditions, these production reports could be prepared as often as daily. At first, the cumulative consumption for the various sectors (e.g., residential, commercial, etc.) will be evaluated for reaching the target level. Then if needed, individual accounts will be monitored. Weather and other possible influences may be accounted for in the evaluation.

## **1.10 WSCP Refinement Procedures**

The WSCP is best prepared and implemented as an adaptive management plan. VWD will use results obtained from their monitoring and reporting program to evaluate any needs for revisions. Potential changes to the WSCP that would warrant an update include, but are not limited to, any changes to trigger conditions, changes to the shortage stage structure, and/or changes to customer reduction actions.

Any prospective changes to the WSCP would need to be presented to City Council for discretionary approval. Once discretionary approval has been granted, VWD will hold a public hearing, obtain any comments and adopt the updated WSCP. Notices for refinement and the public hearing date will be published in the local newspaper in advance of any public meetings.

## **1.11 Plan Adoption, Submittal, and Availability**

VWD adopted this WSCP with the 2020 UWMP. The 2020 UWMP and WSCP were made available for public review in June 2021 and a public hearing was held on June 15, 2021 to receive public input on the draft 2020 UWMP and the WSCP. The City Council adopted the 2020 UWMP and the WSCP at a public meeting on June 15, 2021. The resolution of adoption is included in Attachment 1.

This WSCP was submitted to DWR through the WUEdata portal before the deadline of July 1, 2021. This WSCP will be available to the public on the City's web site.

If VWD identifies the need to amend this WSCP, it will follow the same procedures for notification to cities, counties and the public as used for the 2020 UWMP and for initial adoption of the WSCP.

# 1

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## WSCP Resolution of Adoption

**VICTORVILLE WATER DISTRICT  
RESOLUTION NO. VWD 21-007**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE  
VICTORVILLE WATER DISTRICT ADOPTING THE VICTORVILLE  
WATER SHORTAGE CONTINGENCY PLAN (WSCP)**

**WHEREAS**, The California Urban Water Management Planning Act, Water Code Section 10610 *et seq.* (the Urban Water Management Planning Act), mandates that every urban supplier of water providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare and adopt, in accordance with prescribed requirements, a Water Shortage Contingency Plan (“**WSCP**”); and

**WHEREAS**, The Victorville Water District meets the definition of an urban water supplier for purposes of the Urban Water Management Planning Act (the “**UWMP Act**”); and

**WHEREAS**, the UWMP Act specifies the requirements and procedures for adopting such Water Shortage Contingency Plans; and

**WHEREAS**, pursuant to recent amendments to the UWMP Act, urban water suppliers are required to adopt and electronically submit their WSCP to the California Department of Water Resources by July 1, 2021; and

**WHEREAS**, The Victorville Water District (the “**District**”) has prepared a WSCP in accordance with the UWMP Act and SB X7-7, and in accordance with applicable legal requirements, has undertaken certain coordination, notice, public involvement, public comment, and other procedures in relation to its WSCP; and

**WHEREAS**, the WSCP references and incorporates the provisions of the Water Conservation Program of the Victorville Water District’s Ordinance No. VWD-012 adopted on May 19, 2015; and

**WHEREAS**, in accordance with the UWMP Act, the Victorville Water District has prepared its WSCP with its own staff, with the assistance of consulting professionals, and in cooperation with other governmental agencies, and has utilized and relied upon industry standards and the expertise of industry professionals in preparing its WSCP, and has also utilized the California Department of Water Resources Guidebook for Urban Water Suppliers to Prepare 2020 Urban Water Management Plans, in preparing its WSCP; and

**WHEREAS**, in accordance with applicable law, including Water Code Sections 10608.26 and 10642, and Government Code Section 6066, a Notice of a Public Hearing regarding the Victorville Water District’s WSCP was published within the jurisdiction of the Valley Wide Newspaper on May 28; and

**WHEREAS**, in accordance with applicable law, including but not limited to Water Code Sections 10608.26 and 10642, a public hearing was held on June 15, 2021 or soon thereafter, in the Council Chambers of the City of Victorville in order to provide members of the public and other interested entities with the opportunity to be heard in connection

with proposed adoption of the WSCP and issues related thereto; and

**WHEREAS**, pursuant to said public hearing on the WSCP, the District, among other things, encouraged the active involvement of diverse social, cultural, and economic members of the community within the District's service area with regard to the preparation of the WSCP, encouraged community input regarding Victorville Water District's WSCP; and

**WHEREAS**, the Board of Directors of the District (the "**Board of Directors**") has reviewed and considered the purposes and requirements of the UWMP Act, the contents of the WSCP, and the documentation contained in the administrative record in support of the WSCP, and has determined that the factual analyses and conclusions set forth in the WSCP are legally sufficient; and

**WHEREAS**, the Board of Directors desires to adopt the WSCP in order to comply with the UWMP Act.

**NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE VICTORVILLE WATER DISTRICT DOES HEREBY RESOLVE AS FOLLOWS:**

**Section 1. Recitals**

The above Recitals are true and correct and incorporated as an operative part of this Resolution.

**Section 2. Adoption of the WSCP**

The Water Shortage Contingency Plan is hereby adopted as amended by changes incorporated by the Board of Directors as result of input received (if any) at the public hearing and ordered filed with the Secretary of the Board of Directors.

**Section 3. Further Authorizations**

The General Manager, or his/her designee ("**General Manager**"), is hereby authorized and directed to include a copy of this Resolution in the Victorville Water District's WSCP;

The General Manager is hereby authorized and directed, in accordance with Water Code Sections 10621(d) and 10644(a)(1)-(2), to electronically submit a copy of the WSCP to the California Department of Water Resources no later than July 1, 2021;

The General Manager is hereby authorized and directed, in accordance with Water Code section 10644(a), to submit a copy of the WSCP to the California State Library, and any city or county within which the Victorville Water District provides water supplies no later than thirty (30) days after this adoption date;

The General Manager is hereby authorized and directed, in accordance with Water Code Section 10645, to make the WSCP available for public review at the Victorville Water District's offices during normal business hours and on the Victorville Water District's

website no later than thirty (30) days after filing a copy of the WSCP with the California Department of Water Resources;

The General Manager is hereby authorized and directed, in accordance with Water Code Section 10635(b), to provide that portion of the WSCP prepared pursuant to Water Code Section 10635(a) to any city or county within which The Victorville Water District provides water supplies no later than sixty (60) days after submitting a copy of the WSCP with the California Department of Water Resources; and

The General Manager is hereby authorized and directed to implement the WSCP in accordance with the UWMP Act and to provide recommendations to the Board of Directors regarding the necessary budgets, procedures, rules, regulations or further actions to carry out the effective and equitable implementation of the WSCP.

**Section 4. Compliance with Law; Severability**

If any section, subsection, clause or phrase in this Resolution is for any reason held invalid, the validity of the remainder of this Resolution shall not be affected thereby.

**Section 5. Certification**

The Board Secretary shall certify to the passage and adoption of this Resolution; shall enter the same in the book of original Resolutions of the District; and shall make a minute of passage and adoption thereof in the records of the proceedings of the District, in the minutes of the meeting at which this Resolution is passed and adopted.

**Section 6. Effective Date**

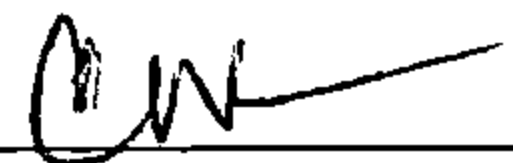
This Resolution shall take effect immediately upon its adoption.

Resolution No. VWD 21-007

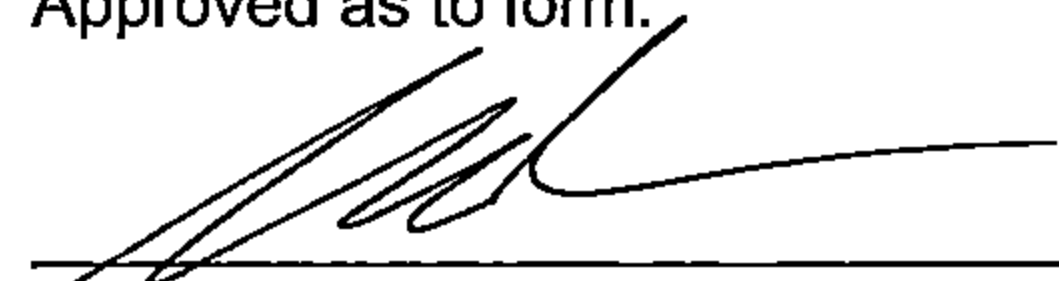
PASSED, APPROVED AND ADOPTED this 15<sup>th</sup> day of JUNE 2021.

  
\_\_\_\_\_  
Debra Jones, Chairman of the Board

Attest:

  
\_\_\_\_\_  
Charlene Robinson, Board Secretary

Approved as to form:

  
\_\_\_\_\_  
Legal Counsel

I, Charlene Robinson, City Clerk of the City of Victorville and ex-officio Clerk to the Victorville Water District of said City, do hereby certify that the foregoing is a true and correct copy of Resolution No. VWD 21-007 and was adopted at a meeting held on the 15<sup>th</sup> day of June 2021, by the following roll call vote, to wit:

AYES: Board Members Jones, Becerra, Gomez and Irving

NOES: None

ABSENT: None

ABSTAIN: None



# 2

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## Ordinance No. VWD-012

**ORDINANCE NO. VWD-012**

**AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE VICTORVILLE WATER DISTRICT ADOPTING A WATER CONSERVATION PROGRAM PURSUANT TO WATER CODE SECTION 375 AND AMENDING THE DISTRICT'S WATER SHORTAGE CONTINGENCY PLAN TO COMPLY WITH EMERGENCY REGULATIONS ADOPTED BY THE STATE WATER RESOURCES CONTROL BOARD PERTAINING TO DROUGHT CONSERVATION**

**WHEREAS**, California is experiencing one of the most severe droughts on record; and

**WHEREAS**, in January 2014, California Governor Jerry Brown declared a drought state of emergency, requiring Californians in certain areas to curtail regular water use by twenty percent (20%) due to ongoing water shortfalls and further declared a continued drought state of emergency on April 25 and December 22, 2014; and

**WHEREAS**, on July 15, 2014 the State Water Resources Control Board ("SWRCB") adopted emergency water conservation regulations requiring urban water suppliers to implement mandatory water use restrictions and adopt a water shortage contingency plan ("Plan"); and

**WHEREAS**, on March 17, 2015, the SWRCB re-adopted amended emergency regulations mandating that urban water suppliers, such as the Victorville Water District (the "District"): (1) implement all requirements and actions of the stage of their Plans that includes mandatory restrictions on the number of days that outdoor irrigation of ornamental landscapes or turf with potable water is allowed; or (2) amend their Plans to include the mandatory restrictions to be implemented by May 11, 2015; and

**WHEREAS**, Governor Brown further issued Executive Order No. B-29-15 on April 1, 2015, which declared that all prior executive orders relating to the drought state of emergency remained in full force and ordered the SWRCB to impose restrictions on urban water suppliers to achieve a Statewide twenty-five percent (25%) reduction in urban potable water usage through February 2016; and

**WHEREAS**, in response to this Executive Order, the SWRCB further revised and released its emergency regulations, the final version of which repealed many provisions of the March 17, 2015 emergency regulations and now requires the District to cut its Total Potable Water Production (as defined herein and in SWRCB Regulation 865(a)(3) set forth in Title 23 of the California Code of Regulations) by twenty-eight percent (28%) for each month, as compared to the amount used in the same months in 2013, effective June 1, 2015; and

**WHEREAS**, to meet this new conservation standard, District staff has determined that adoption of its amended Plan (which includes the various water supply shortage stages/responses set forth in this Ordinance) must occur on or before June 1, 2015; and

**WHEREAS**, following notice and a public hearing and making appropriate findings of necessity, the District is authorized by California Water Code section 375 *et seq.* to adopt and enforce a water conservation program to reduce the quantity of water used for the purposes of conserving the District's water supplies; and

**WHEREAS**, on April 10, 2015, the District published notice that a public hearing on the adoption of this Ordinance would be held on April 21, 2015, which public hearing was duly held and subsequently continued to May 5, 2015 and now to May 19, 2015 to ensure full public comment and implement the revised water reduction mandates finally adopted on May 5, 2015 by the SWRCB; and

**WHEREAS**, the District is further authorized by Water Code section 350 *et seq.* to: (1) declare water shortage emergency conditions when it finds and determines that the ordinary demands and requirements of its water customers cannot be satisfied without depleting the District's water supply to the extent that there would be insufficient water for human consumption, sanitation, and fire protection; and (2) adopt regulations and restrictions that include discontinuance of service as an enforcement option where a water shortage emergency condition has been declared; and

**WHEREAS**, given the increasingly serious and ongoing drought conditions throughout the State, the need to conserve scarce and precious water resources in the District's boundaries, and the time constraints for meeting the conservation standard currently set forth in the SWRCB draft regulations, the District Board of Directors ("District Board") finds that on or before May 31, 2015, it is necessary to: (1) adopt this Ordinance; and (2) subsequently adopt a resolution declaring and implementing the provisions of Water Supply Shortage Stage 2 as provided for in this Ordinance, to ensure the continued health, safety, welfare, and quality of life of the water users within the District's boundaries, including those in the City of Victorville; and

**WHEREAS**, the District Board finds that the adoption of this Ordinance is exempt from the provisions of Public Resources Code section 21000 *et seq.* (the California Environmental Quality Act ) as a project undertaken as immediate action necessary to prevent or mitigate an emergency pursuant to Title 14, California Code of Regulations section 15269 and as a project undertaken to assure the maintenance, restoration or enhancement of a natural resource pursuant to Title 14, California Code of Regulations section 15307.

**NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE VICTORVILLE WATER DISTRICT DOES HEREBY ORDAIN AS FOLLOWS:**

**SECTION 1. RECITALS.**

The recitals and findings set forth above are true and correct, and are hereby incorporated by this reference as if set forth in their entirety.

## **SECTION 2. ADDITION OF NEW CHAPTER 10.05.**

A new Chapter 10.05, titled “**Victorville Water District Conservation Program and Water Shortage Contingency Plan**” (to be temporarily codified for reference purposes only in Title 10 of the City of Victorville Municipal Code) is hereby added to read in its entirety as follows:

### **10.05.010 Intent and Purpose.**

The intent of this Chapter is for the Victorville Water District (the “District”) to establish and adopt standards, guidelines and procedures for year-round water conservation to prevent the waste or unreasonable use of water within its territorial boundaries and to further prescribe, define and enforce restrictions, prohibitions and exclusions on water use deemed necessary by the District Board of Directors (“District Board”) pursuant to California Water Code section 350 *et seq.* and the regulations of the State Water Resources Control Board (“SWRCB”) for the purposes of:

- (a) Restricting the use of water necessary for ordinary domestic and commercial purposes during threatened or existing water supply shortages and enabling implementation of the District’s Water Supply Shortage Contingency Plan stages to respond to the State’s historic drought and meet the Total Potable Water Production reduction percentage required by the SWRCB emergency regulations; and
- (b) Protecting and promoting the public health, safety, and welfare by ensuring continued availability of water for necessary uses; and
- (c) Protecting the physical and economic stability of the District by insuring an adequate supply of water to its customers and reducing hazards to the public resulting from inappropriate use of water.

### **10.05.020 Application of Chapter.**

The provisions of this Chapter shall apply to all Water Users (as defined in Section 10.05.030) including the City of Victorville (the “City”). The restrictions or prohibitions in this Chapter shall not apply to water use, runoff or flow: (1) resulting from firefighting, hydrant flushing or fire training activities; (2) necessary to prevent or abate threats to the public health or safety; or (3) from routine maintenance of any District-owned water system, well flushing or from temporary water system failures or malfunctions. During Water Supply Shortage Stages 2 through 4, flushing operations will be reduced to the absolute minimum needed to maintain water quality in conformance with Federal drinking water standards and where practicable, the water from these flushing operations will be utilized beneficially.

### **10.05.030 Definitions.**

Whenever used in this Chapter, the following definitions shall apply:

(a) "Active Recreational Area" means a turf area which measures a minimum of one hundred feet long and one hundred feet wide designated and primarily used for organized sports, including, without limitation, softball, baseball, football, soccer or a similar related sport, including all amenities related to the activity.

(b) "Administrative Fine" means a monetary civil penalty assessed for violations of this Chapter by issuance of an administrative citation.

(c) "Appellant" means any Person against whom an Administrative Fine is levied pursuant to an administrative citation issued under this Chapter and who contests or disputes such Administrative Fine. "Appellant" shall also include Persons appealing the General Manager's denial of a Hardship Exception and Persons appealing a written notice of water service discontinuation under Sections 10.05.120(b) and 10.05.190(c) of this Chapter.

(d) "Controller" means an irrigation controller, which is an automated device to operate valve stations to set days, length of time to water and frequency of water application for lawn sprinklers and Low-Volume irrigation systems.

(e) "Enforcement Officer" means any officer or employee of the District (including such officers or employees of the City serving the District in an ex officio capacity by virtue of the District's status as a subsidiary district of the City) with the authority to enforce this Chapter, including the General Manager, District staff or City code enforcement officers designated by the General Manager or empowered by Water Code section 30546 to enforce this Chapter.

(f) "Excess Runoff" means water accumulation on streets, sidewalks, gutters, adjacent properties or other areas in amounts sufficient to cause the escape or flow of water in such quantity as to: cause flooding; impede vehicular or pedestrian traffic; create a hazardous condition; or cause damage to any public or private right-of way through failure or neglect to properly operate or maintain any irrigation, water delivery or drainage system.

(g) "General Manager" means the General Manager of the District and/or his/her duly authorized designees. The Victorville City Manager serves ex officio as the District's General Manager.

(h) "Ground Cover" means various low growing shrubs and perennials used in a landscape in place of grass or where grass is difficult to grow, planted on slopes to prevent erosion and/or to prevent weed growth. Ground cover includes low-growing, clumping, trailing, creeping, or sprawling vegetation.

- (i) "Hardscapes" means any inorganic decorative landscape materials, including but not limited to, stones, boulders, cobblestones, pavers, decorative concrete, decomposed granite and/or mulch, incorporated into an overall landscape design.
- (j) "Hearing Officer" means any person appointed by the General Manager to preside over the administrative appeal hearings provided for in this Chapter.
- (k) "Impermeable/impervious surfaces mean solid surfaces that do not allow water to penetrate, forcing runoff; such as: asphalt, concrete, traditional stone, brick or concrete pavers.
- (l) "Large System" means an irrigation system that has both multiple Controllers and more than ten (10) watering Zones.
- (m)"Lot" means a legally created parcel of land occupied or intended for occupancy by one main building together with its accessory buildings, and uses customarily incidental to it, including the open space required by the City's zoning ordinance, and having its principal frontage upon a street as defined in said zoning ordinance.
- (n) "Low-Volume Irrigation Systems" means appropriately designed irrigation systems that utilize low volume devices appropriate to the climate and site factors. Such heads include micro sprinkler heads, drip emitters and bubbler emitters.
- (o) "May" means any act, service, or performance that is permissive.
- (p) "Model Home" means a facility used exclusively for the promotion and sale of homes similar to the model.
- (q) "Native Plant" means a plant that lives or grows naturally in a particular region without direct or indirect human intervention.
- (r) "New Model Home" and "New Residential Development" means Model Homes or Residential Developments not yet built/constructed or not occupied since built.
- (s) "New Non-Residential Facilities" means Non-Residential Facilities not yet built/constructed or not occupied since built.
- (t) "Overspray" means water which is delivered beyond landscaped areas; wetting pavements, walks, structures, impermeable surfaces or other non-landscaped areas.
- (u) "Responsible Person(s)" means a natural person or legal entity who causes, maintains or allows a violation of this Chapter to occur or continue by action or failure to act. A Responsible Person includes, but is not limited to: the owner, tenant, co-tenant, lessee, sub-lessee or other person with any right to possession of the property/premises where a violation of this Chapter occurs; the on-site manager

who normally works daily at the site when the business is open and is responsible for the activities at such premises; and the owner, majority stockholders, corporate officers, trustees and general partners of a legal entity. There may be more than one Responsible Person for a violation.

(v) "Person" means a natural person or entity, an individual, firm, association, business, trust, organization, corporation, partnership, company or any other entity which is recognized by laws as the subject of rights or duties.

(w) "Reclaimed or Recycled Water" means water which has been processed by a municipal or comparable wastewater treatment plant and/or otherwise made available for reuse which meets California Code of Regulations Title 22 requirements and has been approved by all applicable Federal, State or local regulatory agencies.

(x) "Residential" means any type of dwelling or domiciling unit or units suitable or designed for human habitation, including, but not limited to, single family homes, condominiums, townhomes, apartment or manufactured homes, but not including hotels, motels, licensed convalescent homes, commercially operated retirement homes, time share units or the like.

(y) "Right-of-Way" means land which by deed, conveyance, agreement, easement, dedication, usage or process of law is reserved for or dedicated to the general public for street, highway, alley, public utility or pedestrian walkway purposes.

(z) "Shall" or "will" means any act, service, or performance that is mandatory or otherwise required.

(aa) "Station" means an area or Zone served by one water valve or by a set of water valves that operate simultaneously.

(bb) "Total Potable Water Production" means all potable water that enters into the District's distribution system, excluding water placed into storage and not withdrawn for use during a SWRCB-mandated reporting period, or water exported outside the District's service area.

(cc) "Turf" means a surface layer of earth containing grass with its roots.

(dd) "Water-intensive Landscape" means an area of land that is watered with a permanent water application system (such as in-ground sprinklers) and planted primarily with plants not listed in the District's adopted Water-wise Plant list. Included is the total surface area of all water features (*i.e.* swimming pools of any size, fountains, ponds, water courses, waterfalls and other artificial water structures) filled or refilled with water from any source.

(ee) "Water Reduction Plan" or "Reduction Plan" means a written plan submitted to the General Manager that insures a minimum monthly potable water use reduction of twenty-five percent (25%) for any of the facilities listed in Subsection 10.05.090(b)(1)c of this Chapter with Large Systems, compared to the amount used for the same months in 2013, or such other baseline year as may be revised from time-to-time by District resolution. The General Manager will provide facilities with Large Systems with information regarding the average monthly water use by the facility for the baseline year, and the General Manager's decision to approve or disapprove a Reduction Plan is final. Water Users with approved Reduction Plans are subject to the investigation and enforcement provisions of this Chapter and must be in full compliance with such Reduction Plans at all times.

(ff) "Water Supply Shortage" means any water shortage caused by drought or any other threatened or existing water shortage, disaster or facility failure, earthquake, extended loss of electrical power, pipeline failure or other condition which results in or threatens to result in the District's inability to meet the water demands of its customers.

(gg) "Water User" means any person, firm, partnership, association, corporation, political entity, customer, property owner, or property owner agent/assignee whose premises are supplied water by the District.

(hh) "Water Waste" means any unreasonable or non-beneficial use of water, or any unreasonable method of use of water, any excessive dissipation of water, intentional or unintentional, including, but not limited to; the use of water for any purpose which allows flooding or runoff over sidewalks, in gutters, driveways, streets or adjacent lands; the use of water in violation of any of the specific uses prohibited and restricted by this Chapter as hereinafter set forth.

(ii) "Water-wise Plants" means plants that perform well in the District's service area and have been selected according to their ability to withstand the extreme hot/cold desert climate and fluctuating temperatures; adaptability to drought conditions; and ability to survive once established with a limited amount of supplemental water. The District has adopted the list developed by the Alliance for Water Awareness and Conservation as its Water-wise Plant List (the "WWP List").

(jj) "Xeriscaping" means a water conservation concept that stresses the use of the appropriate plant material and irrigation techniques which are well suited for the local micro-climate. This concept incorporates native plants, selected Hardscapes, and proper planting and irrigation techniques that improve the overall water efficiency of a landscape system.

(kk) "Zone" means an area served by one valve or by a set of valves that operate simultaneously, sometimes also referred to as a Station.



**10.05.040 Year Round Voluntary Conservation and Public Education Measures.**

(a) Even when there is no Water Supply Shortage, all Water Users must use water wisely, take reasonable steps to prevent the waste or unreasonable use of water, and reduce water consumption necessary for ordinary domestic and commercial purposes.

(b) The District will provide new Water Users with: information about: designing, installing and maintaining water efficient landscapes; proper water uses; water conservation methods; a full copy of the ordinance creating this Chapter (or a summary thereof); and notification of any stage of the District's Water Supply Shortage Contingency Plan currently in effect.

(c) Voluntary measures are encouraged at all times to reduce water usage and to use water wisely. Such measures include:

- (1) Converting lawns to drought tolerant, low water use or native plants, incorporating the principals of Xeriscaping.
- (2) Using low volume irrigation systems for ground cover, gardens, shrubs and trees.
- (3) Performing a self-audit and/or an assessment of water consumption history.
- (4) Providing proper installation and use of pool covers.
- (5) Incorporating Hardscapes and/or permeable/porous surfaces into landscape design.
- (6) Winterizing pipes and valves.
- (7) Installation and use of water saving devices such as rain sensors, low-flow showerheads, faucet aerators and sprinkler and irrigation watering valves; low-flow or waterless toilets; high-efficiency, low water use washing machines and dishwashers; and automated irrigation timers and/or Controllers.
- (8) Adjusting sprinklers and irrigation systems to avoid Overspray; avoiding sprinkler irrigation watering on windy days.
- (9) Minimizing shower times and shutting off water while brushing teeth or shaving.
- (10) Installing and properly using mulch as a substitution for ground cover.

**10.05.050 The Water-wise Plant List (“WWP List”).**

Many factors determine whether a Water-wise Plant will adapt or perform well, and even though a plant appears on the WWP List, there is no assurance it will adapt or thrive. Therefore, from time to time, the General Manager will amend the WWP List as necessary to add or remove plants. The currently effective WWP List will be posted on the District’s website and will be available in printed form in the District offices.

**10.05.060 Year-Round Prohibited Water Waste - Conservation Stage 1.**

(a) Year-Round Water Conservation Stage 1 (“Conservation Stage 1”) (when the District is able to meet all the water demands of its customers in the immediate future) shall be in effect at all times, unless the District Board otherwise declares under the provisions of Section 10.05.070 of this Chapter that one or more of the District’s Water Supply Shortage Contingency Plan (“WSSCP”) stages are in effect.

(b) During Conservation Stage 1, all voluntary water conservation measures specified in Section 10.050.040 of this Chapter, and the following additional mandatory measures and prohibitions on water use shall be in effect:

(1) Water Waste (as defined in this Chapter) is prohibited.

(2) The irrigation/watering of lawns, gardens, landscaped areas, trees, shrubs, ground cover or other plants utilizing sprinkler systems except in accordance with the following provisions is prohibited:

a. Summer Outdoor Sprinkler Restrictions: From June 1 through September 30, irrigation/watering is permitted only between the hours of 10:00 p.m. and 6:00 a.m.

b. Winter Outdoor Sprinkler Restrictions: From October 1 through May 31, irrigation/watering is permitted only between the hours of 9:00 a.m. and 3:00 p.m.

c. Summer Outdoor Sprinkler Restrictions (Large Systems): From June 1, through September 30, irrigation/watering for facilities with Large Systems is only permitted between the hours of 10:00 p.m. and 9:00 a.m.

d. Winter Outdoor Sprinkler Restrictions (Large Systems): From October 1, through May 31, irrigation/watering for facilities with Large Systems is only permitted between the hours of 9:00 a.m. and 3:00 p.m.

(3) Irrigation/watering is permitted at any time if a handheld hose fitted with a positive shut-off nozzle is used or a Low-Volume Irrigation System is used,

provided that the Low-Volume Irrigation System is not on an irrigation Station which operates at the same time as a sprinkler system.

(4) Water Users are prohibited from causing or permitting any water furnished to their properties/premises by the District to run or to escape from any hose, pipe, valve, faucet, sprinkler or irrigation device onto any sidewalk, parking lot, adjacent property, street or gutter or to otherwise escape, if such running or escaping can be prevented.

(5) Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the Water User's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected is prohibited. Upon receiving notice from the District of the existence of any such break, leak or other malfunction, Water Users shall identify the source of the water and within 48 hours, stop the source, by turning off the valve that supplies the water, and within 7 days, evaluate the extent of the problem and repair or correct same.

(6) Use of potable water in fountains or other decorative water features, except where the water is part of a recirculating system, is prohibited.

(7) Washing down of impervious surfaces, including but not limited to: walkways, patios, tennis courts, driveways, sidewalks or other paved surfaces (except in emergencies to remove spills of hazardous materials or eliminate dangerous conditions) is prohibited.

(8) Using a hose that dispenses potable water for any outside purpose (including the washing of a motor vehicle), except where the hose is fitted with a positive shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use, is prohibited.

(9) Watering of turf, ground cover, open ground, shrubbery, crops, gardens and trees, including agricultural irrigation, or any outdoor dispensing of water in a manner or to an extent which allows Excess Runoff is prohibited. However, a minimum amount of runoff, which is a natural consequence of conservative watering, either by hand or by mechanical or automated sprinkling facilities, is permitted, so long as such runoff does not amount to Excess Runoff as defined in this Chapter.

(10) Providing glasses of drinking water (except upon request) to customers in restaurants or other public places where food is routinely served is prohibited.

(11) Application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall is prohibited.

(12) Irrigation with potable water of ornamental turf on public street medians is prohibited.

(13) Irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.

(14) It is prohibited to plant any Water-intensive Landscape or Turf:

a. In any Right-of-Way, narrow pathway, parking strip, roadway median, or along foundations of buildings.

b. Having a width of less than five (5) feet, unless adjacent to a planter bed or other landscaped area which will catch Overspray.

(15) All rehabilitated or New Non-residential Facilities shall limit Water-intensive Landscape and Turf within landscaped area to the following percentages of the total Lot area, and all other areas required to be landscaped with plants shall consist of plants on the WWP List as set forth in Section 10.05.050 of this Chapter:

a. Churches: Twenty five percent (25%) of total lot area.

b. Resorts, including hotels and motels: Ten percent (10%) of the total lot area.

c. Commercial and industrial uses, fewer than nine thousand square feet: Ten percent (10%) of the total lot area.

d. Commercial and industrial uses, nine thousand square feet and greater: Ten percent (10%) of the first nine thousand square feet, and five percent (5%) of the remaining lot area.

e. Common areas in residential developments: Ten percent (10%) of the first acre and five percent (5%) of each additional acre up to five acres. Residential developments larger than five acres shall not plant any additional water intensive landscape and turf in common areas.

f. Active Recreational Area shall not be considered in calculating the percentage of the total Lot area and shall not be considered in determining compliance with this Section.

(16) Any rehabilitated or New Model Homes and/or rehabilitated or New Residential Developments shall limit Water-intensive Landscape and Turf area at

the following percentages of the total Lot area, and all remaining landscaped area, as required by the City's development standards, shall consist of Water-wise Plants described in Section 10.05.050 of this Chapter:

- a. Nine thousand square feet or less: Ten percent (10%) of the total lot area.
- b. Greater than nine thousand square feet to one acre: Ten percent (10%) of the first nine thousand square feet and five percent (5%) of the remainder of the lot area.
- c. Water intensive landscape or turf shall only be located in rear yards.
- d. No Water-Intensive Landscape or Turf shall be planted in any Right-of-Way.
- e. Prior to closing on a new residential unit, the developer shall provide the homeowner with a copy of the District's water conservation ordinance. Upon receipt, the homeowner shall sign an affidavit of acceptance. The developer shall permanently maintain the signed affidavit and submit a copy to the General Manager.

(c) During Conservation Stage 1, it shall be unlawful and a violation of this Chapter for any Water User to make, cause, use or permit the use of water in any manner contrary to the provisions of this Section.

**10.05.070 Water Supply Shortage Contingency Plan; Declaration of Water Supply Shortage Conditions and /Stages.**

(a) In accordance with this Section, the District Board shall require or impose water use reduction measures as are necessary for the District to comply with water use restrictions imposed by Federal, State or regional water agencies, or to respond to local or regional water shortage conditions and emergencies. Depending on the expected duration and severity of the shortage, such measures may include, but are not limited to, some or all of the actions listed in the District's WSSCP Stages 2 through 4 in Sections 10.05.090, 10.05.100 and 10.05.110 of this Chapter. Each elevated stage will include all of the elements of the previous stage(s), and are intended to be more restrictive than the previous stage(s). The Water Supply Shortage condition, response and use reduction percentages for each WSSCP stage are shown in the table in Section 10.05.080 of this Chapter.

(b) Based on changing conditions and the severity of the Water Supply Shortage, the General Manager will determine when Water Supply Shortage conditions exist and notify the District Board of the necessity to declare Water Supply Shortage emergencies and enact or rescind WSSCP Stages 2, 3 or 4 (collectively hereinafter "WSSCP Stages").

(c) Acting upon the recommendation of the General Manager, the District Board is authorized to enact or rescind any or all WSSCP Stages by adopting resolutions setting forth the criteria for implementation or termination of such WSSCP Stages, following publication of the declaration and notice of the public hearing to be held thereon, at least seven (7) days prior to the date of the hearing.

(d) Each declaration implementing or terminating a WSSCP Stage shall be published in a newspaper of general circulation in accordance with Government Code section 6061 and shall designate the entire area of the District or the affected portion thereof if the shortage is not District-wide. A notice shall also be included in the water customer bills mailed for the billing cycle immediately following the date a resolution declaring or implementing a WSSCP Stage change is adopted.

(e) It is the responsibility of all property owners to notify any Person(s) that use their premises, including, but not limited to, weekend rentals, multi-unit apartments, motels and commercial buildings, of any water use restrictions and the WSSCP Stage currently in effect.

(f) The General Manager will review Water User data District-wide based on gallons per capita per day (GPDC) for at least the past twelve (12) consecutive months in order to calculate the baseline water usage amount for purposes of determining the reduction demand requirements as a percentage.

**10.05.080 WSSCP TABLE - Condition/Response Stages; Reduction Requirement.**

<i>Water Supply Condition/ Demand Reduction Requirement</i>	<i>Year-round Water Conservation</i>	<i>Water Shortage Response Stage</i>
<b>Year-Round Water Conservation</b> Water waste prohibitions/mandatory restrictions in effect.	<b>Stage 1</b>	
<b>Threatened Water Supply Shortage</b> Ten percent (10%) to twenty-eight percent (28%) reduction.		<b>Stage 2</b>
<b>Critical Water Supply Shortage</b> Twenty-nine percent (29%) to forty percent (40%) reduction.		<b>Stage 3</b>
<b>Emergency Water Supply Shortage</b> Forty-one percent (41%) or more required.		<b>Stage 4</b>

**10.05.090 WSSCP Threatened Water Supply Shortage – Shortage Stage 2.**

(a) A Stage 2 Threatened Water Supply Shortage (“Shortage Stage 2”) shall be in effect when the District’s ability to provide water for ordinary domestic and commercial uses may be adversely impaired or threatened. Shortage Stage 2 will be implemented when a ten percent (10%) to twenty-eight percent (28%) reduction in Total Potable Water Production or water usage must be met. The actual percentage reduction required (based on State conservation mandates and other contributing factors) will be indicated in the District resolution enacting Shortage Stage 2.

(b) During Shortage Stage 2, all prohibitions contained in Section 10.05.060 (Conservation Stage 1) shall continue, and the following additional provisions and prohibitions shall also be in effect:

(1) Summer Outdoor Sprinkler Restrictions - From June 1, through September 30, it shall be prohibited to:

a. Apply potable water to any outdoor landscape at properties with street addresses ending in an even number (0,2,4,6, or 8) except on Tuesdays, Thursdays, or Saturdays between the hours of 10:00 pm and 6:00 am.

b. Apply potable water to any outdoor landscape at properties with street addresses ending in an odd number (1,3,5,7, or 9) except on Wednesdays, Fridays, and Sundays between the hours of 10:00 pm and 6:00 am.

c. Apply potable water to any outdoor landscape at facilities such as schools, parks, cemeteries, golf courses or industrial sites and areas without street address numbers, such as landscape maintenance assessment districts (“LMADS”), except on Mondays, Tuesdays, Thursdays, Fridays and Sundays, between the hours of 10:00 p.m. and 9:00 a.m., unless such facilities have Large Systems with approved Reduction Plans. Water Users at facilities with approved Reduction Plans may water in accordance with the provisions of those Reduction Plans so long as the Water Users maintain full compliance with the provisions of such Reduction Plans. Water Users which fail to meet the minimum required Reduction Plan percentage during any one (1) billing cycle more than two (2) times in one twelve-month period, shall not be considered in full compliance and must immediately resume watering in accordance with the first sentence of this Subsection c. Failure to immediately resume watering in accordance therewith shall constitute a violation of this Chapter.

(2) Winter Outdoor Sprinkler Restrictions - from October 1 through May 31, it shall be prohibited to:

a. Apply potable water to any outdoor landscape at properties with street addresses ending in an even number (0,2,4,6, or 8) except on Tuesdays, Thursdays, or Saturdays between the hours of 9:00 a.m. and 3:00 p.m.

b. Apply potable water to any outdoor landscape at properties with street addresses ending in an odd number (1,3,5,7, or 9) except on Wednesdays, Fridays, and Sundays between the hours of 9:00 a.m. and 3:00 p.m.

c. Apply potable water to any outdoor landscape at facilities such as schools, parks, cemeteries, golf courses or industrial sites and areas without street address numbers, such as landscape maintenance assessment districts (“LMADS”) except on Mondays, Tuesdays, Thursdays, Fridays and Sundays, between the hours of 9:00 a.m. and 3:00 p.m., unless such facilities have Large Systems with approved Reduction Plans. Water Users at facilities with approved Reduction Plans may water in accordance with the provisions of those Reduction Plans so long as the Water Users maintain full compliance with the provisions of such Reduction Plans. Water Users which fail to meet the minimum required Reduction Plan percentage during any one (1) billing cycle more than two (2) times in one twelve-month period, shall not be considered in full compliance and must immediately resume watering in accordance with the first sentence of this Subsection c. Failure to immediately resume watering in accordance therewith shall constitute a violation of this Chapter.

(3) Fall overseeding of Turf areas, unless irrigated with Reclaimed Water for non-residential water intensive landscape, shall be prohibited.

(4) Using water for washing of motor vehicles is prohibited, except when done by commercial car wash facilities equipped with a recirculation system.

(5) All swimming pools, spas and hot tubs must be covered when not in use.

(6) Exterior landscape plans for all new multi-family, commercial and industrial development must be presented to and approved by the District prior to issuance of a will serve letter.

(c) During Shortage Stage 2, it shall be unlawful and a violation of this Chapter for any Water User to make, cause, use or permit the use of water in any manner contrary to the provisions of this Section.

### **10.05.100 WSSCP Critical Water Supply Shortage – Shortage Stage 3.**

(a) A Stage 3 Critical Water Supply Shortage (“Shortage Stage 3”) shall be in effect when the District’s ability to provide water for ordinary domestic and commercial uses may be critically impaired or threatened. Shortage Stage 3 will be implemented when a twenty-nine percent (29%) to forty percent (40%) reduction in



Total Potable Water Production or water usage must be met. The actual percentage reduction required (based on State conservation mandates and other contributing factors) will be indicated in the District resolution enacting Shortage Stage 3.

(b) During Shortage Stage 3, all prohibitions contained in Section 10.05.060 (Conservation Stage 1) and Section 10.05.090 (Shortage Stage 2) shall continue, and the additional provisions and prohibitions set forth below shall also be in effect:

(1) Use of water from fire hydrants shall be limited to firefighting or other authorized or approved water uses that are necessary to maintain health, safety, and welfare.

(2) The use of water from fire hydrants and dispersed for purposes other than those shown in paragraph (1), above, is prohibited. All existing construction meters shall be removed and no installation of or new construction meters shall be permitted.

(3) Outdoor irrigation is only permitted during the specified months and on such days and hours as specified in the subdivision of Sections 10.05.090(b)(1) and (2) of this Chapter if a handheld hose fitted with a positive shut-off nozzle is used or a Low-Volume Irrigation System is used, provided such system is not on an irrigation Station which operates at the same time as a sprinkler system. Reduction Plans will not be available for facilities with Large Systems unless otherwise specified in the District resolution enacting Stage 3.

(4) It shall be unlawful to use a sprinkler system in the irrigation of outdoor landscaping of any kind.

(c) During Shortage Stage 3, it shall be unlawful and a violation of this Chapter for any Water User to make, cause, use or permit the use of water in any manner contrary to the provisions of this Section.

#### **10.05.110 WSSCP Emergency Water Supply Shortage – Shortage Stage 4.**

(a) An Emergency Water Supply Shortage Stage 4 (“Shortage Stage 4”) shall be in effect when a disaster or other major disruption in the water supply or any emergency that prevents the District from meeting the water demands of water users is threatened or exists. Shortage Stage 4 will be implemented when a Total Potable Water Production or water usage reduction in excess of forty-one percent (41%) is needed.. The actual percentage reduction required (based on State conservation mandates and other contributing factors) will be indicated in the District resolution enacting Shortage Stage 4.

(b) During Shortage Stage 4, no new will serve letters or hydrant flow meter permits will be issued, and all prohibitions contained in Section 10.05.060 (Conservation Stage 1), Section 10.05.090 (Shortage Stage 2), and Section

10.05.100 (Shortage Stage 3) shall continue. In addition, the following provisions and prohibitions shall also be in effect during Shortage Stage 4:

(1) The watering of Turf, lawns, grass, shrubbery, ground cover or other outdoor landscaping with potable water at any time is prohibited; the watering of parks, school grounds and golf courses with potable water also is prohibited.

(2) The use, filling or adding of water to swimming pools or spas of any size, fountains, ponds, water courses, waterfalls and other artificial water structures filled or refilled with water from any source is prohibited.

(3) The washing of vehicles, trucks, trailers, boats, airplanes, and other types of mobile equipment with potable water, is prohibited unless such washing is necessary for the immediate interest of the public health or safety, and such washing occurs upon the immediate premises of commercial vehicle washes using recirculated water.

(4) All existing nurseries shall discontinue all potable irrigation watering.

(c) During Shortage Stage 4, it shall be unlawful and a violation of this Chapter for any Water User to make, cause, use or permit the use of water in any manner contrary to the provisions of this Section.

**10.05.120 Hardship Exceptions.**

(a) The General Manager may grant exceptions ("Hardship Exceptions") for uses of water otherwise prohibited under the provisions of this Chapter if he/she finds that special circumstances make compliance impossible or that applying the restrictions herein would cause an emergency condition affecting the health, sanitation, fire protection ability or safety of the Water User (or the public) or would create an unnecessary and undue hardship to the Water User.

(b) Hardship Exceptions may be granted only upon written application by the Water User made to the General Manager on a form provided by the District. The application must state the nature of the hardship and include all facts and circumstances supporting the requested exception. The General Manager shall review such applications and provide a written determination to the Water User advising of his/her decision, which written determination shall include the reasons supporting the determination. If a Hardship Exemption is granted, the General Manager may impose in the written determination any conditions and/or terms he/she finds to be just and proper under the circumstances. If the General Manager determines no Hardship Exception is warranted, the Water User may appeal the General Manager's decision in the manner set forth in Section 10.05.200.

**10.05.130 Reclaimed water pipelines.**

(a) Reclaimed water pipelines in new residential tract developments shall be installed in accordance with the provisions of District's Recycled Water Ordinance. Such pipelines shall be connected to the District's Reclaimed water system, where available and/or appropriate. The foregoing requirements are not applicable to individual residential Lots.

(b) It is District policy to encourage the use of Reclaimed water, whenever such use is appropriate and safe, in order to conserve potable water. To further these efforts, all Water Users with Reclaimed water pipelines should make reasonable efforts to use Reclaimed water for landscaping purposes, whenever Reclaimed water is readily available and will not pose a danger to human health and safety.

**10.05.140 Limited exemption to restrictions for users of Reclaimed water.**

To the extent that users of Reclaimed or Recycled Water are exempted from restrictions under the WSSCP Stages set forth in this Chapter, such users shall clearly post notices stating that the water being used is not potable, not from the public drinking water supply, and is in conformance with the District's WSSCP.

**10.05.150 Enforcement.**

Enforcement Officers (as defined in Section 10.05.030 of this Chapter) shall be empowered to investigate instances of Water Waste and enforce all provisions of this Chapter. Enforcement Officers will issue any notice of violation ("NOV") or administrative citation in accordance with the provisions of this Chapter.

**10.05.160 Administrative Citations and Administrative Fines.**

(a) Any Person or Water User violating any provision of this Chapter may be issued an administrative citation by an Enforcement Officer as provided for in this Chapter.

(b) Each and every day a violation of any provision of this Chapter exists constitutes a separate and distinct violation. Each provision of this Chapter which is violated also constitutes a separate violation.

(c) An Administrative Fine for violations of any provisions of this Chapter may be assessed by means of an administrative citation issued by an Enforcement Officer. Administrative Fines so assessed shall be payable directly to the District.

(d) Administrative Fines assessed by means of administrative citations shall be due and payable as set forth in the administrative citation and shall be collected in accordance with the District's currently-effective Water Regulations and Service provisions as adopted by ordinance (presently codified in Chapter 10.04 of this Code).

**10.05.170 Notices of Violation and Administrative citations; service and posting.**

(a) Upon discovery or observing any violation of this Chapter for which an Administrative Fine has been prescribed, the Enforcement Officer may issue a NOV prior to an administrative citation to the Responsible Person(s), which NOV shall be delivered in accordance with the provisions of this Section. The NOV and administrative citation shall be issued on forms prescribed by the General Manager.

(b) The Enforcement Officer may obtain the signature of the Responsible Person(s) on the NOV or administrative citation. If the Responsible Person(s) refuses or fails to sign the NOV or administrative citation, the failure or refusal to sign shall not affect the validity of the NOV or administrative citation or any subsequent proceedings.

(c) The Enforcement Officer shall hand-deliver the NOV or administrative citation to the Responsible Person(s) at the premises where the violation occurred, or if no Responsible Person(s) are present, shall post the NOV or administrative citation by affixing it to a surface in a conspicuous place on the premises where the violation occurred. Failure of a NOV or administrative citation to remain in place after posting shall in no way affect the validity of the NOV or administrative citation or any subsequent proceedings.

(d) The Enforcement Officer shall also mail a copy of the NOV or administrative citation (by first class mail, postage prepaid and by certified mail, return receipt requested) to the address of the Water User (customer) account associated with the premises where the violation occurred, and to the address of any other Responsible Person(s) known to the District. The failure of the person to whom the NOV or administrative citation is addressed to receive the NOV or administrative citation shall not affect the validity of the NOV, the administrative citation or any subsequent proceedings.

(e) The NOV and administrative citation shall include all of the following:

- (1) A brief description of the violation(s) or repeat of violation(s);
- (2) The date and approximate time of the violation and the location at which the violation(s) was observed;
- (3) The Section of this Chapter violated;
- (4) The corrective action required;
- (5) The time frame in which the violation(s) must be corrected or abated (not less than twenty-four (24) hours after delivery of the NOV or administrative citation or within such time as the Enforcement Officer determines is reasonable

under the circumstances); but in no event later than fourteen (14) days from the date the violation was first observed;

(6) The consequences of the failure to correct the violation, including the amount of any Administrative Fine to be imposed for the violation(s), and a statement explaining that each day violation(s) are not abated after the specified deadline constitute new violation(s) for which additional NOV's and administrative citations may be issued, and for which additional Administrative Fines may be assessed;

(7) A statement advising that any Administrative Fines shall be placed on the water utility bill of the Water User (customer) account associated with the premises upon which the violation occurred, to be paid and collected in accordance with the District's currently-effective Water Regulations and Service provisions as adopted by ordinance (currently codified in Chapter 10.04 of this Code); and

(8) A statement describing the rights of appeal.

#### **10.05.180 Administrative Fine Schedule.**

(a) Administrative Fines shall be assessed as follows:

(1) For a first violation of any prohibition of this Chapter prior to the issuance of an administrative citation, a NOV shall be issued in accordance with the procedures for service and posting set forth in Section 10.05.170 of this Chapter. The NOV will include a copy of this Chapter (or a summary thereof).

(2) For violation(s) of any prohibitions during Conservation Stage 1, Administrative Fines may be assessed for each violation of the provisions of Section 10.05.060 in the amount of one hundred dollars (\$100.00).

(3) For violation(s) of any prohibitions during Shortage Stage 2, Administrative Fines may be assessed for each violation of the provisions of Section 10.05.090 in the amount of two hundred dollars (\$200.00).

(4) For violation(s) of any prohibitions during Shortage Stage 3, Administrative Fines may be assessed for each violation of the provisions of Section 10.05.100 in the amount of three hundred dollars (\$300.00).

(5) For violation(s) of any prohibitions during Shortage Stage 4, Administrative Fines may be assessed for each violation of the provisions of Section 10.05.110 in the amount of five hundred dollars (\$500.00).

(b) The General Manager or his/her designee may waive any Administrative Fine or portion thereof assessed under this Section pursuant to written procedures (to be

developed by the General Manager) wherein mitigating circumstances or other conditions make the imposition of the Administrative Fine unreasonable.

(c) If the Responsible Person(s) fails to correct the violation(s), subsequent NOVs, administrative citations and fines may be issued for the same violation(s).

(d) Payment of the Administrative Fine shall not excuse the failure to correct the violation nor shall it bar further enforcement action up to and including discontinuance of water service (following the notice specified in Section 10.05.190(c) of this Chapter.

(e) Any fines imposed under this Section shall be collected in accordance with the District's currently-effective Water Regulations and Service provisions as adopted by ordinance (presently codified in Chapter 10.04 of this code). Such fines shall be deposited in the District's general fund.

#### **10.05.190 Other Enforcement Remedies; Penalties Cumulative.**

(a) Misdemeanor. In lieu of the Administrative Fines and other enforcement measures provided in this Chapter, or any other applicable remedies available to the District, pursuant to Water Code section 377, violations of this Chapter may be prosecuted as a misdemeanor, punishable by imprisonment in the county jail for not more than thirty (30) days, or by a fine not exceeding one thousand dollars (\$1,000), or by both.

(b) Civil suits and Injunctive Relief. In addition to any other remedies provided in this Chapter or available under applicable law, the District may alternatively file a civil suit and/or seek injunctive relief in a court of competent jurisdiction.

(c) Discontinuation of Water Service. In addition to Administrative Fines or other remedies, the District, after providing a fifteen (15) day written advance notification (to be served in the manner set forth in Section 10.05.170), may disconnect a Water User's service for repeated violations of this Chapter occurring during Shortage Stages 2 through 4, subject to the appeal process in Section 10.05.200.

(d) Penalties Cumulative. Penalties for failure to comply with any of the provisions of this Chapter are cumulative and each day that a violation of this Chapter occurs is a separate violation and may be treated as such.

#### **10.05.200 Appeals.**

(a) Recipients of NOVs, administrative citations and such other Persons as are provided a right of appeal by Sections 10.05.120(b) and 10.05.190(c) of this Chapter shall have the appeal rights set forth herein. An appeal must:

(1) Be submitted and received by the General Manager at the District Offices located at 14343 Civic Drive, Victorville, CA 92393-5001 within ten (10) calendar days from date of delivery or mailing of the NOV (or other written notice), or within ten days of the date a Hardship Exception under Section 10.05.120 is denied. If the deadline falls any day the District Offices are closed, then the deadline shall be extended until the next regular business day when the District Offices are open.

(2) Be in writing, legible and indicate a return address;

(3) Be accompanied by the amount of the Administrative Fine (or an appeal fee amount to be set by resolution of the District Board for appeals not associated with an Administrative Fine) or a hardship waiver request;

(4) Specify the basis for the appeal in detail and include a copy of the NOV, administrative citation or other notice/decision and any supporting evidence or mitigating circumstances.

(b) Upon a timely receipt of the written notice of appeal, the General Manager shall transmit same to the Hearing Officer, who shall as soon as practicable, fix a date, time, and place for appeal hearing. Written notice of the date, time, and place of the hearing will be served by first class mail to the Appellant, postage prepaid at the return address indicated on the written appeal. Service of the appeal notice must be made on the Appellant at least ten (10) calendar days prior to the date of the hearing.

(c) Appellant's timely submitted written request for an appeal hearing shall not stay the imposition of an Administrative Fine, and during the pendency of the appeal violations may still be cited and the District may take any action under this Chapter or provided for at law to address, abate, or otherwise remedy any ongoing violations. However, if it is determined by the Hearing Officer that the Administrative Fine was wrongly charged and paid, the District shall credit any amount due to the Water User's next bill and issue a check for any surplus should the Water User so request.

(d) Appellant's timely submitted written request for an appeal hearing shall stay the discontinuation of water service during the pendency of the appeal; however, violations may still be cited during the pendency of the appeal and the District may take any action under this Chapter or provided for at law to address, abate, or otherwise remedy any ongoing violations.

(e) The failure of Appellant or any other Person with an interest in the matter to receive a properly addressed notice of the hearing shall not affect the validity of any proceedings under this Chapter. Service by first class mail, postage prepaid, and via certified mail, return receipt requested shall be effective on the date of mailing.

(f) The failure of Appellant, or any other Person with an interest in the matter, to file an appeal in accordance with the provisions of this Section shall constitute a

waiver of those Persons' rights to an administrative determination of the merits of the NOV, administrative citation (or other written notice or decision) and a waiver of the right to contest the amount of the Administrative Fine. If no appeal is filed, the NOV, administrative citation, written notice ordering discontinuation of water service and/or the General Manager's written denial of a Hardship Exception shall each be deemed a final administrative order.

(g) In addition to the provisions below, the General Manager may establish other administrative regulations for implementing this Section, conducting hearings and rendering decisions:

(1) The Hearing Officer shall conduct all appeal hearings held in connection with this Chapter.

(2) The Appellant may request the General Manager excuse the Hearing Officer for reasons of actual prejudice against the Appellant's cause.

(3) The Hearing Officer shall conduct an orderly, fair hearing and accept evidence on which persons would commonly rely in the conduct of their ordinary business affairs as follows:

a. The Hearing Officer shall accept testimony by declaration under penalty of perjury relating to the violation;

b. The Responsible Person(s) or any other interested Person may present testimony or evidence concerning the violation.

(h) The Hearing Officer may reduce, waive, or conditionally reduce the Administrative Fines assessed pursuant to an administrative citation or any late fees assessed, if mitigating circumstances are shown and the Hearing Officer states specific grounds for reduction or waiver in the written decision. The Hearing Officer may impose conditions and deadlines for correction of violations, payment of outstanding fines, resumption of water service and other appropriate relief.

(i) The Hearing Officer shall make findings based on the record of the hearing and make a written decision based on the findings. The Hearing Officer shall preserve all exhibits submitted by the parties and shall serve the decision by first class mail on the Appellant within ten (10) working days after the hearing. The decisions of the Hearing Officer are final and conclusive administrative orders, subject only to review by the Superior Court. There are no appeals to the District Board.

#### **10.05.210 Review of Final Order.**

After receipt of the Hearing Officer's decision, the Appellant may file for de novo review in the Superior Court in accordance with the provisions of Government Code section 53069.4(b).



**SECTION 3. SEVERABILITY.**

The District Board declares that, should any provision, section, paragraph, sentence or word of this Ordinance be rendered or declared invalid by any final court action in a court of competent jurisdiction or by reason of any preemptive legislation, the remaining provisions, sections, paragraphs, sentences or words of this Ordinance as hereby adopted shall remain in full force and effect.

**SECTION 4. CONFLICTING PROVISIONS.**

The provisions of this Ordinance are in addition to all other District Regulations for Water Service, and in the event of a conflict between this Ordinance and other rules and regulations relating to the same subject matter, the conflict shall, insofar as practical, be resolved to implement the purposes of this Ordinance.

**SECTION 5. EFFECTIVE DATE.**

This Ordinance shall become effective immediately upon the date of adoption as set forth in Water Code section 376.

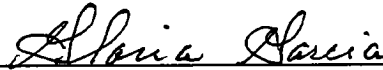
**SECTION 6. PUBLICATION.**

Following its adoption, the District Secretary shall certify to the passage of and publish this Ordinance in accordance with the provisions of Water Code section 376.

Ordinance No. VWD-012

THIS ORDINANCE SHALL BE IN FULL FORCE AND EFFECT ON MAY 19, 2015.

PASSED, APPROVED AND ADOPTED THIS 19<sup>th</sup> DAY OF MAY, 2015



CHAIRMAN OF THE BOARD OF DIRECTORS

ATTEST:



BOARD SECRETARY/CITY CLERK

APPROVED AS TO FORM:



CITY ATTORNEY

I, CAROLEE BATES, Board Secretary to the Victorville Water District of the City of Victorville and ex-officio Clerk to the City Council of said City, DO HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. VWD-012 which was introduced at a meeting held on May 19, 2015 and duly adopted at a meeting held on the 19<sup>th</sup> day of May 2015 by the following roll call vote, to wit:

AYES: Board Members Garcia, Kennedy and McEachron

NOES: None

ABSENT: Board Members Cox and Negrete

ABSTAIN: None



BOARD SECRETARY/CITY CLERK

**ORDINANCE NO. VWD-013**

**AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE VICTORVILLE WATER DISTRICT MAKING CERTAIN CLARIFYING AND HARMONIZING AMENDMENTS TO ORDINANCE NO. VWD-012 WHICH CREATED A NEW CHAPTER 10.5 IN TITLE 10 OF THE VICTORVILLE MUNICIPAL CODE TITLED "VICTORVILLE WATER DISTRICT CONSERVATION PROGRAM AND WATER SHORTAGE CONTINGENCY PLAN"**

**WHEREAS**, the Victorville Water District ("District") is a county water district and a subsidiary district of the City of Victorville ("City"); and

**WHEREAS**, the District and the City have an interest in maintaining landscape standards that support water conservation and have coordinated (and will continue to coordinate) their conservation efforts; and

**WHEREAS**, on May 19, 2015, in response to Governor Brown's April 1, 2015 Executive Order No. B-29-15 and the final conservation regulations of the State Water Resources Control Board (Sections 863, 864, 865 and 866 of Title 23 of California Code of Regulations, adopted on May 5, 2015); the Board of Directors of the District ("District Board") adopted Ordinance No. VWD-012; and

**WHEREAS**, Ordinance No. VWD-012 ("VWD-012") regulates (among other things) conservation landscaping standards for water users served by the District, which standards were formerly regulated by Chapter 13.60 of the Victorville Municipal Code ("VMC"); and

**WHEREAS**, it was originally contemplated by District and City staff that an ordinance to repeal VMC Chapter 13.60 would be brought to the City Council for consideration following passage of VWD-012; and

**WHEREAS**, following confirmation that some properties located within the City's territorial boundaries were not served by the District, but were still subject to the City's conservation landscaping requirements, City staff brought Ordinance No. 2338 ("Ord. 2338") to the City Council for consideration on June 2, 2015 to: (1) harmonize the conservation landscaping standards in VMC Chapter 13.60 with those VWD-012; and (2) remove certain provisions inapplicable to non-District served properties; and

**WHEREAS**, a public hearing on Ord. 2338 was opened on June 2, 2015 and subsequently continued to July 21, 2015 so that this Ordinance No. VWD-013 could be brought to the District Board to amend and harmonize certain provisions of VWD-012 with Ord. No. 2338 and ensure that any subsequent State conservation mandates were appropriately accounted for; and

**WHEREAS**, the District Board finds that the adoption of this Ordinance is exempt from the provisions of Public Resources Code section 21000 *et seq.* (the California Environmental Quality Act) as a project undertaken to assure the maintenance, restoration or enhancement of a natural resource pursuant to Title 14, California Code of Regulations section 15307; and

**WHEREAS**, the District Board finds it is necessary to adopt Ordinance No. VWD-013 to clarify and harmonize its water conservation landscape provisions with those of Ord. 2338 in the interest of protecting the health, safety and welfare of the District's water users and other residents of the City.

**NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE VICTORVILLE WATER DISTRICT DOES HEREBY ORDAIN AS FOLLOWS:**

**SECTION 1. RECITALS.**

The recitals and findings set forth above are true and correct, and are hereby incorporated by this reference as if set forth in their entirety.

**SECTION 2. AMENDMENT TO SECTIONS 10.05.030(ii), 10.05.050, 10.05.060(b)(15), 10.05.060(b)(16), 10.05.090(b)(6) AND 10.05.170(d) OF TITLE 10, CHAPTER 10.05 OF THE VICTORVILLE MUNICIPAL CODE, TITLED "VICTORVILLE WATER DISTRICT CONSERVATION PROGRAM AND WATER SHORTAGE CONTINGENCY PLAN"**

**A. Subsection (ii) of Section 10.05.030 (Definitions) shall be amended in its entirety to read as follows:**

(ii) "Water-wise Plants" means plants that perform well in the District's service area and have been selected according to their ability to withstand the extreme hot/cold desert climate and fluctuating temperatures; adaptability to drought conditions; and ability to survive once established with a limited amount of supplemental water. The District will compile a list of Water-wise Plants into a comprehensive Water wise Plant List (the "WWP List").

**B. Section 10.05.050 (The Water-wise Plant List ("WWP List")) shall be amended in its entirety to read as follows:**

(a) Many factors determine whether a Water-wise Plant will adapt or perform well, and even though a plant appears on the WWP List, there is no assurance it will adapt or thrive. Therefore, from time to time, the General Manager or his/her designee will amend the WWP List as necessary to add or remove plants. The currently effective WWP List will be posted on the District's website and will be available in printed form in the District offices.

(b) The General Manager, or his/her designee, may allow Water Users to use other drought tolerant plants not contained on the WWP List, provided that, upon request, such user (or Person acting on his/her behalf) provides adequate proof that such plant(s) are suitable for use in the area at issue, are water-efficient and have a drought tolerance level equal or greater to those on the WWP List. Any such permitted deviation for use of plants not on the currently-effective WWP List shall only be effective when authorized by the General Manager, or his/her designee.

**C. Subsection (b)(15) of Section 10.05.060 (Year-Round Prohibited Water Waste - Conservation Stage 1) shall be revised in its entirety to read as follows:**

(15) All rehabilitated or New Non-residential Facilities shall limit Water-intensive Landscape and Turf within landscaped area to the following percentages of the total Lot area, and all other areas required to be landscaped with plants shall consist of plants on the WWP List, unless deviation therefrom has been authorized by the General Manager or his/her designee in accordance with Section 10.05.050(b) of this Chapter:

- a. Churches: Twenty five percent (25%) of total lot area.
- b. Resorts, including hotels and motels: Ten percent (10%) of the total lot area.
- c. Commercial and industrial uses, fewer than nine thousand square feet: Ten percent (10%) of the total lot area.
- d. Commercial and industrial uses, nine thousand square feet and greater: Ten percent (10%) of the first nine thousand square feet, and five percent (5%) of the remaining lot area.
- e. Common areas in residential developments: Ten percent (10%) of the first acre and five percent (5%) of each additional acre up to five acres. Residential developments larger than five acres shall not plant any additional water intensive landscape and turf in common areas.
- f. Active Recreational Area shall not be considered in calculating the percentage of the total Lot area and shall not be considered in determining compliance with this Section.

**D. Subsection (b)(16) of Section 10.05.060 (Year-Round Prohibited Water Waste - Conservation Stage 1) shall be revised in its entirety to read as follows:**

(16) Any rehabilitated or New Model Homes and/or rehabilitated or New Residential Developments shall limit Water-intensive Landscape and Turf area at the following percentages of the total Lot area, and all remaining landscaped area, as required by the City's development standards, shall consist of plants on the WWP List, unless deviation therefrom has been authorized by the General Manager or his/her designee in accordance with Section 10.05.050(b) of this Chapter:

- a. Nine thousand square feet or less: Ten percent (10%) of the total lot area.
- b. Greater than nine thousand square feet to one acre: Ten percent (10%) of the first nine thousand square feet and five percent (5%) of the remainder of the lot area.
- c. Water intensive landscape or turf shall only be located in rear yards.
- d. No Water-Intensive Landscape or Turf shall be planted in any Right-of-Way.
- e. Prior to closing on a new residential unit, the developer shall provide the homeowner with a copy of the District's water conservation ordinance. Upon receipt, the homeowner shall sign an affidavit of acceptance. The developer shall permanently maintain the signed affidavit and submit a copy to the General Manager.

**E. Subsection (b)(6) of Section 10.05.090 (WSSCP Threatened Water Supply Shortage – Shortage Stage 2) shall be revised in its entirety to read as follows:**

(6) Exterior landscape plans for all new multi-family, commercial and industrial development must be presented to and approved by the District prior to issuance by the City of a building permit.

**F. Subsection (d) of Section 10.05.170 (Notices of Violation and Administrative citations; service and posting) shall be revised in its entirety to read as follows:**

(d) The Enforcement Officer shall also mail a copy of the NOV or administrative citation (by first class mail, postage prepaid or by certified mail, return receipt requested) to the address of the Water User (customer) account

associated with the premises where the violation occurred, and to the address of any other Responsible Person(s) known to the District. The failure of the person to whom the NOV or administrative citation is addressed to receive the NOV or administrative citation shall not affect the validity of the NOV, the administrative citation or any subsequent proceedings.

**SECTION 3. SEVERABILITY.**

The District Board declares that, should any provision, section, paragraph, sentence or word of this Ordinance be rendered or declared invalid by any final court action in a court of competent jurisdiction or by reason of any preemptive legislation, the remaining provisions, sections, paragraphs, sentences or words of this Ordinance as hereby adopted shall remain in full force and effect.

**SECTION 4. CONFLICTING PROVISIONS.**

The provisions of this Ordinance are in addition to all other District Regulations for Water Service, and in the event of a conflict between this Ordinance and other rules and regulations relating to the same subject matter, the conflict shall, insofar as practical, be resolved to implement the purposes of this Ordinance.

**SECTION 5. EFFECTIVE DATE.**

This Ordinance shall take effect thirty (30) days after its final passage.

**SECTION 6. CERTIFICATION.**

The District Secretary is hereby directed to certify to the passage and adoption of this Ordinance and to cause it to be published as required by law.

**RESOLUTION NO. VWD 15-006**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE VICTORVILLE WATER DISTRICT DECLARING A WATER SHORTAGE EMERGENCY AND CALLING FOR IMMEDIATE IMPLEMENTATION OF STAGE 2 THREATENED WATER SUPPLY SHORTAGE (“SHORTAGE STAGE 2”) PURSUANT TO ORDINANCE NO. VWD-012**

**WHEREAS**, the State of California is experiencing historic and serious drought conditions, as evidenced by the drought states of emergency declared by Governor Brown in January, April and December 2014; and

**WHEREAS**, Article 10, Section 2 of the California Constitution declares that waters of the State of California are to be put to beneficial use, and that waste, unreasonable use, or unreasonable method of use of water be prevented, and that water be conserved for the public welfare; and

**WHEREAS**, following another record dry winter and dwindling snowpack levels in the Sierra Nevada Mountains, Governor Brown issued Executive Order No. B-29-15 on April 1, 2015 declaring that all prior executive orders relating to the drought state of emergency remained in full force and ordering the State Water Resources Control Board (“SWRCB”) to impose new restrictions on urban water suppliers, such as the Victorville Water District (the “District”), to achieve a State-wide twenty-five percent (25%) reduction in urban potable water usage through February 2016; and

**WHEREAS**, in response to this Executive Order, on April 20, 2015 and April 28, 2015, SWRCB staff revised and released emergency water conservation regulations, the final version of which was adopted by the SWRCB on May 5, 2015; and

**WHEREAS**, among other things, these final SWRCB regulations (Sections 863, 864, 865 and 866 of Title 23 of California Code of Regulations) now require the District to reduce its total potable water production by twenty-eight percent (28%) for each month as compared to the amount used in the same months in 2013, beginning June 1, 2015; and

**WHEREAS**, to promote water conservation; preserve the precious water resources of the State and the District; comply with the Governor’s Executive Orders; and meet the conservation standard set forth the final SWRCB emergency water conservation regulations, District staff drafted, revised and presented to the District Board of Directors (“District Board”) Ordinance No. VWD-012 to establish a water conservation program and amend the District’s Water Supply Shortage Contingency Plan (“WSSCP”); and

CMX



**WHEREAS**, on or about May 19, 2015, following duly-noticed and subsequently continued public hearings, the District Board adopted Ordinance No. VWD-012 (“VWD-012”), which included as part of the District’s WSSCP, various Water Supply Shortage Stages to be declared and implemented by District resolution as needed (upon the recommendation of the General Manager and following public notice and hearing) to respond to escalating drought conditions and other water supply shortage events; and

**WHEREAS**, Water Code section 350 *et seq.*, permits the District to: (1) declare water shortage emergency conditions when it finds and determines that the ordinary demands and requirements of its water customers cannot be satisfied without depleting the District’s water supply to the extent that there would be insufficient water for human consumption, sanitation, and fire protection; and (2) adopt regulations and restrictions that include discontinuance of service as an enforcement option where a water shortage emergency condition has been declared; and

**WHEREAS**, in accordance with Section 10.05.070 of VWD-012 and the provisions of Water Code section 350 *et seq.*, public notice of the hearing to be held on the proposed adoption of Resolution No. VWD 15-006 (“this Resolution”) was duly published on May 8, 2015, and a public hearing was held in accordance therewith on May 19, 2015; and

**WHEREAS**, Section 10.05.090 of VWD-012 indicates that a Stage 2 Threatened Water Supply Shortage (“Shortage Stage 2”) shall be in effect following the recommendation of the General Manager and adoption of a resolution by the District Board when the District’s ability to provide water for ordinary domestic and commercial uses may be adversely impaired or threatened and shall be implemented when a ten percent (10%) to twenty-eight percent (28%) reduction in total potable water production or use must be met; and

**WHEREAS**, in order to respond to Governor’s latest Executive Order and to meet the twenty-eight percent (28%) total potable water production reduction mandate applicable to the District as set forth in the final SWRCB regulations adopted on May 5, 2015, the General Manager of the District hereby recommends that the District Board adopt this Resolution to immediately implement Shortage Stage 2; and

**WHEREAS**, in light of the continuing drought conditions, the Governor’s Executive Orders, the SWRCB’s final emergency conservation regulations, the approaching summer months, and such other matters as are described in these Recitals, the District Board finds it is necessary to declare a water shortage emergency, and determines that the ordinary demands and requirements of its Water Users cannot be satisfied without depleting the water supply of the District to the extent that there would be insufficient water for human consumption, sanitation, and fire protection; and

**WHEREAS**, in light of the water shortage emergency; the mandate to meet the 28% reduction in potable water production beginning June 1, 2015; and to protect the health, safety and welfare of the District’s water users; the District Board finds it is necessary to adopt this Resolution declaring a water shortage emergency and implementing Shortage Stage 2, effective immediately.

**NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE VICTORVILLE WATER DISTRICT DOES HEREBY RESOLVE AS FOLLOWS:**

**Section 1.** That the findings and facts set forth in the above Recitals are true and correct are incorporated into and made part of this Resolution No. VWD 15-006 (“this Resolution”) by this reference.

**Section 2.** That a water shortage emergency is hereby declared, and that the Stage 2 Threatened Water Supply Shortage (“Shortage Stage 2”) provisions and prohibitions as set forth in Ordinance No. VWD-012 (“VWD-012”) are hereby implemented and will become effective immediately upon the adoption of this Resolution.

**Section 3.** That nothing in this Resolution shall restrain or inhibit the District’s ability to declare further water shortage emergencies, activate higher Water Supply Shortage Stages and/or adopt additional measures and prohibitions under VWD-012 and/or other applicable provisions of State law.

**Section 4.** That this Resolution shall take effect immediately upon its adoption (provided that the District Board of Directors shall have first passed, approved and adopted VWD-012).

**Section 5.** That the Secretary to the Board shall certify to the passage and adoption of this Resolution; shall enter the same in the book of original Resolutions of the Victorville Water District; and shall make a minute of passage and adoption thereof in the records of the proceedings of the Victorville Water District, in the minutes of the meeting at which this Resolution is passed and adopted.

**[END OF PAGE]**

Resolution No. VWD 15-006

PASSED, APPROVED AND ADOPTED this 19<sup>th</sup> day of MAY 2015.

  
\_\_\_\_\_  
CHAIRMAN OF THE BOARD OF DIRECTORS

ATTEST:

  
\_\_\_\_\_  
BOARD SECRETARY

APPROVED AS TO FORM:

  
\_\_\_\_\_  
LEGAL COUNSEL FOR VICTORVILLE WATER DISTRICT


I, CAROLEE BATES, City Clerk of the City of Victorville and ex-officio Clerk to the Victorville Water District of said City, DO HEREBY CERTIFY that the foregoing is a true and correct copy of Resolution No. VWD 15-006 and was adopted at a meeting held on the 19<sup>th</sup> day of May 2015, by the following roll call vote, to wit:

AYES: Board Members Garcia, Kennedy and McEachron

NOES: NONE

ABSENT: Board Members Cox and Negrete

ABSTAIN: NONE

  
\_\_\_\_\_  
CITY CLERK



**AGENDA ITEM**

**PUBLIC HEARING**

**VICTORVILLE WATER DISTRICT BOARD OF DIRECTORS**

**MEETING OF: May 19, 2015**

**DATE:** May 12, 2015

**SUBMITTED BY:** Douglas B. Robertson, District General Manager  
Donna McCormick, Water Conservation Supervisor  
Reviewed by: District Counsel

**SUBJECT:** Consideration of Proposed Resolution No. VWD 15-006: **A RESOLUTION OF THE BOARD OF DIRECTORS OF THE VICTORVILLE WATER DISTRICT DECLARING A WATER SHORTAGE EMERGENCY AND CALLING FOR IMMEDIATE IMPLEMENTATION OF STAGE 2 THREATENED WATER SUPPLY SHORTAGE (“SHORTAGE STAGE 2”) PURSUANT TO ORDINANCE NO. VWD-012**

**RECOMMENDATION:** That the Honorable Board of Directors: (1) Open the Public Hearing; (2) Take Testimony; (3) Close the Public Hearing; and (4) adopt Proposed Resolution No. VWD 15-006.

**ATTACHMENTS:** Resolution No. VWD 15-006

**FISCAL IMPACT:** Undetermined at this time; but enforcement costs are anticipated to be supplemented by administrative fines.

**PROJECT BUDGET:** \$  
**PROJECT COST:** \$  
**PROJECT BALANCE:** \$

**BUDGET ACCT NO:** None

<p><b>--Finance Use Only--</b></p> <p>Additional Expense:</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes/\$Amount:</p> <p>Additional Revenue:</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes/\$Amount:</p> <p>CFO Review</p> <p>_____</p>
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**SUMMARY:** Ordinance No. VWD-012 (“VWD-012”) established the Victorville Water District (“District”) standards, guidelines and procedures for year-round water conservation to prevent the waste or unreasonable use of water; and (2) specified restrictions, prohibitions and limitations on water use pursuant to the State Water Resources Control Board (“SWRCB”) final regulations implemented in response to the Governor’s Executive Order B-29-15 calling for action to address the State’s escalating drought and water shortage conditions.



Upon its adoption, VWD-012 immediately activated a number of water conservation measures and prohibitions on water waste as part of its "Conservation Stage 1." However, to promote flexibility and provide for increasingly more stringent water use prohibitions and conservation requirements when drought and water supply shortage conditions intensify; VWD-012 contains three Water Supply Shortage Stages (Shortage Stages 2, 3 and 4) which can be activated by resolutions adopted by the District Board of Directors ("District Board") when the District's General Manager so recommends (following noticed public hearings). These Shortage Stages can likewise be deactivated in the same fashion when drought and water supply shortage conditions cease or become less severe.

Because of the current drought state of emergency and the final emergency water conservation regulations adopted by the SWRCB on May 5, 2015 ("Final Regs."); the District must reduce its total potable water production by twenty-eight percent (28%) each month (over 2013 water usage figures for the same months) beginning as of June 1, 2015.

Although Conservation Stage 1 measures are now in effect, the General Manager and District staff know that additional water use restrictions are needed to reach the 28% reduction required by the Final Regs. It is therefore recommended that the District Board adopt Resolution No. VWD 15-006 which both: (1) declares a water shortage emergency; and (2) immediately implements/activates Water Supply Shortage Stage 2 ("Shortage Stage 2"). Shortage Stage 2 prohibitions are in Section 10.05.090 of VWD-012 and read, in pertinent part, as follows:

(b) During Shortage Stage 2, all prohibitions contained in Section 10.05.060 (Conservation Stage 1) shall continue, and the following additional provisions and prohibitions shall also be in effect:

(1) Summer Outdoor Sprinkler Restrictions - From June 1, through September 30, it shall be prohibited to:

a. Apply potable water to any outdoor landscape at properties with street addresses ending in an even number (0,2,4,6, or 8) except on Tuesdays, Thursdays, or Saturdays between the hours of 10:00 pm and 6:00 am.

b. Apply potable water to any outdoor landscape at properties with street addresses ending in an odd number (1,3,5,7, or 9) except on Wednesdays, Fridays, and Sundays between the hours of 10:00 pm and 6:00 am.

c. Apply potable water to any outdoor landscape at facilities such as schools, parks, cemeteries, golf courses or industrial sites and areas without street address numbers, such as landscape maintenance assessment districts ("LMADS"), except on Mondays, Tuesdays, Thursdays, Fridays and Sundays, between the hours of 10:00 p.m. and 9:00 a.m., unless such facilities have Large



Systems with approved Reduction Plans. Water Users at facilities with approved Reduction Plans may water in accordance with the provisions of those Reduction Plans so long as the Water Users maintain full compliance with the provisions of such Reduction Plans. Water Users which fail to meet the minimum required Reduction Plan percentage during any one (1) billing cycle more than two (2) times in one twelve-month period, shall not be considered in full compliance and must immediately resume watering in accordance with the first sentence of this Subsection c. Failure to immediately resume watering in accordance therewith shall constitute a violation of this Chapter.

- (2) Winter Outdoor Sprinkler Restrictions - from October 1 through May 31, it shall be prohibited to:
- a. Apply potable water to any outdoor landscape at properties with street addresses ending in an even number (0,2,4,6, or 8) except on Tuesdays, Thursdays, or Saturdays between the hours of 9:00 a.m. and 3:00 p.m.
  - b. Apply potable water to any outdoor landscape at properties with street addresses ending in an odd number (1,3,5,7, or 9) except on Wednesdays, Fridays, and Sundays between the hours of 9:00 a.m. and 3:00 p.m.
  - c. Apply potable water to any outdoor landscape at facilities such as schools, parks, cemeteries, golf courses or industrial sites and areas without street address numbers, such as landscape maintenance assessment districts ("LMADS") except on Mondays, Tuesdays, Thursdays, Fridays and Sundays, between the hours of 9:00 a.m. and 3:00 p.m., unless such facilities have Large Systems with approved Reduction Plans. Water Users at facilities with approved Reduction Plans may water in accordance with the provisions of those Reduction Plans so long as the Water Users maintain full compliance with the provisions of such Reduction Plans. Water Users which fail to meet the minimum required Reduction Plan percentage during any one (1) billing cycle more than two (2) times in one twelve-month period, shall not be considered in full compliance and must immediately resume watering in accordance with the first sentence of this Subsection c. Failure to immediately resume watering in accordance therewith shall constitute a violation of this Chapter.
- (3) Fall overseeding of Turf areas, unless irrigated with Reclaimed Water for non-residential water intensive landscape, shall be prohibited.
- (4) Using water for washing of motor vehicles is prohibited, except when done by commercial car wash facilities equipped with a recirculation system.
- (5) All swimming pools, spas and hot tubs must be covered when not in use.
- (6) Exterior landscape plans for all new multi-family, commercial and industrial development must be presented to and approved by the District prior to issuance of a will serve letter.



During Shortage Stage 2, it is unlawful and a violation of VWD-012 for any water user to make, cause, use or permit the use of water in any manner contrary to the provisions set forth above. Water conservation education, public outreach, notices of violation, administrative fines, criminal penalties and other measures contained in VWD-012 will be used to enforce the provisions of both Conservation Stage 1 and Shortage Stage 2.

Although it is anticipated that implementation of Shortage Stage 2 is will achieve the 28% reduction mandate; adoption of future resolutions implementing Stages 3 and 4 and/or other conservation measures/water use prohibitions may still be required should Shortage Stage 2 prohibitions prove inadequate. Because the Final Regs. include a number of mandatory reporting requirements; the District will be better positioned to determine the effectiveness of Shortage Stage 2 within the next three to six months, and will return to the District Board with additional resolutions as needed.

Staff remains available to answer any questions.

Ordinance No. VWD-013

THIS ORDINANCE SHALL BE IN FULL FORCE AND EFFECT ON SEPTEMBER 17, 2015.

PASSED, APPROVED AND ADOPTED THIS 18<sup>th</sup> DAY OF AUGUST, 2015

*Alicia Garcia*  
CHAIRMAN OF THE BOARD OF DIRECTORS

ATTEST:

*Marcie Wolters, Assistant*  
BOARD SECRETARY/CITY CLERK

8-19-15  
DATE

APPROVED AS TO FORM:

  
CITY ATTORNEY

I, CAROLEE BATES, Board Secretary to the Victorville Water District of the City of Victorville and ex-officio Clerk to the City Council of said City, DO HEREBY CERTIFY that the foregoing is a true and correct copy of Ordinance No. VWD-013 which was introduced at a meeting held on July 21, 2015 and duly adopted at a meeting held on the 18<sup>th</sup> day of August 2015 by the following roll call vote, to wit:

AYES: Board Members Garcia, Cox, Kennedy, McEachron and Negrete

NOES: None

ABSENT: None

ABSTAIN: None

*Marcie Wolters, Assistant*  
BOARD SECRETARY/CITY CLERK



# Victorville Water District Water-wise Plant Coverage List

Water-wise Plants means plants that perform well in the District's service area and have been selected according to their ability to withstand the extreme hot/cold desert climate and fluctuating temperatures; adaptability to drought conditions; and ability to survive once established with a limited amount of supplemental water.

Many factors determine whether a Water-wise Plant will adapt or perform well, and even though a plant appears on the WWP List, there is no assurance it will adapt or thrive. Therefore, from time to time, the General Manager or his/her designee will amend the WWP List as necessary to add or remove plants.

The Water-wise plant list is a tool for use whether designing a new landscape or converting from traditional turf to a desert wise water efficient landscape. The plant canopy coverage is derived mathematically by multiplying the mature diameter of the plant by a formula to provide the square footage number. Determining the mature width of plants can be tricky. It may take many years or even decades for a plant to reach its ultimate width.

**Check out our Plant data base** for additional resources on selecting Desert-friendly Plants for Victorville Landscapes by visiting [www.victorvilleca.gov/waterconservation/](http://www.victorvilleca.gov/waterconservation/)

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Variety</u>	<u>Cultivar Name</u>	<u>Other Plant Names</u>	<u>Height (feet)</u>	<u>Width (feet)</u>	<u>Plant Coverage ( Sq. Ft)</u>
<b><u>Plant Type: Tree</u></b>								
Mulga Acacia	<i>Acacia</i>	<i>aneura</i>				20	20	<b>314</b>
Guijillo	<i>Acacia</i>	<i>berlandieri</i>				15	12	<b>113</b>
White Thorn Acacia	<i>Acacia</i>	<i>constricta</i>				10	15	<b>177</b>
Leatherleaf Acacia	<i>Acacia</i>	<i>craspedocarpa</i>				10	8	<b>50</b>
Sweet Acacia	<i>Acacia</i>	<i>farnesiana</i>			( <i>Acacia smallii</i> , <i>A. minuta</i> )	25	20	<b>314</b>
Cat-claw Acacia	<i>Acacia</i>	<i>greggii</i>				15	12	<b>113</b>
Weeping Acacia	<i>Acacia</i>	<i>pendula</i>				40	25	<b>368</b>
Blackbrush Acacia	<i>Acacia</i>	<i>rigidula</i>				12	15	<b>177</b>
Willow Acacia	<i>Acacia</i>	<i>salicina</i>				30	20	<b>314</b>
Blue Leaf Wattle	<i>Acacia</i>	<i>saligna</i>				20	20	<b>314</b>
Twisted Acacia	<i>Acacia</i>	<i>schaffneri</i>				20	25	<b>368</b>
Shoestring Acacia	<i>Acacia</i>	<i>stenophylla</i>				30	20	<b>314</b>
Palo Blanco	<i>Acacia</i>	<i>willardiana</i>				20	10	<b>79</b>
Silk Tree	<i>Albizia</i>	<i>julibrissin</i>				40	40	<b>1,257</b>
Hong Kong Orchid Tree	<i>Bauhinia</i>	<i>blakeana</i>				20	20	<b>314</b>
White Orchid Tree	<i>Bauhinia</i>	<i>lunarioides</i>				8	6	<b>28</b>
Purple Orchid Tree	<i>Bauhinia</i>	<i>variegata</i>				25	30	<b>707</b>
Bismarck Palm	<i>Bismarckia</i>	<i>nobilis</i>				30	10	<b>314</b>
Bottle Tree	<i>Brachychiton</i>	<i>populneus</i>				50	20	<b>314</b>

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Variety</u>	<u>Cultivar Name</u>	<u>Other Plant Names</u>	<u>Height (feet)</u>	<u>Width (feet)</u>	<u>Plant Coverage ( Sq. Ft)</u>
Mexican Blue Palm	<i>Brahea</i>	<i>armata</i>				15	10	79
Pindo Palm	<i>Butia</i>	<i>capitata</i>				20	20	314
Cascalote	<i>Caesalpinia</i>	<i>cacalaco</i>				15	15	177
Weeping Bottle Brush	<i>Callistemon</i>	<i>viminialis</i>				30	15	177
Blue Atlas Cedar	<i>Cedrus</i>	<i>atlantica</i>		'Glauca'		60	30	707
Cedar	<i>Cedrus</i>	<i>deodora</i>				80	40	1,257
Canyon Hackberry	<i>Celtis</i>	<i>reticulata</i>				25	25	368
Chinese Hackberry	<i>Celtis</i>	<i>sinensis</i>				40	40	1,257
Carob Tree	<i>Ceratonia</i>	<i>siliqua</i>				40	40	1,257
Western Redbud	<i>Cercis</i>	<i>occidentalis</i>				15	15	177
Mediterranean Fan Palm	<i>Chamaerops</i>	<i>humilis</i>				10	8	50
Desert Willow	<i>Chilopsis</i>	<i>linearis</i>				25	20	314
Chitalpa	<i>Chitalpa</i>	<i>x tashkentensis</i>				25	30	707
Silk floss Tree, Kapok	<i>Chorisia</i>	<i>speciosa</i>				40	30	707
Smoke Tree	<i>Cotinus</i>	<i>coggygria</i>				15	15	177
Arizona Cypress	<i>Cupressus</i>	<i>arizonica</i>				40	20	314
Italian Cypress	<i>Cupressus</i>	<i>sempervirens</i>				60	8	50
Indian Rosewood	<i>Dalbergia</i>	<i>sisso</i>				40	30	707
Texas Ebony	<i>Ebenopsis</i>	<i>ebano</i>			( <i>Pithecellobium flexicaule</i> )	20	20	314
Loquat	<i>Eriobotrya</i>	<i>japonica</i>				15	15	177
Argyle Apple, Silver Dollar Gum	<i>Eucalyptus</i>	<i>cinerea</i>				25	25	368
Coolibah	<i>Eucalyptus</i>	<i>microtheca</i>				35	25	368
Ghost Gum, Blue Ghost Eucalyptus	<i>Eucalyptus</i>	<i>papuana</i>				30	30	707
Silver Dollar Gum	<i>Eucalyptus</i>	<i>polyanthemos</i>				35	25	368
Swamp Mallee	<i>Eucalyptus</i>	<i>spathulata</i>				25	30	707
Kidneywood	<i>Eysenhardtia</i>	<i>orthocarpa</i>				15	10	79
Fig Tree	<i>Ficus</i>	<i>carica</i>				20	20	314
Desert Olive	<i>Forestiera</i>	<i>neomexicana</i>				12	8	50
Littleleaf Ash	<i>Fraxinus</i>	<i>greggii</i>				10	8	50
Raywood Ash	<i>Fraxinus</i>	<i>oxycarpa</i>		'Raywood'		30	25	368
Majestic Beauty Ash	<i>Fraxinus</i>	<i>uhdei</i>		Majestic Beauty'		60	50	1,963
Arizona Ash	<i>Fraxinus</i>	<i>velutina</i>				25	30	707
Modesto Ash	<i>Fraxinus</i>	<i>velutina</i>		'Modesto'		50	40	1,257
Australian Willow	<i>Geijera</i>	<i>parviflora</i>				25	20	314

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Variety</u>	<u>Cultivar Name</u>	<u>Other Plant Names</u>	<u>Height (feet)</u>	<u>Width (feet)</u>	<u>Plant Coverage ( Sq. Ft)</u>
Maidenhair Tree	<i>Ginkgo</i>	<i>biloba</i>				50	40	1,257
Honey Locust	<i>Gleditsia</i>	<i>triacanthos inermis</i>				50	35	962
Mexican Ebony	<i>Havardia</i>	<i>mexicana</i>			( <i>Pithecellobium mexicanum</i> )	30	30	707
Jacaranda	<i>Jacaranda</i>	<i>mimosifolia</i>			( <i>Jacaranda acutifolia</i> )	40	30	707
Goldenrain Tree	<i>Koereuteria</i>	<i>paniculata</i>				35	35	962
Crape Myrtle	<i>Lagerstroemia</i>	<i>indica</i>				25	20	314
Sweet Gum, Liquid Amber Tree	<i>Liquidambar</i>	<i>styraciflua</i>				60	25	368
Feather Tree	<i>Lysiloma</i>	<i>watsonii</i>	var. <i>thornberi</i>		( <i>Lysiloma microphylla</i> var. <i>thornberi</i> )	20	15	177
Crabapple	<i>Malus</i>			x 'Prairifire'		20	20	314
Cajeput Tree	<i>Melaleuca</i>	<i>quinquenervia</i>				20	15	177
Fruitless Olive	<i>Olea</i>	<i>europaea</i>				25	30	707
Ironwood	<i>Olneya</i>	<i>tesota</i>				25	30	707
Blue Palo Verde	<i>Parkinsonia</i>	<i>florida</i>			( <i>Cercidium floridum</i> )	30	30	707
Hybrid Palo Verde	<i>Parkinsonia</i>			'Desert Museum'	( <i>Cercidium hybrid</i> )	25	25	368
Foothills Palo Verde	<i>Parkinsonia</i>	<i>microphylla</i>			( <i>Cercidium microphyllum</i> )	15	15	177
Palo Brea	<i>Parkinsonia</i>	<i>praecox</i>			( <i>Cercidium praecox</i> )	25	25	368
Canary Island Date Palm	<i>Phoenix</i>	<i>canariensis</i>				40	30	7077
Date Palm	<i>Phoenix</i>	<i>dactylifera</i>				60	25	368
Piñon Pine	<i>Pinus</i>	<i>edulis</i>				20	15	177
Afghan Pine, Mondell Pine	<i>Pinus</i>	<i>eldarica</i>			( <i>Pinus brutia eldarica</i> )	50	25	368
Aleppo Pine	<i>Pinus</i>	<i>halepensis</i>				50	25	368
Singleleaf Piñon Pine	<i>Pinus</i>	<i>monophylla</i>				20	15	177
Stone Pine	<i>Pinus</i>	<i>pinea</i>				60	40	1,257
Chir Pine	<i>Pinus</i>	<i>roxburghii</i>				80	40	1,257
Chinese Pistache	<i>Pistacia</i>	<i>chinensis</i>				40	35	962
Mastic Tree	<i>Pistacia</i>	<i>lentiscus</i>				15	20	314
Willow Pittosporum	<i>Pittosporum</i>	<i>phillyraeoides</i>				25	15	177
Sycamore	<i>Platanus</i>	<i>racemosa</i>				80	50	1,963
Yew Pine	<i>Podocarpus</i>	<i>macrophyllus</i>				20	10	79
Fremont Cottonwood, Poplar	<i>Populus</i>	<i>fremontii</i>				60	30	707
South American Hybrid Mesquite	<i>Prosopis</i>	<i>hybrid</i>				30	30	707
Texas Honey Mesquite	<i>Prosopis</i>	<i>glandulosa</i>	var. <i>glandulosa</i>			30	30	707
Screwbean Mesquite	<i>Prosopis</i>	<i>pubescens</i>				15	30	314
Velvet Mesquite	<i>Prosopis</i>	<i>velutina</i>			( <i>Prosopis juliflora</i> )	30	30	707

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Variety</u>	<u>Cultivar Name</u>	<u>Other Plant Names</u>	<u>Height (feet)</u>	<u>Width (feet)</u>	<u>Plant Coverage ( Sq. Ft)</u>
Purple Leaf Plum	<i>Prunus</i>	<i>cerasifera</i>		'Atropurpurea'		20	15	177
Desert Smoke Tree	<i>Psoralethamnus</i>	<i>spinus</i>				15	15	177
Pomegranate	<i>Punica</i>	<i>granatum</i>				12	12	113
Bradford Pear	<i>Pyrus</i>	<i>calleryana</i>		'Bradford'		50	35	962
California Coastal Live Oak	<i>Quercus</i>	<i>agrifolia</i>				40	50	1,963
Escarpment Live Oak	<i>Quercus</i>	<i>fusiformis</i>				50	50	1,963
Holly Oak	<i>Quercus</i>	<i>ilex</i>				50	50	1,963
California Black Oak	<i>Quercus</i>	<i>kelloggii</i>				40	40	1,257
Valley Oak	<i>Quercus</i>	<i>lobata</i>				70	80	5,027
Chinquapin Oak	<i>Quercus</i>	<i>muehlenbergii</i>				50	60	2,827
Cork Oak	<i>Quercus</i>	<i>suber</i>				40	40	1,257
Live Oak	<i>Quercus</i>	<i>virginiana</i>		'Heritage'		60	60	2,827
Slender Lady Palm	<i>Rhapis</i>	<i>excelsa</i>				8	10	79
African Sumac	<i>Rhus</i>	<i>lancea</i>				25	40	1,257
Common Locust	<i>Robinia</i>	<i>x ambigua</i>				40	30	707
Black Locust	<i>Robinia</i>	<i>pseudoacacia</i>				75	60	2,827
Mountain Laurel	<i>Sophora</i>	<i>secundiflora</i>				15	15	177
Silver Peso Mountain Laurel	<i>Sophora</i>	<i>secundiflora</i>		'Silver Peso'		15	15	177
Queen Palm	<i>Syagrus</i>	<i>romanzoffianum</i>			( <i>Arecastrum romanzoffianum</i> )	40	20	314
Tipu Tree	<i>Tipuana</i>	<i>tipu</i>				30	40	1,257
Windmill Palm	<i>Trachycarpus</i>	<i>fortunei</i>				15	8	50
Evergreen Elm	<i>Ulmus</i>	<i>parvifolia</i>				35	35	962
Lacebark Elm, Siberian Elm	<i>Ulmus</i>	<i>pumila</i>				50	40	1,257
Chaste Tree	<i>Vitex</i>	<i>agnus-castus</i>				20	25	368
California Fan Palm	<i>Washingtonia</i>	<i>filifera</i>				40	15	177
Mexican Fan Palm	<i>Washingtonia</i>	<i>robusta</i>				50	10	79
<b><u>Plant Type: Shrub</u></b>								
Glossy Abelia	<i>Abelia</i>	<i>x grandiflora</i>				8	5	20
Desert Abutilon, Indian Mallow	<i>Abutilon</i>	<i>palmerii</i>				4	3	20
Pineapple Guava	<i>Acca</i>	<i>sellowiana</i>			( <i>Feijoa sellowiana</i> )	12	10	79
Blue Hibiscus	<i>Alyogyne</i>	<i>huegelii</i>				5	4	13
Triangle Leaf Bursage	<i>Ambrosia</i>	<i>deltoidea</i>				2	2	3
Burrobush, White Bursage	<i>Ambrosia</i>	<i>dumosa</i>				3	3	7
Flame Honeysuckle	<i>Anisacanthus</i>	<i>quadrifidus var. wrightii</i>				3	5	20

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Variety</u>	<u>Cultivar Name</u>	<u>Other Plant Names</u>	<u>Height (feet)</u>	<u>Width (feet)</u>	<u>Plant Coverage ( Sq. Ft)</u>
Howard McMinn Manzanita	<i>Arctostaphylos</i>	<i>densiflorus</i>		'Howard McMinn'		6	8	50
Powis Castle Wormwood	<i>Artemisia</i>			'Powis Castle'		3	6	28
Silver Sage	<i>Artemisia</i>	<i>filifolia</i>				5	5	20
Prairie Sagewort, Fringed Sage	<i>Artemisia</i>	<i>frigida</i>				2	2	3
Silver King Artemisia	<i>Artemisia</i>	<i>albula</i>		'Silver King'		3	3	7
Bigleaf Sage	<i>Artemisia</i>	<i>tridentata</i>				6	5	20
Foxtail Fern	<i>Asparagus</i>	<i>densiflorus</i>		'Myers'		2	3	7
Four-Wing Saltbush	<i>Atriplex</i>	<i>canescens</i>				5	8	50
Centennial Broom, Coyote Bush	<i>Baccharis</i>			x 'Centennial'		8	6	28
Crimson Pygmy Barberry	<i>Berberis</i>	<i>thunbergii</i>		'Crimson Pygmy'	( <i>Berberis 'Atropurpurea Nana'</i> )	2	3	7
Butterfly Bush	<i>Buddleja</i>	<i>dauidii</i>			( <i>Buddleia dauidii</i> )	6	8	50
Wooly Butterfly Bush	<i>Buddleja</i>	<i>marrubifolia</i>				5	5	20
Japanese Boxwood	<i>Buxus</i>	<i>microphylla</i>	var. <i>japonica</i>			6	6	28
Yellow Bird of Paradise	<i>Caesalpinia</i>	<i>gilliesii</i>				6	6	28
Mexican Bird of Paradise	<i>Caesalpinia</i>	<i>mexicana</i>				10	10	79
Red Bird of Paradise	<i>Caesalpinia</i>	<i>pulcherrima</i>				6	6	28
Baja Fairy Duster	<i>Calliandra</i>	<i>californica</i>			( <i>Calliandra peninsularis</i> )	6	6	28
Pink Fairy Duster	<i>Calliandra</i>	<i>eriophylla</i>				3	3	7
Pink Powder Puff	<i>Calliandra</i>	<i>haematocephala</i>				10	10	79
Weeping Bottle Brush	<i>Callistemon</i>	<i>viminalis</i>		Little John'		3	3	7
Natal Plum	<i>Carissa</i>	<i>macrocarpa</i>			( <i>Carissa grandiflora</i> )	8	8	50
Desert Hackberry	<i>Celtis</i>	<i>pallida</i>				8	10	79
Curl-leaf Mountain Mahogany	<i>Cercocarpus</i>	<i>ledifolius</i>				15	10	79
Mountain Mahogany	<i>Cercocarpus</i>	<i>montanus</i>				5	5	20
Rabbitbrush	<i>Chrysothamnus</i>	<i>nauseosus</i>				4	4	13
Orchid Rock Rose	<i>Cistus</i>	<i>x purpureus</i>				4	4	13
Bladderpod	<i>Cleome</i>	<i>isomeris</i>			( <i>Isomeris arborea</i> )	4	6	28
Texas Olive	<i>Cordia</i>	<i>boissieri</i>				10	10	79
Little Leaf Cordia	<i>Cordia</i>	<i>parvifolia</i>				6	6	28
False Heather, Mexican Heather	<i>Cuphea</i>	<i>hyssopifolia</i>				2	2	3
Black Dalea	<i>Dalea</i>	<i>frutescens</i>				3	4	13
Pink Indigo Bush	<i>Dalea</i>	<i>pulchra</i>				5	5	20

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Variety</u>	<u>Cultivar Name</u>	<u>Other Plant Names</u>	<u>Height (feet)</u>	<u>Width (feet)</u>	<u>Plant Coverage ( Sq. Ft)</u>
Hopseed Bush	<i>Dodonaea</i>	<i>viscosa</i>				10	10	79
Brittlebush	<i>Encelia</i>	<i>farinosa</i>				3	4	13
Mormon Tea	<i>Ephedra</i>	<i>viridis</i>				3	3	7
Hummingbird Trumpet	<i>Epilobium</i>	<i>canum</i>			( <i>Zauschneria californica</i> )	2	4	13
Red Eremophila	<i>Eremophila</i>	<i>maculata</i>	var. <i>brevifolia</i>			4	4	13
Turpentine Bush	<i>Ericameria</i>	<i>laricifolia</i>				2	3	7
California Buckwheat	<i>Eriogonum</i>	<i>fasciculatum</i>	var. <i>polifolium</i>			1	2	3
Apache Plume	<i>Fallugia</i>	<i>paradoxa</i>				6	4	13
Guayacan	<i>Guaiaacum</i>	<i>coulteri</i>				5	5	20
Scarlet Bush, Fire Bush	<i>Hamelia</i>	<i>patens</i>				5	5	20
Toyon	<i>Heteromeles</i>	<i>arbutifolia</i>				15	15	177
Hibiscus	<i>Hibiscus</i>	<i>rosa-sinensis</i>				10	8	50
Desert Lavender	<i>Hyptis</i>	<i>emoryi</i>				8	8	50
Yaupon Holly	<i>Ilex</i>	<i>vomitorea</i>				15	10	79
Juniper	<i>Juniperus</i>	<i>chinensis</i>		'Torulosa'	( <i>Juniperus chinensis</i> 'Kaizuka')	15	10	79
Shrimp Plant	<i>Justicia</i>	<i>brandegeana</i>			( <i>Beloperone guttata</i> )	3	3	7
Chuparosa	<i>Justicia</i>	<i>californica</i>				4	6	28
Mexican Honeysuckle	<i>Justicia</i>	<i>spicigera</i>				4	4	13
Winterfat	<i>Krascheninnikovia</i>	<i>lanata</i>			( <i>Ceratoides lanata</i> )	3	3	7
Creosote Bush	<i>Larrea</i>	<i>tridentata</i>				6	10	79
Violet Silverleaf	<i>Leucophyllum</i>	<i>candidum</i>		'Thundercloud'		3	3	7
Texas Ranger	<i>Leucophyllum</i>	<i>frutescens</i>				8	8	50
Texas Ranger	<i>Leucophyllum</i>	<i>frutescens</i>		'Compacta'		3	4	13
Chihuahuan Sage	<i>Leucophyllum</i>	<i>laevigatum</i>				4	4	13
Cinnamon Sage	<i>Leucophyllum</i>	<i>langmaniae</i>				5	5	20
Wolfberry	<i>Lycium</i>	<i>fremontii</i>				10	10	79
Oregon Grape	<i>Mahonia</i>	<i>aquifolium</i>				6	5	20
Mangle Dulce	<i>Maytenus</i>	<i>phyllanthoides</i>				10	10	79
True Myrtle	<i>Myrtus</i>	<i>communis</i>				10	10	79
Heavenly Bamboo	<i>Nandina</i>	<i>domestica</i>				6	4	13
Oleander	<i>Nerium</i>	<i>oleander</i>				10	10	79
Little Ollie Olive	<i>Olea</i>	<i>europaea</i>		'Little Ollie'		6	6	28

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Redtip Photinia	<i>Photinia</i>	<i>x fraseri</i>				10	5	20
Wheeler's Dwarf	<i>Pittosporum</i>	<i>tobira</i>		'Wheeler's Dwarf'		2	3	7
Golden Arborvitae	<i>Platyclusus</i>	<i>orientalis</i>		'Aureus'		18	10	79
White Desert Plumbago	<i>Plumbago</i>	<i>scandens</i>				3	4	13
Lavender Spice	<i>Poliomintha</i>	<i>maderensis</i>			( <i>Poliomentha longiflora</i> )	3	3	7
Western Sandcherry	<i>Prunus</i>	<i>pumila</i>	var. <i>besseyi</i>			6	6	28
Dwarf Pomegranate	<i>Punica</i>	<i>granatum</i>		'Nana'		3	3	7
Mexican Cliffrose	<i>Purshia</i>	<i>mexicana</i>			( <i>Cowania mexicana</i> )	6	6	28
Pyracantha	<i>Pyracantha</i>	<i>crenatoserrata</i>			( <i>Pyracantha fortuneata</i> )	10	10	79
Formosa Pyracantha	<i>Pyracantha</i>	<i>koidzumii</i>				10	6	28
Desert Scrub Oak	<i>Quercus</i>	<i>turbinella</i>				4	6	28
Indian Hawthorn	<i>Rhaphiolepis</i>	<i>indica</i>				8	6	28
Flame-leaf Sumac	<i>Rhus</i>	<i>lanceolata</i>				20	20	314
Sugar Bush	<i>Rhus</i>	<i>ovata</i>				10	10	79
Squaw Bush	<i>Rhus</i>	<i>trilobata</i>				12	12	113
Evergreen Sumac	<i>Rhus</i>	<i>virens</i>				9	9	64
Matilija Poppy	<i>Romneya</i>	<i>coulteri</i>				6	6	28
Shrub Rose	<i>Rosa</i>	<i>species</i>				6	6	28
Rosemary	<i>Rosmarinus</i>	<i>officinalis</i>				3	4	13
Ruellia	<i>Ruellia</i>	<i>brittoniana</i>				4	4	13
Ruellia	<i>Ruellia</i>	<i>peninsularis</i>				2	4	13
Chaparral Sage	<i>Salvia</i>	<i>clevelandii</i>				3	5	20
Mojave Desert Sage	<i>Salvia</i>	<i>dorrii</i>	var. <i>dorrii</i>			2	2	3
Autumn Sage	<i>Salvia</i>	<i>greggii</i>				4	3	7
Mexican Bush Sage	<i>Salvia</i>	<i>leucantha</i>				3	4	13
Lavender Cotton	<i>Santolina</i>	<i>chamaecyparis</i>				2	4	13
Green Santolina	<i>Santolina</i>	<i>virens</i>				5	6	28
Feathery Senna	<i>Senna</i>	<i>artemisioides</i>	var. <i>filifolia</i>		( <i>Cassia artemisioides</i> )	6	6	28
Shrubby Senna	<i>Senna</i>	<i>wislizenii</i>			( <i>Cassia wislizenii</i> )	8	8	50
Jojoba	<i>Simmondsia</i>	<i>chinensis</i>				8	8	50
Tecoma Hybrid	<i>Tecoma</i>			'Orange Bells'		10	8	50
Yellow Bells	<i>Tecoma</i>	<i>stans</i>				10	8	50

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Cape Honeysuckle	<i>Tecomaria</i>	<i>capensis</i>	<i>var. angustata</i>			10	10	79
Silver Germander, Bush Germander	<i>Teucrium</i>	<i>fruticans</i>			( <i>Teucrium chamaedrys</i> )	8	8	50
Lucky Nut	<i>Thevetia</i>	<i>peruviana</i>				10	15	177
Mexican Buckeye	<i>Ungnadia</i>	<i>speciosa</i>				10	8	50
Goldeneye	<i>Viguiera</i>	<i>deltoidea</i>				3	3	7
Skeleton Leaf Goldeneye	<i>Viguiera</i>	<i>stenoloba</i>				2	2	3
Arizona Rosewood	<i>Vauquelinia</i>	<i>californica</i>				10	15	177
Skeleton Leaf Goldeneye	<i>Viguiera</i>	<i>stenoloba</i>				2	2	3
Arabian Lilac	<i>Vitex</i>	<i>trifolia</i>				15	15	177
Xylosma	<i>Xylosma</i>	<i>congestum</i>				8	10	79
Gray Thorn	<i>Zizyphus</i>	<i>obtusifolia</i>				6	6	28
<b><u>Plant Type: Groundcover</u></b>								
Trailing Acacia	<i>Acacia</i>	<i>redolens</i>		'Prostrata', 'Desert Carpet'		2	10	79
Asparagus Fern	<i>Asparagus</i>	<i>densiflorus</i>		'Sprengeri'		3	3	7
Calylophus, Sundrops	<i>Calylophus</i>	<i>hartweggii</i>	<i>var. fendleri</i>			1	2	3
Snow-in-Summer	<i>Cerastium</i>	<i>tomentosum</i>				1	1	1
Damianta	<i>Chrysactinia</i>	<i>mexicana</i>				2	2	3
Bush Morning Glory	<i>Convolvulus</i>	<i>cneorum</i>				2	3	7
Ground Morning Glory	<i>Convolvulus</i>	<i>mauritanicus</i>				1	2	3
Creeping Cotoneaster	<i>Cotoneaster</i>	<i>adpressus</i>				2	6	28
Rock Cotoneaster	<i>Cotoneaster</i>	<i>horizontalis</i>				3	15	177
Sierra Gold Dalea	<i>Dalea</i>	<i>capitata</i>				1	3	7
Prostrate Indigo Bush	<i>Dalea</i>	<i>greggii</i>				1	15	177
Treasure Flower, Gazania	<i>Gazania</i>	<i>linearis</i>				1	2	3
Trailing Gazania	<i>Gazania</i>	<i>rigens</i>	<i>leucolaena</i>			1	2	3
Goodding Verbena	<i>Glandularia</i>	<i>gooddingii</i>			( <i>Verbena gooddingii</i> )	1	2	3
Moss Verbena	<i>Glandularia</i>	<i>pulchella</i>			( <i>Verbena pulchella</i> )	1	3	7
Sandpaper Verbena	<i>Glandularia</i>	<i>rigida</i>				1	3	7
Blue Chip Juniper	<i>Juniperus</i>	<i>horizontalis</i>		'Blue Chip'		1	6	28
Shore Juniper	<i>Juniperus</i>	<i>rigida</i>	<i>conferta</i>			1	6	28
Trailing Lantana	<i>Lantana</i>	<i>montevidensis</i>				1	3	7
New Gold Lantana	<i>Lantana</i>			'New Gold'		2	3	7
Copper Ice Plant	<i>Malephorea</i>	<i>crocea</i>				1	6	28



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Prostrate Myoporum	<i>Myoporum</i>	<i>parvifolium</i>				1	9	64
Mexican Evening Primrose	<i>Oenothera</i>	<i>berlandieri</i>			( <i>Oenothera speciosa</i> )	1	3	13
Tufted Evening Primrose	<i>Oenothera</i>	<i>caespitosa</i>				1	2	7
Saltillo Primrose	<i>Oenothera</i>	<i>stubbei</i>				1	3	7
Pyracantha, Firethorn	<i>Pyracantha</i>	<i>koidzumii</i>		'Santa Cruz'	( <i>'Santa Cruz Prostrata'</i> )	4	4	13
Prostrate Rosemary	<i>Rosmarinus</i>	<i>officinalis</i>		'Prostratus'		2	8	50
Lamb's Ear	<i>Stachys</i>	<i>byzantina</i>				1	3	7
Scarlet Betony, Texas Betony	<i>Stachys</i>	<i>coccinea</i>				1	2	3
Creeping Germander	<i>Teucrium</i>	<i>chamaedrys</i>		'Prostratum'		1	3	7
Creeping Thyme	<i>Thymus</i>	<i>serpyllum</i>				1	3	7
Periwinkle	<i>Vinca</i>	<i>major</i>				1	6	28
Vinca, Dwarf Periwinkle	<i>Vinca</i>	<i>minor</i>				1	4	13
Wedelia	<i>Wedelia</i>	<i>texana</i>			( <i>Zexmenia hispida</i> )	3	3	7
Yellow Dot	<i>Wedelia</i>	<i>trilobata</i>				1	6	28
<b><u>Plant Type: Vine</u></b>								
Coral Vine, Queen's Wreath	<i>Antigonon</i>	<i>leptopus</i>				15	30	707
Bougainvillea	<i>Bougainvillea</i>	<i>species</i>				15	30	707
Trumpet Creeper Vine	<i>Campsis</i>	<i>radicans</i>				20	25	368
Grape Ivy, Arizona Grape Ivy	<i>Cissus</i>	<i>trifoliata</i>				40	40	1,257
Wintercreeper	<i>Euonymus</i>	<i>fortunei</i>				1	15	177
Creeping Fig	<i>Ficus</i>	<i>pumila</i>				30	30	707
Carolina Jessamine	<i>Gelsemium</i>	<i>sempervirens</i>				20	20	314
Lilac Vine	<i>Hardenbergia</i>	<i>violacea</i>				15	10	79
Primrose Jasmine	<i>Jasminum</i>	<i>mesnyi</i>				10	10	79
Hall's Honeysuckle	<i>Lonicera</i>	<i>japonica</i>		'Halliana'		25	25	368
Cat's Claw	<i>Macfadyena</i>	<i>unguis-cati</i>				30	30	707
Yellow Orchid Vine	<i>Mascagnia</i>	<i>macroptera</i>				15	15	177
Merremia	<i>Merremia</i>	<i>aurea</i>				10	10	79
Virginia Creeper	<i>Parthenocissus</i>	<i>quinquefolia</i>				50	50	1,963
Boston Ivy	<i>Parthenocissus</i>	<i>tricuspidata</i>				50	50	1,963
Hacienda Creeper Vine	<i>Parthenocissus</i>	<i>tricuspidata</i>		'Hacienda Creeper'		25	25	368
Passion Flower Vine	<i>Passiflora</i>	<i>x alatocaerulea</i>				30	30	707
Baja Passion Flower vine	<i>Passiflora</i>	<i>foetida</i>	<i>longipedunculata</i>			10	10	79
Pink Trumpet Vine	<i>Podranea</i>	<i>ricasoliana</i>				20	20	314
Lady Bank's Rose	<i>Rosa</i>	<i>banksiae</i>				20	25	368

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Potato Vine	<i>Solanum</i>	<i>laxum</i>				30	10	79
Star Jasmine	<i>Trachelospermum</i>	<i>jasminoides</i>				25	30	707
Snail Vine	<i>Vigna</i>	<i>caracalla</i>			( <i>Phaseolus caracalla</i> )	30	30	707
Grape Vine	<i>Vitis</i>	<i>species</i>				20	20	314
Japanese Wisteria	<i>Wisteria</i>	<i>floribunda</i>				20	20	314
Chinese Wisteria	<i>Wisteria</i>	<i>sinensis</i>				20	20	314
<b><u>Plant Type: Grass-like</u></b>								
Sideoats Grama	<i>Bouteloua</i>	<i>curtipendula</i>				2	2	3
Blue Grama Grass	<i>Bouteloua</i>	<i>gracilis</i>				2	2	3
Feather Reed Grass	<i>Calamagrostis</i>	<i>acutiflora</i>		'Karl Forester'		4	2	3
Mexican Grass Tree	<i>Dasyllirion</i>	<i>longissimum</i>				5	5	20
Canyon Prince Wild Rye	<i>Elymus</i>	<i>condensatus</i>		'Canyon Prince'		1	1	1
Blue Fescue	<i>Festuca</i>	<i>glauca</i>				1	1	1
Blue Oat Grass	<i>Helictotrichon</i>	<i>sempervirens</i>				1	2	3
Japanese Blood Grass	<i>Imperata</i>	<i>cylindrica</i>		'Rubra'		2	1	1
Japanese Silver Grass	<i>Miscanthus</i>	<i>sinensis</i>				6	4	13
Pink Muhly	<i>Muhlenbergia</i>	<i>capillaris</i>				3	4	13
Bamboo Muhly	<i>Muhlenbergia</i>	<i>dumosa</i>				5	5	20
Bull Grass	<i>Muhlenbergia</i>	<i>emersleyi</i>				5	4	13
Autumn Glow Muhly	<i>Muhlenbergia</i>	<i>lindheimeri</i>		'Autumn Glow'		5	5	20
Deer Grass	<i>Muhlenbergia</i>	<i>rigens</i>				4	4	13
Mexican Feather Grass	<i>Nasella</i>	<i>tenuissima</i>			( <i>Stipa tenuissima</i> )	2	2	3
Devil's Shoestring	<i>Nolina</i>	<i>lindheimeriana</i>				3	3	7
Tree Beargrass	<i>Nolina</i>	<i>matapensis</i>				15	6	28
Beargrass	<i>Nolina</i>	<i>microcarpa</i>				6	8	50
Texas Beargrass	<i>Nolina</i>	<i>texana</i>				3	3	13
Switch Grass	<i>Panicum</i>	<i>virgatum</i>				5	5	20
Red Fountain Grass	<i>Pennisetum</i>	<i>setaceum</i>		'Rubrum'		5	4	13
<b><u>Plant Type: Cacti</u></b>								
Saguaro	<i>Carnegiea</i>	<i>gigantea</i>				50	6	50
Hildmann's Cereus	<i>Cereus</i>	<i>hildmannianus</i>			( <i>Cereus peruvianus</i> )	15	10	79
Buckhorn Cholla	<i>Cylindropuntia</i>	<i>acanthocarpa</i>			( <i>Opuntia acanthocarpa</i> )	4	5	20
Staghorn Cholla	<i>Cylindropuntia</i>	<i>versicolor</i>			( <i>Opuntia versicolor</i> )	10	8	50
Golden Barrel Cactus	<i>Echinocactus</i>	<i>grusonii</i>				1	3	7

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Strawberry Hedgehog	<i>Echinocereus</i>	<i>engelmannii</i>				1	2	3
Claret Cup	<i>Echinocereus</i>	<i>triglochidiatus</i>				1	3	7
Compass Barrel	<i>Ferocactus</i>	<i>cylindraceus</i>			( <i>Ferocactus acanthodes</i> )	3	2	3
Fishhook Barrel	<i>Ferocactus</i>	<i>wislizenii</i>				3	2	3
Senita	<i>Lophocereus</i>	<i>schottii</i>				10	10	79
Totem Pole	<i>Lophocereus</i>	<i>schottii</i>	<i>monstrosus</i>		( <i>Pachocereus schottii</i> )	10	10	79
Beavertail Cactus	<i>Opuntia</i>	<i>basilaris</i>				1	4	13
Teddy Bear Cholla	<i>Opuntia</i>	<i>bigelovii</i>				6	3	7
Engelmann's Prickly Pear	<i>Opuntia</i>	<i>engelmannii</i>				4	8	50
Texas Prickly Pear	<i>Opuntia</i>	<i>engelmannii</i>	<i>lindheimeri</i>			5	10	79
Indian Fig Prickly Pear	<i>Opuntia</i>	<i>ficus-indica</i>				12	15	177
Cow's Tongue Prickly Pear	<i>Opuntia</i>	<i>lindheimeri</i>	<i>var. linguiformis</i>			6	6	28
Bunny Ears	<i>Opuntia</i>	<i>microdasys</i>				3	5	20
Prickly Pear	<i>Opuntia</i>	<i>phaeacantha</i>				3	8	50
Giant Prickly Pear	<i>Opuntia</i>	<i>robusta</i>				10	10	79
Purple Prickly Pear	<i>Opuntia</i>	<i>santa-rita</i>			( <i>Opuntia violacea santa-rita</i> )	4	5	20
Mexican Fencepost	<i>Pachocereus</i>	<i>marginatus</i>			( <i>Stenocereus marginatus</i> )	10	6	28
Organ Pipe Cactus	<i>Stenocereus</i>	<i>thurberi</i>				10	10	79
Spruce Cones	<i>Tephrocactus</i>	<i>articulatus</i>	<i>inermis</i>			1	3	7
Argentine Hedgehog	<i>Trichocereus</i>	<i>huascha</i>				2	3	7
<b><u>Plant Type: Succulent</u></b>								
Century Plant, American Agave	<i>Agave</i>	<i>americana</i>				10	12	113
Blue Glow Agave	<i>Agave</i>			'Blue Glow'		2	3	7
Cow's Horn Agave	<i>Agave</i>	<i>bovicornuta</i>				4	5	20
Mescal Ceniza	<i>Agave</i>	<i>colorata</i>				3	4	13
Desert Agave	<i>Agave</i>	<i>deserti</i>				2	2	3
Smooth Agave	<i>Agave</i>	<i>desmettiana</i>				3	3	7
Threadleaf Agave	<i>Agave</i>	<i>filifera</i>				2	2	3
Twin-Flowered Agave	<i>Agave</i>	<i>geminiflora</i>				3	3	7
Harvard Agave	<i>Agave</i>	<i>havardiana</i>				3	3	7
Thorn-Crested Agave, Holly Agave	<i>Agave</i>	<i>lophantha</i>				3	5	20
Murphey's Agave	<i>Agave</i>	<i>murpheyi</i>				3	3	7

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Variety</u>	<u>Cultivar Name</u>	<u>Other Plant Names</u>	<u>Height (feet)</u>	<u>Width (feet)</u>	<u>Plant Coverage ( Sq. Ft)</u>
Artichoke Agave	<i>Agave</i>	<i>parryi</i>				3	3	7
Utah Agave	<i>Agave</i>	<i>utahensis</i>				1	2	3
Queen Victoria Agave	<i>Agave</i>	<i>victoria-reginae</i>				1	2	3
Octopus Agave	<i>Agave</i>	<i>vilmoriniana</i>				4	5	20
Weber's Agave	<i>Agave</i>	<i>weberi</i>				6	5	20
Tree Aloe	<i>Aloe</i>	<i>arborescens</i>				10	6	28
Blue Elf Aloe	<i>Aloe</i>			'Blue Elf'		2	2	3
Ferox Agave	<i>Aloe</i>	<i>ferox</i>				12	5	20
African Aloe	<i>Aloe</i>	<i>saponaria</i>				1	10	50
Variegated Aloe	<i>Aloe</i>	<i>variegata</i>				1	1	1
Aloe Vera	<i>Aloe</i>	<i>vera</i>			( <i>Aloe barbadensis</i> )	2	3	7
Threadleaf Milkweed	<i>Asclepias</i>	<i>linearis</i>				3	3	7
Desert Milkweed	<i>Asclepias</i>	<i>subulata</i>				4	3	7
Pony Tail Palm	<i>Beaucarnea</i>	<i>recurvata</i>				15	10	79
Yellow Bulbine	<i>Bulbine</i>	<i>frutescens</i>				1	2	3
Japanese Sago Palm	<i>Cycas</i>	<i>revoluta</i>				5	5	20
Green Desert Spoon	<i>Dasyllirion</i>	<i>acrotriche</i>				6	5	20
Desert Spoon	<i>Dasyllirion</i>	<i>wheeleri</i>				6	5	20
Crown of Thorns	<i>Euphorbia</i>	<i>milli</i>				4	2	3
Gopher Plant	<i>Euphorbia</i>	<i>rigida</i>				2	4	13
Ocotillo	<i>Fouquieria</i>	<i>splendens</i>				20	15	177
Giant Hesperaloe	<i>Hesperaloe</i>	<i>funifera</i>				6	6	28
Red Yucca	<i>Hesperaloe</i>	<i>parviflora</i>				3	5	20
Our Lord's Candle	<i>Hesperoyucca</i>	<i>whipplei</i>				2	3	7
Madagascar Palm	<i>Pachypodium</i>	<i>lamerei</i>				15	4	13
Lady's Slipper	<i>Pedilanthus</i>	<i>macrocarpus</i>				3	2	3
Elephant's Food	<i>Portulacaria</i>	<i>afra</i>				3	4	13
Spanish Bayonet	<i>Yucca</i>	<i>aloifolia</i>				10	4	13
Banana Yucca	<i>Yucca</i>	<i>baccata</i>				3	5	20
Joshua Tree	<i>Yucca</i>	<i>brevifolia</i>				30	30	707
Soaptree Yucca	<i>Yucca</i>	<i>elata</i>				20	8	50
Adam's Needle	<i>Yucca</i>	<i>filamentosa</i>				3	4	13
Faxon Yucca	<i>Yucca</i>	<i>faxoniana</i>				15	10	79
Soapweed Yucca, Narrowleaf Yucca	<i>Yucca</i>	<i>glauca</i>				4	4	13
Spanish Dagger	<i>Yucca</i>	<i>gloriosa</i>				10	8	50

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Variety</u>	<u>Cultivar Name</u>	<u>Other Plant Names</u>	<u>Height (feet)</u>	<u>Width (feet)</u>	<u>Plant Coverage ( Sq. Ft)</u>
New Mexico Yucca	<i>Yucca</i>	<i>harrimaniae</i>				1	1	1
Pale Leaf Yucca	<i>Yucca</i>	<i>pallida</i>				2	3	7
Weeping Yucca	<i>Yucca</i>	<i>recurvifolia</i>				6	6	28
Blue Yucca	<i>Yucca</i>	<i>rigida</i>				12	5	20
Beaked Yucca, Thompson's Yucca	<i>Yucca</i>	<i>rostrata</i>			( <i>Yucca thompsoniana</i> )	12	10	79
Twisted Leaf Yucca	<i>Yucca</i>	<i>rupicola</i>				2	2	3
Mojave Yucca	<i>Yucca</i>	<i>schidigera</i>				4	3	7
<b><u>Plant Type: Perennial</u></b>								
Common Yarrow	<i>Achillea</i>	<i>millefolium</i>				3	2	3
Woolly Yarrow	<i>Achillea</i>	<i>tomentosa</i>				2	2	3
Lily of the Nile	<i>Agapanthus</i>	<i>praecox</i>	<i>orientalis</i>			2	2	3
Anise Hyssop	<i>Agastache</i>	<i>foeniculum</i>				3	3	7
Hummingbird Mint	<i>Agastache</i>	<i>rupestris</i>				3	2	3
Golden Columbine	<i>Aquilegia</i>	<i>chrysantha</i>				3	2	3
Marguerite	<i>Argyranthemum</i>	<i>frutescens</i>			( <i>Chrysanthemum frutescens</i> )	3	3	7
Desert Marigold	<i>Baileya</i>	<i>multiradiata</i>				1	1	1
Chocolate Flower	<i>Berlandiera</i>	<i>lyrata</i>				1	2	3
Dusty Miller	<i>Centaurea</i>	<i>cineraria</i>				2	2	3
Kaffir Lily	<i>Clivia</i>	<i>miniata</i>				2	2	3
Lanceleaf Coreopsis	<i>Coreopsis</i>	<i>lanceolata</i>				2	2	3
Sunray Coreopsis	<i>Coreopsis</i>	<i>verticillata</i>				1	2	3
Bat-faced Cuphea	<i>Cuphea</i>	<i>laevea</i>				2	3	7
Peacock Flower	<i>Dietes</i>	<i>bicolor</i>				2	2	3
Purple Coneflower	<i>Echinacea</i>	<i>purpurea</i>				4	2	3
Green Gold	<i>Euryops</i>	<i>pectinatus</i>		'Viridis'		4	3	7
Blanket Flower	<i>Gaillardia</i>	<i>aristata</i>			( <i>Gaillardia grandiflora</i> )	2	2	3
Gaura	<i>Gaura</i>	<i>lindheimeri</i>				1	2	3
Gazania	<i>Gazania</i>	<i>splendens</i>				1	1	1
Snakeweed	<i>Gutierrezia</i>	<i>sarothrae</i>				1	2	3
Baby's Breath	<i>Gypsophila</i>	<i>paniculata</i>				3	3	7
Maximilian Sunflower	<i>Helianthus</i>	<i>maximilianii</i>				10	2	3
Daylily	<i>Hemerocallis</i>	<i>hybrid</i>				2	3	7
Coral Bells	<i>Heuchera</i>	<i>sanguinea</i>				1	1	1
Bearded Iris	<i>Iris</i>	<i>germanica</i>				2	2	3

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Variety</u>	<u>Cultivar Name</u>	<u>Other Plant Names</u>	<u>Height (feet)</u>	<u>Width (feet)</u>	<u>Plant Coverage ( Sq. Ft)</u>
Red-Hot Poker	<i>Kniphofia</i>	<i>uvaria</i>				3	3	7
English Lavender	<i>Lavandula</i>	<i>angustifolia</i>		'Munstead'		3	3	7
French Lavender	<i>Lavandula</i>	<i>dentata</i>				3	3	7
Blue Lavandin	<i>Lavandula</i>	<i>x intermedia</i>		'Grosso'		2	3	7
Spanish Lavender	<i>Lavandula</i>	<i>stoechas</i>				4	3	7
Shasta Daisy	<i>Leucanthemum</i>	<i>x superbum</i>			( <i>Chrysanthemum maximum</i> )	3	2	3
Blackfoot Daisy	<i>Melampodium</i>	<i>leucanthum</i>				1	2	3
Missouri Evening Primrose	<i>Oenothera</i>	<i>macrocarpa</i>			( <i>Oenothera missouriensis</i> )	1	2	3
Oregano	<i>Origanum</i>	<i>laevigatum</i>				2	3	3
Oriental Poppy	<i>Papaver</i>	<i>orientale</i>				3	2	3
Rock Penstemon	<i>Penstemon</i>	<i>baccharifolius</i>				2	3	7
Firecracker Penstemon	<i>Penstemon</i>	<i>eatonii</i>				1	2	3
Parry's Penstemon	<i>Penstemon</i>	<i>parryi</i>				2	2	3
Pineleaf Penstemon	<i>Penstemon</i>	<i>pinnifolius</i>				1	2	3
Royal Beardtongue	<i>Penstemon</i>	<i>spectabilis</i>				1	1	1
Coral Penstemon	<i>Penstemon</i>	<i>superbus</i>				2	3	7
Star Flower	<i>Pentas</i>	<i>lanceolata</i>				3	3	7
Russian Sage	<i>Perovskia</i>	<i>atriplicifolia</i>				3	4	13
Jerusalem Sage	<i>Phlomis</i>	<i>fruticosa</i>				3	3	7
Paperflower	<i>Psilostrophe</i>	<i>cooperi</i>				1	3	7
Wooly Paperflower	<i>Psilostrophe</i>	<i>tagetina</i>				1	3	7
Mexican Hat	<i>Ratibida</i>	<i>columnifera</i>				2	2	3
Black-eyed Susan	<i>Rudbeckia</i>	<i>hirta</i>				3	3	7
Dwarf Ruellia, Desert Petunia	<i>Ruellia</i>	<i>brittoniana</i>		'Katie'		1	1	1
Mealy Cup Sage	<i>Salvia</i>	<i>farinacea</i>				2	2	3
Royal Purple Autumn Sage	<i>Salvia</i>	<i>muelleri</i>				2	2	3
Compact Indigo Spires Sage	<i>Salvia</i>			'Mystic Spires Blue'		3	3	7
Blue Queen Sage	<i>Salvia</i>		<i>x superba</i>			2	2	3
Desert Senna	<i>Senna</i>	<i>covesii</i>				3	3	7
Globe Mallow	<i>Sphaeralcea</i>	<i>ambigua</i>				3	3	7
Mountain Marigold	<i>Tagetes</i>	<i>lemmonii</i>				5	5	20
Licorice Marigold	<i>Tagetes</i>	<i>lucida</i>				4	4	13
Angelita Daisy	<i>Tetraneuris</i>	<i>acaulis</i>			( <i>Hymenoxys acaulis</i> )	1	1	1
Golden Dysodia	<i>Thymophylla</i>	<i>pentachaeta</i>			( <i>Dyssodia pentachaeta</i> )	1	1	1
Society Garlic	<i>Tulbaghia</i>	<i>violacea</i>				1	1	1

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Variety</u>	<u>Cultivar Name</u>	<u>Other Plant Names</u>	<u>Height (feet)</u>	<u>Width (feet)</u>	<u>Plant Coverage ( Sq. Ft)</u>
Goldeneye	<i>Viguiera</i>	<i>deltoidea</i>				2	2	3
Fairy Lily	<i>Zephyranthes</i>	<i>grandiflora</i>				1	1	1
Desert Zinnia	<i>Zinnia</i>	<i>acerosa</i>				1	1	1
Prairie Zinnia	<i>Zinnia</i>	<i>grandiflora</i>				1	1	1
<b><u>Plant Type: Annuals</u></b>		<b>(NO CANOPY COVERAGE)</b>						
Desert Sand Verbena	<i>Abronia</i>	<i>vilosa</i>						
Hollyhock	<i>Alcea</i>	<i>rosea</i>						
Snapdragon	<i>Antirrhinum</i>	<i>majus</i>						
Calendula	<i>Calendula</i>	<i>officinalis</i>						
Periwinkle, Vinca	<i>Catharanthus</i>	<i>roseus</i>			( <i>Vinca rosea</i> )			
Bachelor's Button	<i>Centaurea</i>	<i>cyanthus</i>						
Garden Chrysanthemum, Mum	<i>Chrysanthemum</i>	<i>x morifolium</i>						
Southwestern Cosmos	<i>Cosmos</i>	<i>bipinnatus</i>						
Dianthus, Sweet William	<i>Dianthus</i>	<i>species</i>						
California Poppy	<i>Eschscholzia</i>	<i>californica</i>						
Mexican Gold Poppy	<i>Eschscholzia</i>	<i>californica</i>	<i>mexicana</i>					
Blanket Flower	<i>Gaillardia</i>	<i>pulchella</i>						
Sunflower	<i>Helianthus</i>	<i>annuus</i>						
Impatiens	<i>Impatiens</i>	<i>species</i>						
Sweet Pea	<i>Lathyrus</i>	<i>odoratus</i>						
Tidy-Tips	<i>Layia</i>	<i>platyglossa</i>	<i>compestris</i>					
Red Flax	<i>Linum</i>	<i>grandiflorum</i>		'Rubrum'				
Blue Flax	<i>Linum</i>	<i>perenne</i>	<i>lewisii</i>					
Lobelia	<i>Lobelia</i>	<i>erinus</i>						
Sweet Alyssum	<i>Lobularia</i>	<i>maritima</i>						
Arroyo Lupine	<i>Lupinus</i>	<i>succulentus</i>						
Texas Bluebonnet	<i>Lupinus</i>	<i>texensis</i>						
Forget Me Not	<i>Myosotis</i>	<i>sylvatica</i>						
Owl's Clover	<i>Orthocarpus</i>	<i>purpurascens</i>			( <i>Castilleja exertia</i> )			
Flanders Field Poppy	<i>Papaver</i>	<i>rhoeas</i>						
Garden Geranium	<i>Pelargonium</i>	<i>x hortorum</i>						

<u>Common Name</u>	<u>Genus</u>	<u>Species</u>	<u>Variety</u>	<u>Cultivar Name</u>	<u>Other Plant Names</u>	<u>Height</u> (feet)	<u>Width</u> (feet)	<u>Plant Coverage</u> ( Sq. Ft)
Petunia	<i>Petunia</i>	<i>hybrid</i>						
Desert Bluebell	<i>Phacelia</i>	<i>campanularia</i>						
Scarlet Sage	<i>Salvia</i>	<i>coccinea</i>						
Catchfly	<i>Silene</i>	<i>armeria</i>						
Marigold	<i>Tagetes</i>	<i>erecta</i>						
Mexican Sunflower	<i>Tithonia</i>	<i>rotundifolia</i>						
Viola	<i>Viola</i>	<i>cornuta</i>						
Pansy	<i>Viola</i>	<i>x wittrockiana</i>						
Zinnia	<i>Zinnia</i>	<i>elegans</i>						





# B

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## Appendix B - 2020 DWR Review Checklist & DWR Tables

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Section 1
x	x	Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Section 1.6
x	x	Section 2.2	10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2
x	x	Section 2.6	10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.3
x	x	Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	Section 2.3
x		Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Section 2.3
	x	Section 2.6	10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	NA
x	x	Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Section 3.1
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.2
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 3.3.1
x	x	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 3.3.2
x	x	Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Section 3.3.1
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 3.4
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.1
x	x	Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 4.1.2
x	x	Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans and other policies or laws.	System Water Use	Section 4.1.4.1
x	x	Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Section 4.1.4.1
x	optional	Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Section 4.1.2
x	optional	Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.2
x	x	Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Section 4.3
x		Chapter 5	10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Section 5
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5.2
	x	Section 5.1	10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	NA
x		Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	NA
x		Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	NA
x		Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Baselines and Targets	Appendix E
x	x	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Section 7.1
x	x	Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, <i>including changes in supply due to climate change.</i>	System Supplies	Section 7.1
x	x	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	Section 6

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Section 6
x	x	Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Section 6.1.9
x	x	Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.1.2
x	x	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.1.2
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 6.1.2
x	x	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.1.2
x	x	Section 6.2.2.1	10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	NA
x	x	Section 6.2.2.4	10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.1.2
x	x	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 6.1.2
x	x	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.1.7
x	x	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.1.5
x	x	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.1.5
x	x	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.1.5
x	x	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.1.5
x	x	Section 6.2.5	10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.1.5
x	x	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.1.5
x	x	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.1.6
x	x	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	Section 6.1.5
x	x	Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	System Supplies	Section 6.1.8
x	x	Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	Section 6.2
x	x	Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 6.1.1 and Section 6.1.2
x	x	Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 6.1.1
x	x	Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.1
x	x	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	Section 7.2
x	x	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 7.1
x	x	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Section 7.1
x	x	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Section 7.1

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Section 7.1
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Section 8
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Section 8
x	x	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Section 8
x	x	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Section 8
x		Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Section 8
x		Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Section 8
x	x	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Section 8
x		Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Section 8
x		Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Section 8
x		Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Section 8
x	x	Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 8
x	x	Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Section 8

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
	x	Sections 9.1 and 9.3	10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	NA
x		Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Section 9
x		Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	Section 10
x	x	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	Section 2.3
x	x	Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	Section 10
x	x	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Plan Adoption, Submittal, and Implementation	Section 10.1
x	x	Section 10.2.2	10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Section 10.1
x	x	Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.2
x	x	Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.3
x	x	Section 10.4	10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.3
x	x	Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Section 10.3
x	x	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	NA
x	x	Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	Section 10.5

## 2-1R | Public Water Systems

STATUS:

NOTES:

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020
CA3610052	VICTORVILLE WATER DISTRICT	36,673	21,865
<b>Total:</b>		<b>36,673</b>	<b>21,865</b>

## 2-2 | Public Water Systems

STATUS:

NOTES:

Type of Plan	Member of RUWMP	Member of Regional Alliance	Name of RUWMP or Regional Alliance
Individual UWMP	No	No	Not Applicable



## 2-3 | Agency Identification

STATUS:

NOTES:

Type of Supplier	Year Type	First Day of Year		Unit Type
Retailer	Calendar Years	DD	MM	Acre Feet (AF)

**Conversion to Gallons:** 325851  
**Conversion to Gallons per Day:** 892.7425



### 3-1R | Current & Projected Population

STATUS:

NOTES:

Population Served	2020	2025	2030	2035	2040	2045
VWD's Service Area	134,273	154,831	172,220	183,018	192,113	200,486
<b>Total</b>	<b>134,273</b>	<b>154,831</b>	<b>172,220</b>	<b>183,018</b>	<b>192,113</b>	<b>200,486</b>

## 4-1R | Actual Demands for Water

STATUS:

NOTES: -

Use Type	Additional Description	Level of Treatment When Delivered	2020 Volume
Single Family		Drinking Water	12,208
Multi-Family		Drinking Water	1,848
Other	Commercial/Institutional	Drinking Water	5,487
Landscape		Drinking Water	1,097
Losses		Drinking Water	1,225
Sales/Transfers/Exchanges to Other Agencies		Drinking Water	865
<b>Total:</b>			<b>22,730</b>

## 4-2R | Projected Demands for Water

STATUS:

NOTES:

Use Type	Additional Description	Projected Water Use				
		2025	2030	2035	2040	2045
Single Family		13,744	15,061	15,673	16,262	16,946
Multi-Family		2,081	2,280	2,373	2,462	2,565
Commercial	Includes Institutional	6,177	6,770	7,044	7,309	7,617
Landscape		1,235	1,354	1,409	1,462	1,523
Losses		1,483	1,625	1,691	1,755	1,829
Sales/Transfers/Exchanges to Other Agencies		900	900	900	900	900
<b>Total:</b>		<b>25,620</b>	<b>27,990</b>	<b>29,090</b>	<b>30,150</b>	<b>31,380</b>

### 4-3R | Total Gross Water Use

STATUS:

NOTES:

	2020	2025	2030	2035	2040	2045
<b>Potable and Raw Water</b> From Table 4-1R and 4-2R	22,730	25,620	27,990	29,090	30,150	31,380
<b>Recycled Water Demand*</b> From Table 6-4R	722	885	979	1,075	1,149	1,319
<b>Total Water Use:</b>	<b>23,452</b>	<b>26,505</b>	<b>28,969</b>	<b>30,165</b>	<b>31,299</b>	<b>32,699</b>

## 4-4R | 12 Month Water Loss Audit Reporting

**STATUS:**

**NOTES:** The 2017 AWWA Water Audit was completed for 7/2017-6/2018.  
The 2020 Water Loss was estimated based on the difference between production and consumption for 2020.

Report Period Start Date		Volume of Water Loss
MM	YYYY	
1	2016	2,951
7	2017	1,847
1	2018	2,627
1	2019	1,013
1	2020	1,225 (Estimated)

## 4-5R | Inclusion in Water Use Projections

STATUS: Published

NOTES: -

<b>Are Future Water Savings Included in Projections?</b> Refer to Appendix K of UWMP Guidebook.	Yes
Section or page number where the citations utilized in the demand projects can it be found:	Section 4.1.4
<b>Are Lower Income Residential Demands Included in Projections?</b>	Yes



## 5-1R | Baselines & Targets Summary

STATUS:

NOTES: -

Baseline Period	Start Year	End Year	Average Baseline GPCD*	Confirmed 2020 Target *
10-15 Year	1996	2005	253	202
5 Year	2003	2007	252	

\*All values are in Gallons per Capita per Day (GPCD)

**5-2R | 2020 Compliance**

STATUS:

NOTES: -

Actual 2020 GPCD*	Optional Adjustments to 2020 GPCD					2020 GPCD* (Adjusted if applicable)	Supplier Achieved Targeted Reduction in 2020
	Extraordinary Events*	Economic Adjustment*	Weather Normalization*	Total Adjustments*	Adjusted 2020 GPCD*		
145	0	0	0	0	0	0	Yes

\*All values are in Gallons per Capita per Day (GPCD)

## 6-1R | Groundwater Volume Pumped

STATUS:

NOTES:

Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Mojave Basin	17,693	18,580	17,645	16,689	18,977
<b>Total:</b>		<b>17,693</b>	<b>18,580</b>	<b>17,645</b>	<b>16,689</b>	<b>18,977</b>

**6-2R | Wastewater Collected within Service Area in 2020**

STATUS:

NOTES: -

The supplier will complete the table.						
						Percentage of 2020 service area covered by wastewater collection system (optional):
						Percentage of 2020 service area population covered by wastewater collection system (optional):
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated	Wastewater Volume Collected from UWMP Service Area in 2020	Name of Wastewater Agency Receiving Collected Wastewater	Wastewater Treatment Plant Name	Wastewater Treatment Plant Located within UWMP Area	WWTP Operation Contracted to a Third Party
The City of Victorville	Metered	2,335	Victorville Water District	Industrial Wastewater Treatment Plant	Yes	Yes
The City of Victorville	Metered	7,297	Victor Valley Wastewater Reclamation Authority	Victor Valley Wastewater Reclamation Authority WWTP	Yes	No
<b>Total:</b>		<b>9,632</b>				

6-3R | Wastewater Treatment & Discharge Within Service Area in 2020

STATUS:

NOTES: -

The supplier will complete the table.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number	Method of Disposal	Plant Treats Wastewater Generated Outside the Service Area	Treatment Level	2020 Volumes				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Industrial Wastewater Treatment Plant	VVWRA	Percolation Ponds		Percolation ponds	No	Tertiary	2,335	1,613	722	-	-
Victorville Valley Wastewater Reclamation Authority WWTP	VVWRA	Mojave River and Percolation Ponds		River or creek outfall	Yes	Tertiary	7,297	7,297	-	-	-
<b>Total:</b>							<b>9,632</b>	<b>8,910</b>	<b>722</b>	<b>-</b>	<b>-</b>

6-4R | Recycled Water Direct Beneficial Uses Within Service Area

STATUS:

NOTES: -

The supplier will complete the table.										
Name of Supplier Producing (Treating) the Recycled Water:				VWD						
Name of Supplier Operating the Recycled Water Distribution System:				VWD						
Supplemental Volume of Water Added in 2020:										
Source of 2020 Supplemental Water:										
Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
Landscape Irrigation (excludes golf courses)			Schmidt Park and the Ball Field	Tertiary	40	37	37	37	37	37
Landscape Irrigation (excludes golf courses)			Other Potential Locations in SCLA	Tertiary		198	292	388	462	632
Industrial Use			HDPP	Tertiary	682	650	650	650	650	650
<b>Total:</b>					<b>722</b>	<b>885</b>	<b>979</b>	<b>1,075</b>	<b>1,149</b>	<b>1,319</b>
Internal Reuse (Not included in Statewide Recycled Water Volume).										
<small>*IPR - Indirect Potable Reuse</small>										

## 6-5R | 2015 Recycled Water Use Projection Compared to 2020 Actual

STATUS:

NOTES:

The supplier will complete the table.		
Use Type	2015 Projection for 2020	2020 Actual Use
Landscape Irrigation (excludes golf courses)	30	40
Industrial Use	2,900	682
<b>Total:</b>	<b>2,930</b>	<b>722</b>

## 6-6R | Methods to Expand Future Recycled Water Use

STATUS:

NOTES:

The supplier will complete the table below.			
Name of Action	Description	Planned Implementation Year	Expected Increase of Recycled Water Use
Irrigation	Phases 1-5 of RWMP	2040	462
Irrigation	Phase 6 of RWMP	2065	848
<b>Total:</b>			<b>1,310</b>





## 6-8R | Actual Water Supplies

STATUS:

NOTES: -

Water Supply	Additional Detail on Water Supply	2020		
		Actual Volume	Water Quality	Total Right or Safe Yield
Groundwater (not desalinated)	Mojave River Basir	18,978	Drinking Water	
Purchased or Imported Water	Mojave Water Agency F <sup>3</sup>	3,752	Drinking Water	
Recycled Water		722	Recycled Water	
<b>Total:</b>		<b>23,452</b>		



6-9R | Projected Water Supplies

STATUS:

NOTES:

Water Supply	Additional Detail on Water Supply	Projected Water Supply									
		2025		2030		2035		2040		2045	
		Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield
Groundwater (not desalinated)	Mojave Basin	25,620		27,990		29,090		30,150		31,380	
Recycled Water		885		979		1,075		1,149		1,319	
<b>Total:</b>		<b>26,505</b>	<b>-</b>	<b>28,969</b>	<b>-</b>	<b>30,165</b>	<b>-</b>	<b>31,299</b>	<b>-</b>	<b>32,699</b>	<b>-</b>



## 7-2R | Normal Year Supply and Demand Comparison

STATUS:

NOTES:

	2025	2030	2035	2040	2045
<b>Supply Totals</b> From Table 6-9R	26,505	28,969	30,165	31,299	32,699
<b>Demand Totals</b> From Table 4-3R	26,505	28,969	30,165	31,299	32,699
<b>Difference:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## 7-3R | Single Dry Year Supply & Demand Comparison

STATUS:

NOTES:

	2025	2030	2035	2040	2045
<b>Supply Totals</b>	26,505	28,969	30,165	31,299	32,699
<b>Demand Totals</b>	26,505	28,969	30,165	31,299	32,699
<b>Difference:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

## 7-4R | Multiple Dry Years Supply & Demand Comparison

STATUS:

NOTES: -

		2025	2030	2035	2040	2045
First Year	Supply Totals	26,505	28,969	30,165	31,299	32,699
	Demand Totals	26,505	28,969	30,165	31,299	32,699
Difference:		0	0	0	0	0
Second Year	Supply Totals	26,505	28,969	30,165	31,299	32,699
	Demand Totals	26,505	28,969	30,165	31,299	32,699
Difference:		0	0	0	0	0
Third Year	Supply Totals	26,505	28,969	30,165	31,299	32,699
	Demand Totals	26,505	28,969	30,165	31,299	32,699
Difference:		0	0	0	0	0
Fourth Year	Supply Totals	26,505	28,969	30,165	31,299	32,699
	Demand Totals	26,505	28,969	30,165	31,299	32,699
Difference:		0	0	0	0	0
Fifth Year	Supply Totals	26,505	28,969	30,165	31,299	32,699
	Demand Totals	26,505	28,969	30,165	31,299	32,699
Difference:		0	0	0	0	0
Sixth Year	Supply Totals	26,505	28,969	30,165	31,299	32,699
	Demand Totals	26,505	28,969	30,165	31,299	32,699
Difference:		0	0	0	0	0



7-5 | Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635(b)

STATUS:

NOTES:

2021	Gross Water Use	24,063
	Total Supplies	24,063
	Surplus/Shortfall without WSCP Action	0
	<b>Planned WSCP Actions (Use Reduction and Supply Augmentation)</b>	
	WSCP (Supply Augmentation Benefit)	
	WSCP (Use Reduction Savings Benefit)	
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
2022	Gross Water Use	24,674
	Total Supplies	24,674
	Surplus/Shortfall without WSCP Action	0
	<b>Planned WSCP Actions (Use Reduction and Supply Augmentation)</b>	
	WSCP (Supply Augmentation Benefit)	
	WSCP (Use Reduction Savings Benefit)	
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
2023	Gross Water Use	25,285
	Total Supplies	25,285
	Surplus/Shortfall without WSCP Action	0
	<b>Planned WSCP Actions (Use Reduction and Supply Augmentation)</b>	
	WSCP (Supply Augmentation Benefit)	
	WSCP (Use Reduction Savings Benefit)	
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
2024	Gross Water Use	25,896
	Total Supplies	25,896
	Surplus/Shortfall without WSCP Action	0
	<b>Planned WSCP Actions (Use Reduction and Supply Augmentation)</b>	
	WSCP (Supply Augmentation Benefit)	
	WSCP (Use Reduction Savings Benefit)	
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%
2025	Gross Water Use	26,505
	Total Supplies	26,505
	Surplus/Shortfall without WSCP Action	0
	<b>Planned WSCP Actions (Use Reduction and Supply Augmentation)</b>	
	WSCP (Supply Augmentation Benefit)	
	WSCP (Use Reduction Savings Benefit)	
	Revised Surplus/Shortfall	0
	Resulting Percent Use Reduction from WSCP Action	0%

## 8-1 | Water Shortage Contingency Plan Levels

STATUS:

NOTES: -

Shortage Level	Percent Shortage Range <sup>1</sup> (Numerical Value as a Percent)	Shortage Response Actions
1	Up to 10%	Normal Water Supply (VWD Stage 1) actions include, but are not limited to, landscape irrigation restrictions; prohibit water overflow to sidewalks, driveways and streets; and washing down of impervious surfaces.
2	Up to 20%	Threatened Water Supply Shortage (VWD Stage 2) actions include, but are not limited to, limiting landscape irrigation to specific days; prohibiting vehicle washing without a recirculation system; and all pools, spas and hot tubs must be covered.
3	Up to 30%	Threatened Water Supply Shortage (VWD Stage 2) actions include, but are not limited to, limiting landscape irrigation to specific days; prohibiting vehicle washing without a recirculation system; and all pools, spas and hot tubs must be covered.
4	Up to 40%	Critical Water Supply Shortage (VWD Stage 3) actions include, but are not limited to, prohibit sprinkler system for irrigation of outdoor landscaping; limiting fire hydrant flushing; and prohibit construction meters.
5	Up to 50%	Emergency Water Supply Shortage (VWD Stage 4) actions include, but are not limited to, prohibit use, filling or adding water to pools, spas, fountains and ponds; prohibit irrigation of landscape with potable water; and nurseries shall discontinue all potable irrigation watering.
6	>50%	Emergency Water Supply Shortage (VWD Stage 4) actions include, but are not limited to, prohibit use, filling or adding water to pools, spas, fountains and ponds; prohibit irrigation of landscape with potable water; and nurseries shall discontinue all potable irrigation watering.

<sup>1</sup> One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.

## 8-2 | Demand Reduction Actions

STATUS:

NOTES:

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement
1	CII - Restaurants may only serve water upon request	0-1%	Providing glasses of drinking water (except upon request) to customers in restaurants or other public places where food is routinely served is prohibited.	Yes
1	Landscape - Limit landscape irrigation to specific times	0-5%	<p><b>Summer Outdoor Sprinkler Restrictions:</b> From June 1 through September 30, irrigation/watering is permitted only between the hours of 10:00 p.m. and 6:00 a.m.</p> <p><b>Winter Outdoor Sprinkler Restrictions:</b> From October 1 through May 31, irrigation/watering is permitted only between the hours of 9:00 a.m. and 3:00 p.m.</p> <p><b>Summer Outdoor Sprinkler Restrictions (Large Systems):</b> From June 1, through September 30, irrigation/watering for facilities with Large Systems is only permitted between the hours of 10:00 p.m. and 9:00 a.m.</p> <p><b>Winter Outdoor Sprinkler Restrictions (Large Systems):</b> From October 1, through May 31, irrigation/watering for facilities with Large Systems is only permitted between the hours of 9:00 a.m. and 3:00 p.m.</p>	Yes
1	Landscape - Other landscape restriction or prohibition	0-5%	Irrigation with potable water of ornamental turf on public street medians is prohibited.	Yes
1	Landscape - Other landscape restriction or prohibition	0-1%	Irrigation/watering is permitted at any time if a handheld hose fitted with a positive shut-off nozzle is used or a Low-Volume Irrigation System is used, provided that the Low-Volume Irrigation System is not on an irrigation station which operates at the same time as a sprinkler system.	Yes
1	Landscape - Other landscape restriction or prohibition	0-5%	Application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall is prohibited.	Yes
1	Landscape - Other landscape restriction or prohibition	0-5%	<p>It is prohibited to plant any Water-intensive Landscape or Turf:</p> <p>a. In any Right-of-Way, narrow pathway, parking strip, roadway median, or along foundations of buildings.</p> <p>b. Having a width of less than five (5) feet, unless adjacent to a planter bed or other landscaped area which will catch overspray.</p>	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	0-5%	Water users are prohibited from causing or permitting any water furnished to their properties/premises by the VWD to run or to escape from any hose, pipe, valve, faucet, sprinkler or irrigation device onto any sidewalk, parking lot, adjacent property, street or gutter or to otherwise escape, if such running or escaping can be prevented.	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	0-5%	Watering of turf, ground cover, open ground, shrubbery, crops, gardens and trees, including agricultural irrigation, or any outdoor dispensing of water in a manner or to an extent which allows Excess Runoff is prohibited. However, a minimum amount of runoff, which is a natural consequence of conservative watering, either by hand or by mechanical or automated sprinkling facilities, is permitted, so long as such runoff does not amount to Excess Runoff.	Yes
1	Other	0-1%	Irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.	Yes

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0-1%	Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected is prohibited. Upon receiving notice from VWD of the existence of any such break, leak or other malfunction, water users shall identify the source of the water and within 48 hours, stop the source, by turning off the valve that supplies the water, and within 7 days, evaluate the extent of the problem and repair or correct same.	Yes
1	Other - Prohibit use of potable water for washing hard surfaces	0-1%	Washing down of impervious surfaces, including but not limited to walkways, patios, tennis courts, driveways, sidewalks or other paved surfaces (except in emergencies to remove spills of hazardous materials or eliminate dangerous conditions) is prohibited.	Yes
1	Other - Require automatic shut of hoses	0-1%	Using a hose that dispenses potable water for any outside purpose (including the washing of a motor vehicle), except where the hose is fitted with a positive shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use, is prohibited.	Yes
1	Other water feature or swimming pool restriction	0-1%	Use of potable water in fountains or other decorative water features, except where the water is part of a recirculating system, is prohibited.	Yes
2	Landscape - Limit landscape irrigation to specific days	0-5%	<p><b>Summer Outdoor Sprinkler Restrictions</b> - From June 1, through September 30, it shall be prohibited to:</p> <p>a. Apply potable water to any outdoor landscape at properties with street addresses ending in an even number (0, 2, 4, 6, or 8) except on Tuesdays, Thursdays, or Saturdays between the hours of 10:00 pm and 6:00 am.</p> <p>b. Apply potable water to any outdoor landscape at properties with street addresses ending in an odd number (1, 3, 5, 7, or 9) except on Wednesdays, Fridays, and Sundays between the hours of 10:00 pm and 6:00 am.</p> <p>c. Apply potable water to any outdoor landscape at facilities such as schools, parks, cemeteries, golf courses or industrial sites and areas without street address numbers, such as landscape maintenance assessment districts ("LMADS"), except on Mondays, Tuesdays, Thursdays, Fridays and Sundays, between the hours of 10:00 p.m. and 9:00 a.m., unless such facilities have Large Systems with approved Reduction Plans. Water Users at facilities with approved Reduction Plans may water in accordance with the provisions of those Reduction Plans so long as the Water Users maintain full compliance with the provisions of such Reduction Plans. Water Users which fail to meet the minimum required Reduction Plan percentage during any one (1) billing cycle more than two (2) times in one twelve-month period, shall not be considered in full compliance and must immediately resume watering in accordance with the first sentence of this Subsection. Failure to immediately resume watering in accordance therewith shall constitute a violation of this Ordinance.</p> <p><b>Winter Outdoor Sprinkler Restrictions</b> - from October 1 through May 31, it shall be prohibited to:</p> <p>a. Apply potable water to any outdoor landscape at properties with street addresses ending in an even number (0, 2, 4, 6, or 8) except on Tuesdays, Thursdays, or Saturdays between the hours of 9:00 a.m. and 3:00 p.m.</p> <p>b. Apply potable water to any outdoor landscape at properties with street addresses ending in an odd number (1, 3, 5, 7, or 9) except on Wednesdays, Fridays, and Sundays between the hours of 9:00 a.m. and 3:00 p.m.</p> <p>c. Apply potable water to any outdoor landscape at facilities such as schools, parks, cemeteries, golf courses or industrial sites and areas without street address numbers, such as landscape maintenance assessment districts ("LMADS") except on Mondays, Tuesdays, Thursdays, Fridays and Sundays, between the hours of 9:00 a.m. and 3:00 p.m., unless such facilities have Large Systems with approved Reduction Plans. Water Users at facilities with approved Reduction Plans may water in accordance with the provisions of those Reduction Plans so long as the Water Users maintain full compliance with the provisions of such Reduction Plans. Water Users which fail to meet the minimum required Reduction Plan percentage during any one (1) billing cycle more than two (2) times in one twelve-month period, shall not be considered in full compliance and must immediately resume watering in accordance with the first sentence of this Subsection c. Failure to immediately resume watering in accordance therewith shall constitute a violation of this</p>	Yes
2	Landscape - Other landscape restriction or prohibition	5-20%	Fall overseeding of Turf areas, unless irrigated with Reclaimed Water for non-residential water intensive landscape, shall be prohibited.	Yes
2	Landscape - Other landscape restriction or prohibition	0-5%	Exterior landscape plans for all new multi-family, commercial and industrial development must be presented to and approved by the VWD prior to issuance of a will serve letter.	Yes
2	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	0-1%	Using water for washing of motor vehicles is prohibited, except when done by commercial car wash facilities equipped with a recirculation system.	Yes
2	Pools and Spas - Require covers for pools and spas	0-1%	All swimming pools, spas and hot tubs must be covered when not in use.	Yes
3	Landscape - Other landscape restriction or prohibition	5-20%	It shall be unlawful to use a sprinkler system in the irrigation of outdoor landscaping of any kind.	Yes

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement
3	Other	0-1%	Use of water from fire hydrants shall be limited to firefighting or other authorized or approved water uses that are necessary to maintain health, safety, and welfare.	Yes
3	Other - Prohibit use of potable water for construction and dust control	0-1%	All existing construction meters shall be removed and no installation of or new construction meters shall be permitted.	Yes
4	Landscape - Prohibit all landscape irrigation	10-30%	The watering of turf, lawns, grass, shrubbery, ground cover, or other outdoor landscaping with potable water at any time is prohibited; the watering of parks, school grounds, and golf courses with potable water is also prohibited.	Yes
4	Other water feature or swimming pool restriction	0-1%	The use, filling or adding water to swimming pools or spas of any size, fountains, ponds, water courses, waterfalls, and other artificial water structures filled or refilled with water from any source is prohibited.	Yes
4	Other	0-1%	The washing of vehicles, trucks, trailers, boats, airplanes, and other types of mobile equipment with potable water, is prohibited unless such washing is necessary for the immediate interest of the public health or safety, and such washing occurs upon the immediate premises of commercial vehicle washes using recirculated water.	Yes
4	CII - Other CII restriction or prohibition	5-10%	All existing nurseries shall discontinue all potable irrigation watering.	Yes

## 8-3R | Supply Augmentation & Other Actions

STATUS:

NOTES: -

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap?	Additional Explanation or Reference
4	Other purchases	0-15%	Purchase additional water from Mojave Water Agency if available

# 10-1R | Notification to Cities & Counties

STATUS:

NOTES:

City	60 Day Notice	Notice of Public Hearing	Other
Town of Apple Valley	Yes	Yes	
City of Adelanto	Yes	Yes	
City of Hesperia	Yes	Yes	
City of Barstow	Yes	Yes	
County	60 Day Notice	Notice of Public Hearing	Other
San Bernardino County	Yes	Yes	
Other	60 Day Notice	Notice of Public Hearing	Other
Mojave Water Agency	Yes	Yes	Demand Coordination
Victor Valley Wastewater Reclamation Authority	Yes	Yes	

O-1B | Recommended Energy Intensity - Total Utility Approach

<b>Urban Water Supplier</b>	Victorville Water District	<b>Reporting Period Start Date</b>	1/1/2020
<b>Water Delivery Product</b>	Retail Potable Deliveries	<b>Reporting Period End Date</b>	12/30/2020
	<b>Urban Water Supplier Operational Control</b>		
	<b>Sum of all Water Management Process</b>		<b>Non-Consequential Hydropower</b>
	<b>Total Utility</b>	<b>Hydropower</b>	<b>Net Utility</b>
<b>Volume of Water Entering Process (AF)</b>	18977.45	0	18977.45
<b>Energy Consumed (kWh)</b>	15910934	0	15910934
<b>Energy Intensity (kWh/AF)</b>	838.4	0.0	838.4
<b>Data Quality</b>	Metered Data	<b>Quantity of Self-Generated Renewable Energy</b>	0.0 kWh
<b>Data Quality Narrative</b>	Total energy consumed in 2020 was quantified through meters for well production.		
<b>Water Supply Narrative</b>	Victorville Water District's water supply is comprised of groundwater extracted from the Mojave River Basin.		



O-2 | Recommended Energy Intensity - Wastewater and Recycled Water

<b>Urban Water Supplier</b>	Victorville Water District		<b>Reporting Period Start Date</b>	1/1/2020
<b>Water Delivery Product</b>	Other		<b>Reporting Period End Date</b>	12/30/2020
	<b>Urban Water Supplier Operational Control</b>			
	<b>Water Management Process</b>			<b>Non-Consequential Hydropower</b>
	<b>Collection / Conveyance</b>	<b>Treatment</b>	<b>Discharge / Distribution</b>	<b>Total</b>
<b>Volume of Wastewater Entering Process (AF)</b>		2335		2335
<b>Wastewater Energy Consumed (kWh)</b>		6189781		6189781
<b>Wastewater Energy Intensity (kWh/AF)</b>	0.0	2650.9	0.0	2650.9
<b>Volume of Recycled Water Entering Process (AF)</b>				0
<b>Recycled Water Energy Consumed (kWh)</b>				0
<b>Recycled Water Energy Intensity (kWh/AF)</b>	0.0	0.0	0.0	0.0
<b>Data Quality</b>	Metered Data		<b>Quantity of Self-Generated Renewable Energy</b>	0.0 kWh
<b>Data Quality Narrative</b>	Total energy consumed in 2020 was quantified through meters at the IWWTP for treatment.			
<b>Water Supply Narrative</b>				



# C

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## Appendix C - MWA Population Forecast



# MOJAVE WATER AGENCY

POPULATION FORECAST | 2020 EDITION

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August 2020



## ABOUT THE CENTER

The UC Riverside School of Business Center for Economic Forecasting and Development opened its doors in October 2015 and represents a major economic research initiative in one of California's most vital growth regions. The Center produces a wide variety of research both independently and in collaboration with academic, business, and government partners. Research products include monthly employment analyses, quarterly regional economic forecasts, a quarterly business activity index, a white paper series, and a major regional economic forecast conference, hosted annually.

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## EXECUTIVE SUMMARY

Urban planning involves the investment of millions of dollars in infrastructure projects long before they will be realized. From transportation to water supply management, these developments require many years of planning and resources in order to become fully functional. As a result, it is imperative to have a firm understanding of the size of population needed to support these projects, especially regarding water supply. This report, commissioned by the Mojave Water Agency (MWA), details population estimates forecasted to 2065 for the MWA region, subareas, and incorporated cities and towns. It also discusses methodology and recent changes in population trends, and provides an overview of the economic conditions in the Inland Empire and, specifically, San Bernardino County.

For years, California has experienced a housing supply crisis with several major metropolitan areas suffering a serious shortage of available homes. Home prices have skyrocketed over the past decade, with most California metropolitan areas surpassing pre-Recession peaks. However, San Bernardino County and the Inland Empire have remained considerably more affordable than some nearby counties, Los Angeles and Orange County in particular. The Inland Empire has the third largest workforce of any of California's metropolitan regions. It is a powerhouse for Logistical industries such as Transportation and Warehousing, and is ideally situated near the ports of Los Angeles and Long Beach, the largest in the nation in terms of import and export movement. As such, it is likely that interest in the Inland Empire will continue to grow as nearby counties in Southern California become less affordable and supply remains low.

Current economic and demographic trends indicate that California's population is slowing down, and will continue to do so well into the future. Statewide net migration remains positive but has declined significantly, relying on foreign migration to keep total net migration above zero. Furthermore, birth rates have dropped across most racial and ethnic groups, and are expected to flatten out or continue declining. The UCR Center for Economic Forecasting ("The UCR Center") expects the same patterns to resonate within San Bernardino County and the Mojave Water Agency. While the County and MWA service area experience greater home affordability compared to the nearby regions, regional data patterns over the past few years have shown negative net migration and declining birth rates. Net migration has averaged below zero between 2010 and 2019 – periods of considerable economic expansion. Between 2007 and 2018, San Bernardino County has gone from roughly 18 births per 1000 people to 13 births per 1000, a 24.2% drop. With crude birth rates declining and net migration in the negatives, San Bernardino County's and the MWA service area's populations have been revised down considerably.

The UCR Center estimates that between 2020 and 2060, the MWA service area will grow by 39.2% - which remains considerably larger than estimated growths in both San Bernardino County (21.1%) and California (12.9%).

The UCR Center forecasts incorporated cities and towns in order to estimate future populations in the MWA service areas and its subareas as well. The following are some key findings for recent estimates of the MWA incorporated cities and towns:

- Adelanto had the largest percentage growth of any incorporated city in the last decade, with population increasing by 10.5% between 2011 and 2019.
- Victorville, the largest population of any MWA incorporated city, saw the second largest percent growth at 7.7% between 2011 and 2019.
- The slowest growing cities by percentage were Apple Valley and Barstow, at 5.3% each between 2011 and 2019.

# FORECAST METHODOLOGY

The UCR Center uses a comprehensive econometric forecasting model for the MWA service area, to include population estimates for the incorporated cities, subareas, and water purveyors. Structured around a long-term forecast of the San Bernardino County economy, the model includes economic indicators such as residential housing stock, home prices, and employment trends. Relying on the underlying fundamentals of each variable, research is applied to identify the relationship between the variables of interest and various moving parts of the economy. Using this methodology, the UCR Center estimates population forecasts based on the incorporated cities in the MWA service area.

Historical population data was collected from two primary sources: The United States decennial census, and the DOF for annual estimates dating back to 1970. Census estimates were used to derive shares of population by census block in order to calculate population for subareas and purveyors by cities/towns. The DOF historical estimates were used to build a time series model, incorporating not only historical population estimates, but economic indicators including housing stock and home prices. The incorporated cities were then estimated using these econometric models out to 2065, and their respective shares were used to build the MWA service area. The subareas and water purveyors were developed using growth estimates from the incorporated cities and using the shares based off of the census blocks.

The long-run estimates from the DOF's San Bernardino County population forecast are used as a driver for the incorporated cities, accompanied by economic variables that help define the structure and interrelationships within the economy. As previously mentioned, demographic projections in California have been revised significantly to better reflect the changes in birth rates, deaths and net migration patterns. For example, California overall has seen its population forecast for 2060 lowered by roughly 5.2 million people, from over 50 million to just over 45 million. For San Bernardino County, 2060 estimates were lowered from roughly 3.2 million to about 2.7 million. A primary reason for the lower estimates is the revision in annual net migration. Previous iterations of the population forecasts predicted annual net migration between 2020 and 2060 to average roughly 14,470. In the revised forecasts, net migration averages just over 2,500 people per year. This means that, according to the revised forecast, an estimated 478,000 fewer people will move to San Bernardino County between 2020 and 2060. Given changes to the population at the county level, there will be notable differences in population estimates for the incorporated cities, subareas, purveyors and therefore the MWA service area as a whole.

Long-run forecasts are an estimate of what the population is expected to be in a given time period based on current economic and demographic trends. Policy decisions and large, random events add to the inherent uncertainty of any economic outlook. However, these models are developed using the most up-to-date data, and include comprehensive variables to accurately estimate what the population of the MWA service area will be in the future, given current and anticipated economic conditions.

## ECONOMIC AND DEMOGRAPHIC TRENDS INLAND EMPIRE AND SAN BERNARDINO COUNTY

Demographic trends are affected by various factors, from employment opportunities and economic development, to housing supply. Understanding the current situation in the Inland Empire and, more specifically, in San Bernardino County, gives better insight into how the population may change. Moreover, it is highly unlikely that any one factor would, by itself, determine and drive population trends and growth in any given area. For example, a city that has focused solely on housing supply, without taking economic and workforce developments into consideration, is unlikely to attract workers and large cohorts of the population. It takes a mixture of good economic development opportunities, housing affordability and more to attract large in-migration.

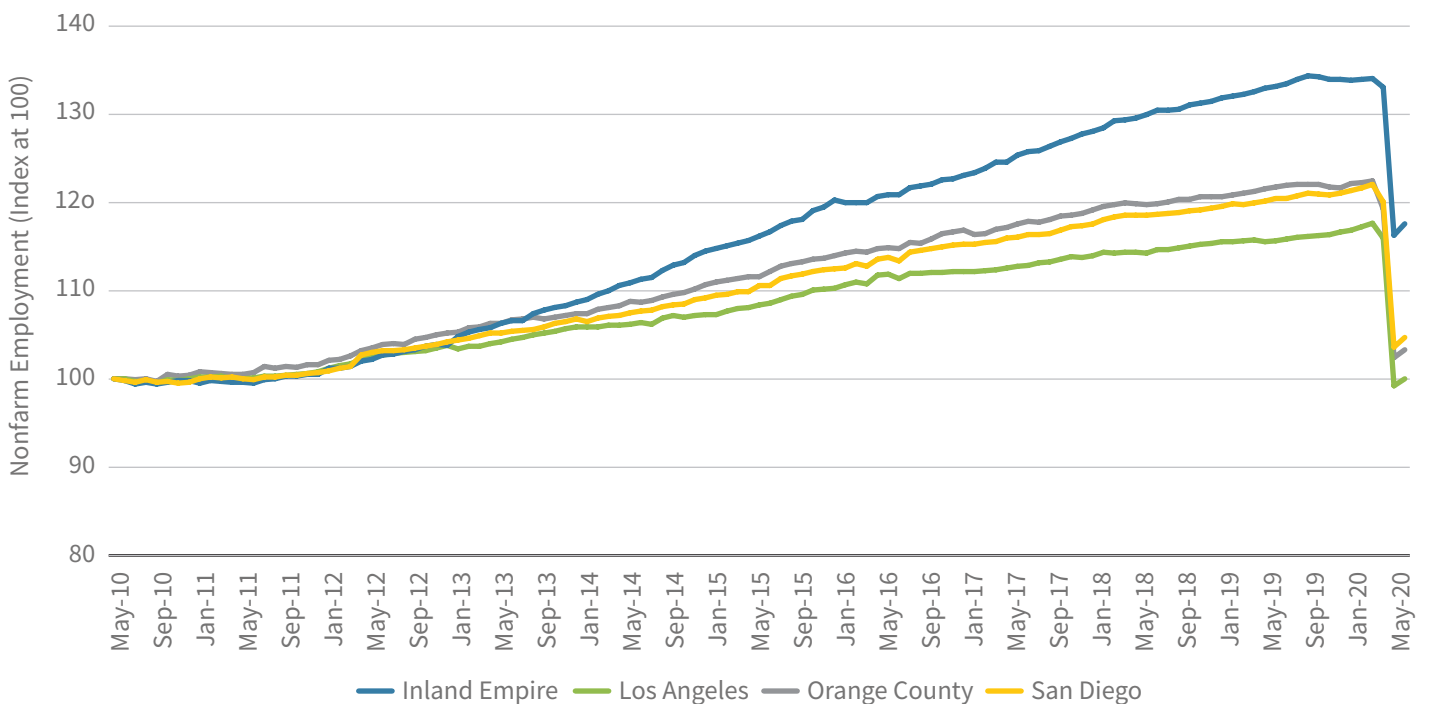




## JOB GROWTH: 10-YEAR CHANGE AND THE COVID IMPACT

Since the recovery from the Great Recession, the Inland Empire has experienced some of the highest employment growth rates in the state. As a primary national hub for Logistics, the Inland Empire has seen significant employment increases in the Transportation, Trade, and Warehouse sectors. Furthermore, greater housing affordability has allowed workers to move to the region and commute to nearby areas such as Los Angeles and Orange County.

### TOTAL NONFARM GROWTH INDEX AT 100



Source: California Employment Development Department; Analysis by The Center for Economic Forecasting

Over the past ten years, total nonfarm employment growth in the Inland Empire has surpassed all other metropolitan areas in Southern California. In the first quarter of 2020, as the COVID-19 pandemic began to shut down economies, levels of growth in the Inland Empire were better sustained than Los Angeles, Orange County, or San Diego.

## PRE-COVID ECONOMY:

### JOB GROWTH BETWEEN FEBRUARY 2010 AND FEBRUARY 2020 IN SOUTHERN CALIFORNIA

Industry	Inland Empire Feb-2020 Employment (000s)	10-Year % Growth			
		Inland Empire	Los Angeles	Orange County	San Diego
Total Nonfarm	1,549.5	34.9	18.4	23.6	23.8
Construction	109.1	79.1	46.4	57.2	51.2
Education/Health	255.7	58.6	28.0	39.1	34.6
Logistics	397.1	47.7	16.3	7.0	13.5
Leisure and Hospitality	172.9	42.2	45.3	39.3	33.4
Wholesale Trade	66.8	38.7	10.1	3.6	6.7
Admin Support	106.8	38.4	27.9	33.7	23.9
Professional/Business	156.6	29.9	27.3	32.7	32.1
NR/Mining	1.2	18.4	-35.7	2.6	33.7
Other Services	44.8	18.0	18.3	25.5	20.3
Retail Trade	181.8	16.9	8.7	7.8	11.8
Manufacturing	98.7	15.5	-11.6	6.2	23.3
Government	258.4	9.6	3.0	7.8	11.4
Financial Activities	43.6	6.8	7.1	17.6	15.2
Information	11.3	-20.4	20.2	15.4	-8.1

Source: California Employment Development Department; Analysis by The Center for Economic Forecasting

Compared to its neighbors, growth in the Inland Empire over the past decade has been astonishing. Between 2010 and 2020, growth in Construction, Education/Health, Wholesale Trade, and Admin Support was significantly higher than other regions in Southern California. However, it is in Logistics that growth has dwarfed nearby counties. With a growth of 47.7% between February 2010 and February 2020, the Inland Empire's percentage growth was almost three times higher than the next highest growing county in Southern California.

While the Inland Empire economy has enjoyed a strong resurgence over the last ten years, in line with nationwide trends, the outbreak of COVID-19 halted the largest U.S. economic expansion in history, effectively shutting down the economy. Because mitigation efforts have largely allowed only essential businesses to remain open, customer-reliant industries such as Leisure and Hospitality, In-store Retail, and Other Services (barbershops, nail salons, dry cleaners and so on) have taken a huge hit. Industries that have traditionally proved resilient during economic cycles, such as Health Care, have also suffered substantial job losses, since changes in consumer demand have caused people to book less routine and elective procedures due to concerns over health risks.

The uncertainty surrounding the timeline of the virus outbreak, and severity of the surge in cases has resulted in businesses being forced to close and re-open. Between February and June of 2020, the impact of the COVID-19 shutdowns in the Inland Empire has mirrored statewide figures. Total nonfarm employment has declined 10% over the last four months, compared to 11% statewide. Although the Leisure and Hospitality and Other Services industries have been hit hardest, the pandemic has caused declines in every industry, across both the Inland Empire and California.

Logistics, the Inland Empire’s largest employer, contracted 7.6% between February and June, slightly less than the 9.3% figure for California overall. However, demand for Transportation and Warehousing has increased considerably in the COVID-19 economy as the pandemic has spurred e-commerce and direct-to-consumer shopping. As long-term changes in consumer behavior continue, the Inland Empire will be well positioned to capitalize on these structural shifts.

The economic effects in other sectors of the Inland Empire economy will be contingent on the length and severity of each stage of the re-opening process; the degree to which each sector has been impacted throughout the mitigation phase; and any structural changes that have occurred within the industry. A crucial component of the recovery will be the number of people circulating within the economy (i.e. consumers returning to pre-pandemic behaviors). This is contingent on public policy and mandated business closures and consumers’ willingness to engage in high contact environments.

## COVID’S IMPACT ON JOBS: INLAND EMPIRE VS CALIFORNIA

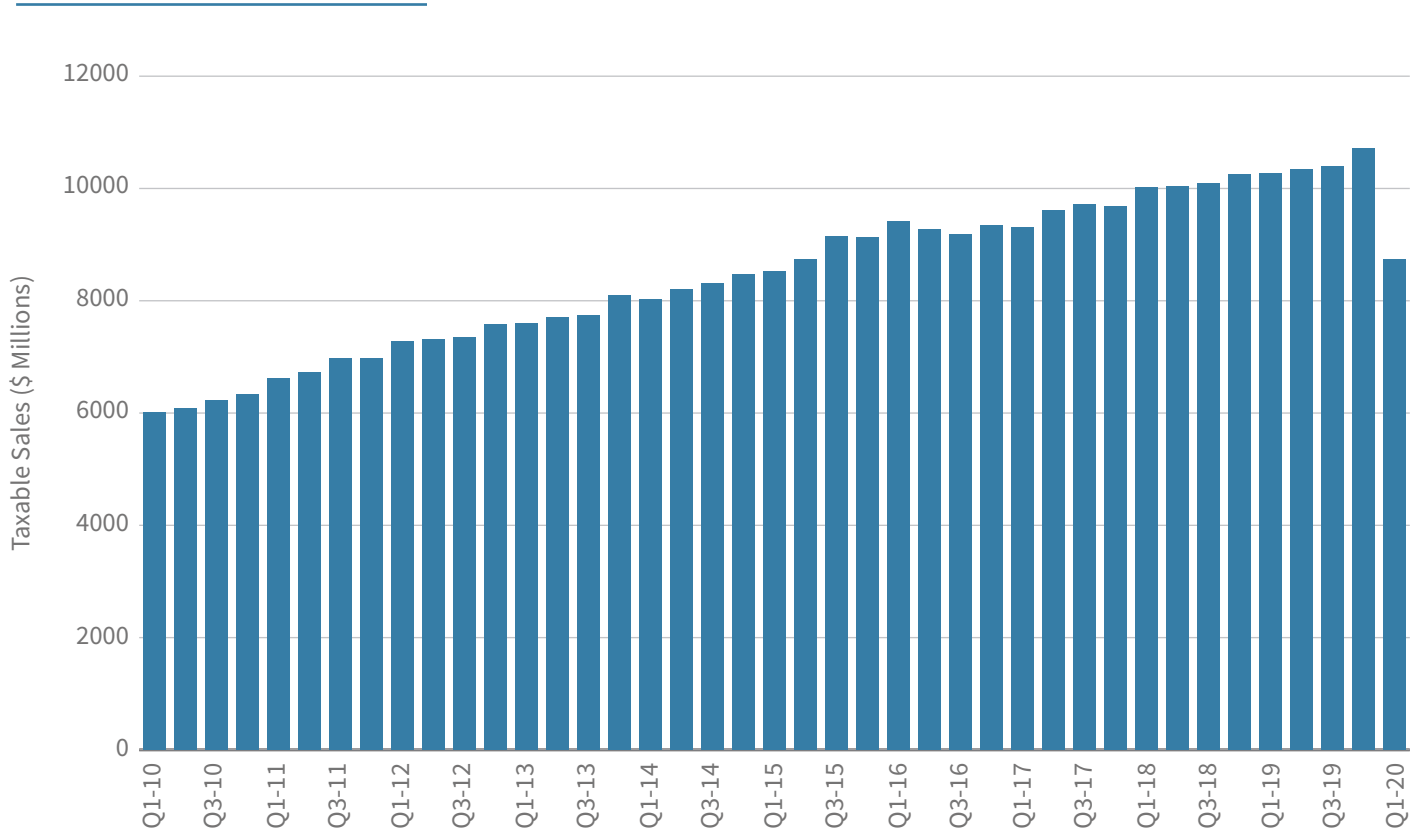
Industry	June 2020 Employment (000s)	% Growth February to June 2020	
		Inland Empire	California
Total Nonfarm	1,393.9	-10.0	-11.0
Logistics	367.1	-7.6	-9.3
Government	242.7	-6.1	-8.6
Education/Health	239.2	-6.4	-7.0
Retail Trade	159.2	-12.4	-11.6
Professional/Business	145.6	-7.0	-7.6
Leisure and Hospitality	118.2	-31.6	-30.8
Construction	102.4	-6.2	-5.4
Admin Support	97.4	-8.8	-11.5
Manufacturing	90.0	-8.8	-7.4
Wholesale Trade	64.0	-4.3	-6.5
Financial Activities	42.1	-3.5	-2.4
Other Services	36.0	-19.7	-24.1
Information	9.5	-16.4	-12.9
NR/Mining	1.1	-7.2	-1.8

Source: California Employment Development Department; Analysis by The Center for Economic Forecasting

Along with employment, consumer spending has also been hit hard by the COVID-19 crisis. The resulting freeze-up of consumer-driven revenues, such as sales and use tax and transient occupancy tax, have left local governments with multiyear budget shortfalls. Additionally, the freeze in consumer demand is keeping jobs sidelined, especially in customer-facing service sectors such as Leisure and Hospitality and Retail Trade, where consumers must engage in environments requiring close personal contact.

Prior to the pandemic, taxable sales in the Inland Empire, and especially San Bernardino, had been growing significantly. Between the fourth quarter of 2010 and the fourth quarter of 2019, taxable sales in San Bernardino County grew by 82.4% to over \$11.3 billion. Over the decade from 2010 to 2019, San Bernardino had the second largest percent growth in taxable sales after Riverside County (89.7%).

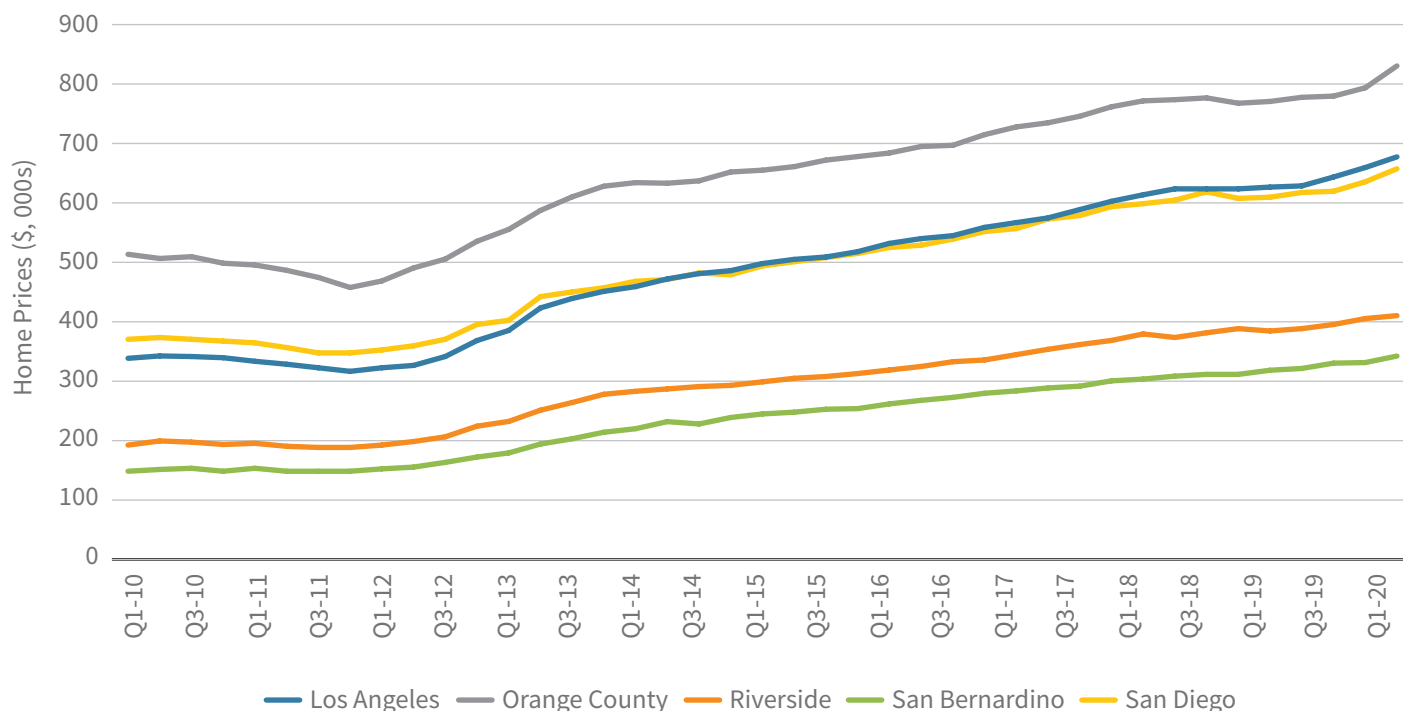
**TAXABLE SALES**  
**SAN BERNARDINO COUNTY, Q1-2010 TO Q1-2020**



Source: California Department of Tax and Fee Administration; Analysis by The Center for Economic Forecasting

Prior to COVID's impact on the economy, housing shortage was one of the biggest problems facing California. In terms of population growth, housing supply has fallen drastically short of requirements. The severity of the matter is spread unevenly among California's major metropolitan regions. The Inland Empire, and San Bernardino County in particular, remain an affordable haven compared to other areas, with median home prices the lowest of the five major counties in Southern California.

## MEDIAN HOME PRICES



Source: CoreLogic; Analysis by The Center for Economic Forecasting

As of the first quarter of 2020, the Inland Empire also had the lowest office and retail rents (both at \$23.3 per square foot). In fact, it is the only region in Southern California where office and retail rents are below \$30 per square foot.

### Q1-2020 Cost of Rent (\$ per Square Foot)

Region	Office	Retail	Warehouse/Distribution
Los Angeles	40.6	34.0	7.9
Orange County	35.1	34.5	7.6
San Diego	34.2	32.6	9.2
Inland Empire	23.3	23.3	5.8

Source: REIS; Analysis by The Center for Economic Forecasting

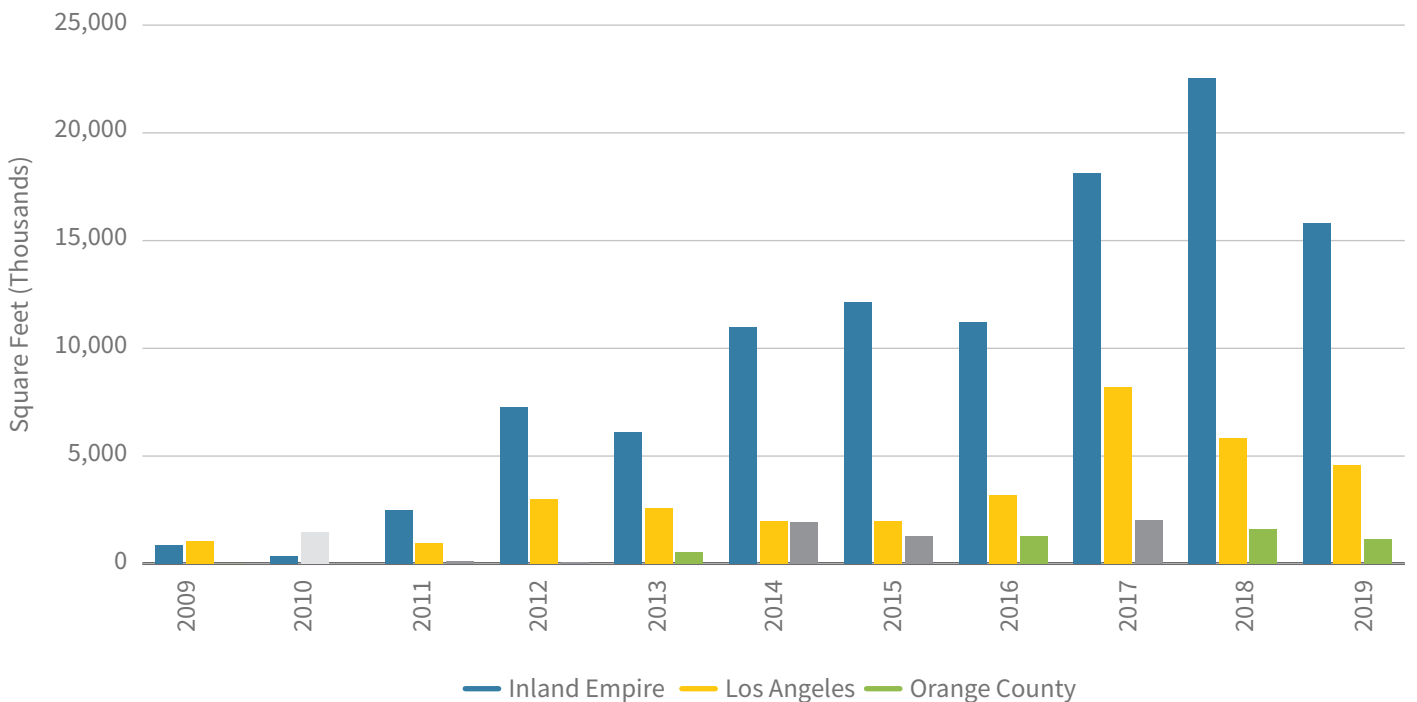
Despite tremendous growth in Logistics over the past ten years, the Inland Empire still offers cheaper rents for warehousing and distribution, and more availability, since its vacancy rate of 10.2% is higher than any other region in Southern California.

Region	Q1-2020 Vacancy Rate (%)		
	Office	Retail	Warehouse/Distribution
Los Angeles	14.2	7.2	5.7
Orange County	16.6	5.6	7.5
San Diego	16.0	6.0	8.7
Inland Empire	16.7	9.8	10.2

Source: REIS; Analysis by The Center for Economic Forecasting

Compared to other Southern California regions, vacancy rates in the Inland Empire are generally higher across commercial real estate properties. However, this is more a result of construction activity in the region rather than a lack of demand for commercial real estate. The square footage of office, retail, and industrial property completed in the Inland Empire vastly outpaces neighboring Los Angeles and Orange County. Additionally, substantial and sustained levels of net absorption over the last ten years suggest that the high commercial vacancy rates in the Inland Empire are due to construction activity fueled by high demand for space.

## COMMERCIAL REAL ESTATE COMPLETIONS



Source: REIS; Analysis by The Center for Economic Forecasting

## *DOES AFFORDABILITY DRIVE MIGRATION?*

Domestic and foreign migration patterns differ considerably in California. For the most part, foreign net migration has been positive, with an average of around 150,000 net migrants coming from abroad every year since 2010. Domestically however, the story is quite different. Over the last decade, the average annual net domestic migration has been -110,000. In 2018, roughly 698,300 people left California, the most popular destinations being Texas (12%), Arizona (10%), and Washington (7.5%).

San Bernardino County's migration patterns are similar to California's. Domestic migration has been negative for the past few years, while foreign migration has been largely positive. So how is it that an exceptionally affordable region has seen negative domestic migration? One reason is the different economic composition and workforce development opportunities in San Bernardino County compared to other regions. Given the rapid economic growth in Texas and Arizona, some Californians are opting to move there to take advantage of housing affordability and a lower cost of living. Alongside Riverside, San Bernardino is without doubt a powerhouse in the Logistics and Leisure industries. However, those sectors offer relatively low paying jobs. Cost of living and diverse economic opportunities are persuading many Californians to resettle out-of-state.

There's no doubt that housing affordability has its advantages in attracting migrants. However, in order to compete with states such as Arizona and Texas, San Bernardino County would also have to offer economic and workforce development opportunities to attract people to various industries. With population forecasts being revised down as birth rates across all races and ethnicities are expected to drop or flatten, it will ultimately be migration patterns that drive population growth.

## **MOJAVE WATER AGENCY POPULATION FORECAST**

In 2019, the Mojave Water Agency (MWA) service area was estimated to include roughly 487,923 people, or 22.3% of the total estimated San Bernardino County population. At the turn of the 21st century, the MWA region accounted for only 16.0% of the San Bernardino County population. Movement to the MWA region grew significantly in the early 2000s, specifically in its incorporated cities and towns. The average year-over-year growth for San Bernardino County between 2000 and 2010 was 1.9%, lower than Adelanto (5.9%), Apple Valley (2.5%), Hesperia (3.6%), and Victorville (5.8%). However, in the last ten years, these growth levels have flattened out. Between 2011 and 2019, average year-over-year growth in the county was 0.8%, lower than Adelanto (1.1%) and Victorville (1.0%).

Statewide population trends have been revised down in accordance with changes in birth rates and migration patterns. San Bernardino County is no different, but the MWA region has many advantages that could attract migrants given the right economic opportunities. This section explores the housing supply and affordability patterns of the MWA region, as well as how its economic indicators shape up future population estimates.

In terms of home prices, the MWA region is one of the most affordable areas in Southern California. While San Bernardino's home values are already far lower than neighboring counties, the incorporated cities and towns of the MWA service areas offer even lower home prices. In fact, as of December 2019, all of the incorporated cities and towns offer home prices below \$300,000, while the county average hovers well above that.

## HOME PRICES IN SAN BERNARDINO COUNTY AND MWA INCORPORATED CITIES/TOWNS

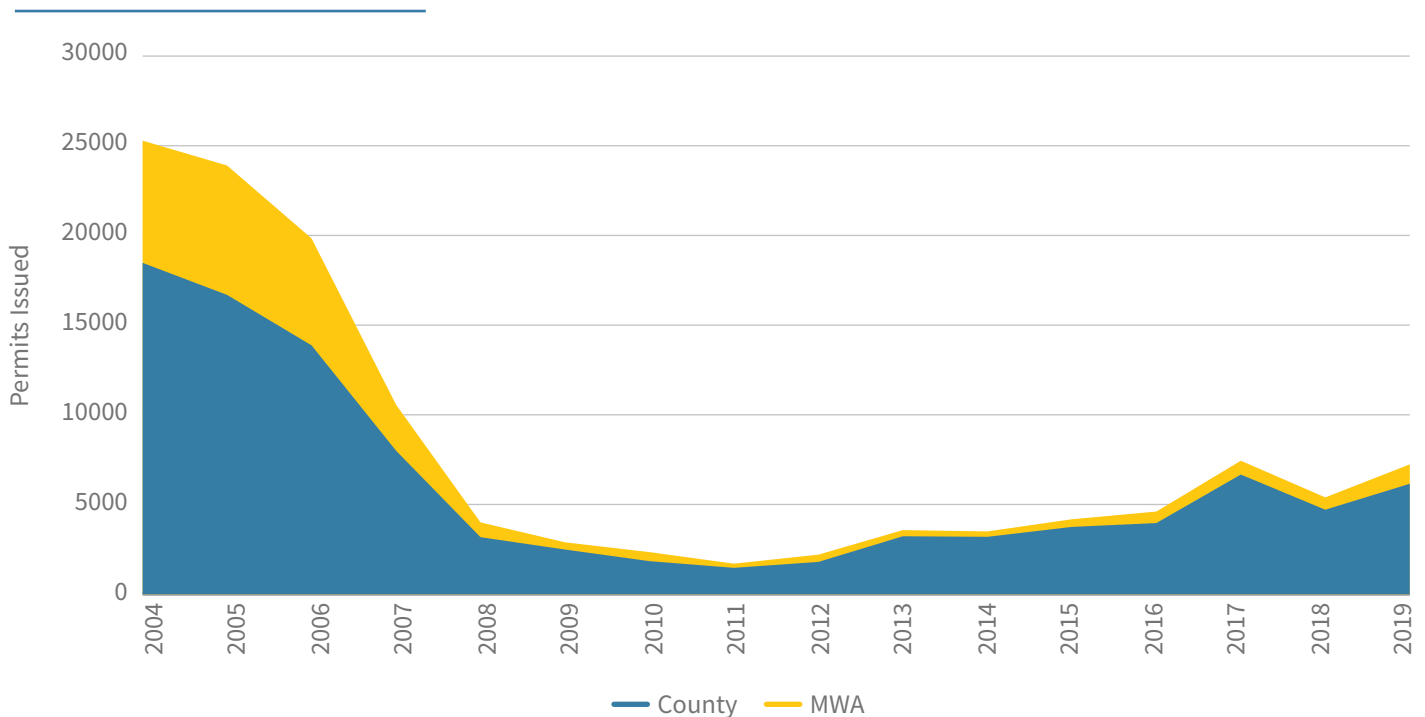
	Dec-2019 Value (\$, 000s)	1-Year % Growth	9-Year % Growth
San Bernardino County	360.6	3.3%	89.7%
Hesperia	279.3	3.5%	119.5%
Apple Valley	265.9	3.3%	95.4%
Victorville	264.6	4.1%	116.0%
Adelanto	235.8	4.1%	139.0%
Yucca Valley	215.5	6.9%	80.0%
Barstow	144.6	3.3%	107.5%

Source: Zillow; Analysis by The Center for Economic Forecasting

Growth in home prices in the incorporated cities and towns of the MWA service area has been significant. Between December 2010 and 2019, home values doubled in four of the incorporated cities and towns in the MWA service area (Hesperia, Victorville, Adelanto, and Barstow), and of the six incorporated cities, only Yucca Valley's home value growth between 2010 and 2019 was lower than the San Bernardino County average. More recently, home value growth in the MWA service area has generally been higher than the San Bernardino County average, with only Barstow and Apple Valley on the same level as the county at 3.3%. The increase in home value growth over the past ten years is indicative of both increased demand for housing in the MWA service area, and of the tight available supply.

## TOTAL PERMITS

### MWA VS SAN BERNARDINO COUNTY



Source: CIRB; Analysis by The Center for Economic Forecasting



In 2004, at the pre-Recession peak of housing permit activity, San Bernardino County issued over 18,400 permits, of which 36.9% came from the MWA incorporated towns and cities. Fast forward to 2019, and county's permit issuance is down to just over 6,150, while only 17.5% of them originate from MWA incorporated towns and cities. In fact, the MWA service area issued more housing permits in 2004 than the total issued by the region between 2010 and 2019. Nonetheless, things are slowly starting to pick up. In 2019, a total of 1,081 home permits were issued in the MWA service area, the highest annual figure in twelve years.

Compared to the county overall, economic activity, specifically consumption and spending, has been slow in the MWA service area over the past few years. Between 2009 and 2019, taxable sales in San Bernardino County grew by 76.6%. In comparison, incorporated cities in the MWA service area have lagged behind. At 77.1%, Hesperia is the only city to have achieved a growth rate higher than the county, while Barstow and Yucca Valley had significantly lower growth rates at 19.1% and 31.0% respectively. This indicates that most regions of the MWA service area are not yet experiencing the spending patterns associated with most of San Bernardino County, or Southern California as a whole.

## PRE-COVID TAXABLE SALES | SAN BERNARDINO COUNTY AND MWA INCORPORATED CITIES/TOWNS

Region	2019 Taxable Sales (\$, Millions)	10-year % Growth
County Total	41,770.3	76.6
Victorville	2,040.4	54.1
Hesperia	889.7	77.1
Barstow	619.5	19.1
Apple Valley	602.5	40.0
Yucca Valley	327.4	31.0
Adelanto	177.0	50.9

Source: California Department of Tax and Fee Administration ; Analysis by The Center for Economic Forecasting

In terms of taxable sales, early damage from COVID-19 has been worse in the MWA service area's incorporated cities relative to San Bernardino County. San Bernardino's taxable sales declined by 5.4% between the first quarter of 2019 and the first quarter of 2020, while certain MWA incorporated cities such as Apple Valley, Barstow, and Hesperia saw drops of 31.2%, 20.3%, and 18.0% respectively. The least damage was seen in Yucca Valley, where taxable sales fell by 16.6% in year-over-year terms, still more than five times the decline seen by the county.

## COVID TAXABLE SALES IMPACT

Region	Q1-2020 Taxable Sales (\$, Millions)	1-year % Growth
County Total	9,120.1	-5.4
Victorville	387.3	-18.2
Hesperia	168.7	-18.0
Barstow	117.6	-20.3
Apple Valley	103.3	-31.2
Yucca Valley	66.5	-16.6
Adelanto	43.6	-6.5

Source: California Department of Tax and Fee Administration; Analysis by The Center for Economic Forecasting



## CONCLUSION

The outlook on population growth across most areas in California has been revised downwards as the trend becomes clear that there are fewer births and less people moving into the state – especially domestically. This pattern is also seen in regional demographic forecasts. The MWA service area has a lot to offer, specifically affordable housing in a region where affordability is scarce. However, given the overall sociodemographic trends – lower home prices will not be enough to accelerate population growth.

While population forecasts in the MWA service area have been revised down compared to previous iterations, the region's population growth is nonetheless expected to outpace those of both San Bernardino County and California between 2020 and 2060, driven primarily by strong increases in larger cities such as Victorville and Hesperia.

## APPENDIX A

### MWA SERVICE AREA TOTAL AND MWA INCORPORATED CITIES/TOWNS FORECASTS

Year	MWA Service Area Total	Adelanto	Apple Valley	Barstow	Hesperia	Victorville	Yucca Valley
1990	266,232	6,751	46,159	24,260	50,705	50,579	16,442
2000	321,264	17,895	54,240	22,699	62,740	64,165	16,855
2010	453,649	31,760	69,144	22,757	90,170	115,913	20,656
2011	457,776	31,786	69,770	22,939	90,968	117,447	20,920
2012	462,455	31,351	70,319	23,251	91,597	119,992	21,077
2013	467,393	31,904	70,643	23,571	91,714	122,329	21,222
2014	470,748	33,282	71,016	23,574	91,728	123,106	21,222
2015	473,810	33,791	71,765	23,663	92,459	123,465	21,543
2016	477,940	34,367	72,234	23,875	93,173	124,600	21,672
2017	481,932	35,192	72,412	24,037	94,233	125,338	21,859
2018	484,593	35,162	72,891	24,075	95,127	125,782	21,905
2019	487,923	35,136	73,464	24,150	96,362	126,543	22,050
2020	492,319	35,811	74,205	24,193	97,846	127,696	22,230
2025	533,170	39,238	78,616	24,497	107,564	148,196	23,128
2030	567,855	41,958	82,169	24,813	115,845	165,513	23,887
2035	592,849	44,242	84,990	25,115	122,562	176,241	24,551
2040	614,931	46,159	87,601	25,390	128,858	185,270	25,136
2045	634,934	47,770	89,923	25,630	134,578	193,580	25,651
2050	653,017	49,125	91,967	25,840	139,698	201,298	26,105
2055	669,424	50,269	93,791	26,025	144,324	208,430	26,505
2060	684,247	51,238	95,409	26,185	148,478	214,977	26,858
2065	697,603	52,062	96,843	26,326	152,196	220,954	27,169

Forecast by The Center for Economic Forecasting

**APPENDIX B**  
**MWA SUB AREA FORECASTS**

Year	Alto	Alto Transition Zone	Baja	Centro	Este	Morongo	Oeste
1990	165,100	17,468	5,782	35,046	5,167	31,001	5,501
2000	222,012	14,636	5,035	33,392	5,822	31,375	7,838
2010	334,862	23,366	4,729	34,167	7,370	38,177	10,595
2011	338,235	23,514	4,779	34,470	7,448	38,623	10,707
2012	341,966	23,530	4,821	34,884	7,514	38,937	10,802
2013	345,491	23,905	4,874	35,331	7,596	39,277	10,920
2014	347,856	24,486	4,911	35,424	7,654	39,415	11,003
2015	350,137	24,704	4,925	35,546	7,676	39,788	11,034
2016	353,161	25,019	4,966	35,858	7,740	40,069	11,127
2017	355,998	25,403	5,005	36,113	7,800	40,399	11,213
2018	358,116	25,466	5,041	36,239	7,857	40,580	11,295
2019	360,879	25,528	5,067	36,376	7,897	40,822	11,353
2020	364,694	25,826	5,073	36,432	7,906	41,022	11,366
2025	401,345	28,025	5,146	36,913	8,020	42,191	11,530
2030	432,258	29,848	5,226	37,422	8,145	43,247	11,709
2035	454,174	31,218	5,294	37,888	8,251	44,163	11,861
2040	473,548	32,379	5,357	38,315	8,349	44,980	12,002
2045	491,137	33,393	5,416	38,698	8,441	45,714	12,135
2050	507,071	34,285	5,471	39,040	8,526	46,370	12,256
2055	521,557	35,070	5,521	39,345	8,604	46,957	12,369
2060	534,661	35,763	5,568	39,620	8,677	47,483	12,475
2065	546,475	36,376	5,612	39,866	8,745	47,956	12,572

Forecast by The Center for Economic Forecasting

## APPENDIX C

### MWA WATER PURVEYOR FORECASTS

Year	Liberty Utilities - Apple Valley Water Company	Bighorn- Desert View Water Agency	City of Adelanto Water District	County Service Area 64	County Service Area 70 J	Golden State Water Company – Barstow System
1990	37,228	1,200	6,751	5,353	3,328	29,905
2000	45,207	2,892	17,895	7,595	5,652	29,337
2010	57,847	3,839	31,760	9,075	9,467	30,173
2011	58,372	3,880	31,781	10,552	9,566	30,435
2012	58,831	3,914	31,346	10,666	9,650	30,811
2013	59,106	3,957	31,899	10,792	9,750	31,211
2014	59,419	3,987	33,277	10,871	9,821	31,277
2015	60,042	3,998	33,786	10,907	9,851	31,388
2016	60,435	4,032	34,362	10,998	9,933	31,664
2017	60,587	4,063	35,186	11,077	10,013	31,887
2018	60,988	4,093	35,156	11,151	10,087	31,986
2019	61,466	4,114	35,130	11,212	10,143	32,103
2020	62,081	4,118	35,811	11,244	10,162	32,154
2025	65,745	4,178	39,238	11,691	10,356	32,574
2030	68,699	4,243	41,958	12,099	10,554	33,017
2035	71,045	4,298	44,242	12,390	10,721	33,427
2040	73,215	4,349	46,159	12,646	10,876	33,801
2045	75,146	4,397	47,770	12,884	11,021	34,135
2050	76,847	4,441	49,125	13,103	11,153	34,432
2055	78,364	4,482	50,269	13,304	11,275	34,697
2060	79,710	4,520	51,238	13,490	11,387	34,934
2065	80,904	4,555	52,062	13,661	11,491	35,145

Forecast by The Center for Economic Forecasting

Year	Helendale Community Services District	Hesperia Water District	Hi-Desert Water District	Joshua Basin County Water District	Phelan Pinon Hills Community Services District	Victorville Water District
1990	3,273	50,976	19,060	7,515	9,688	54,539
2000	4,704	62,592	19,198	8,062	13,770	69,095
2010	6,180	89,742	23,760	9,534	19,423	122,051
2011	6,245	90,536	24,145	9,635	19,628	123,649
2012	6,301	91,163	24,330	9,720	19,803	126,246
2013	6,369	91,280	24,511	9,826	20,018	128,649
2014	6,418	91,294	24,536	9,901	20,171	129,475
2015	6,436	92,022	24,866	9,929	20,229	129,852
2016	6,490	92,732	25,023	10,012	20,398	131,040
2017	6,541	93,787	25,236	10,090	20,557	131,829
2018	6,588	94,676	25,307	10,164	20,706	132,321
2019	6,622	95,905	25,469	10,216	20,813	133,115
2020	6,629	97,380	25,653	10,227	20,836	134,273
2025	6,725	107,045	26,600	10,375	21,136	154,831
2030	6,830	115,279	27,414	10,536	21,465	172,220
2035	6,919	121,959	28,124	10,673	21,744	183,018
2040	7,001	128,221	28,751	10,800	22,003	192,113
2045	7,078	133,910	29,306	10,919	22,245	200,486
2050	7,149	139,001	29,796	11,029	22,469	208,262
2055	7,215	143,602	30,231	11,131	22,676	215,447
2060	7,276	147,734	30,615	11,225	22,869	222,044
2065	7,333	151,431	30,956	11,313	23,048	228,069

Forecast by The Center for Economic Forecasting

# MOJAVE WATER AGENCY

POPULATION FORECAST | 2020 EDITION

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# D

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## Appendix D - AWWA Water Audits





# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

American Water Works Association

**Water Audit Report for:** City of Victorville Victorville Water District (3610052)  
**Reporting Year:** 2018 7/2017 - 6/2018

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the

**All volumes to be entered as: ACRE-FEET PER YEAR**

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

**WATER SUPPLIED**

----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	<input type="button" value="+"/> <input type="button" value="?"/> 5	22,518.330	acre-ft/yr
Water imported:	<input type="button" value="+"/> <input type="button" value="?"/> n/a	0.000	acre-ft/yr
Water exported:	<input type="button" value="+"/> <input type="button" value="?"/> 3	663.400	acre-ft/yr

**Master Meter and Supply Error Adjustments**

<input type="button" value="+"/> <input type="button" value="?"/> 3	Pcnt: -1.02%	<input type="radio"/> <input checked="" type="radio"/>	<input type="text" value=""/>	Value:	<input type="text" value=""/>	acre-ft/yr
<input type="button" value="+"/> <input type="button" value="?"/> 3		<input type="radio"/> <input checked="" type="radio"/>	<input type="text" value=""/>		<input type="text" value=""/>	acre-ft/yr
<input type="button" value="+"/> <input type="button" value="?"/> 3		<input type="radio"/> <input checked="" type="radio"/>	<input type="text" value=""/>		<input type="text" value=""/>	acre-ft/yr

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

**WATER SUPPLIED:** 22,086.984 acre-ft/yr

**AUTHORIZED CONSUMPTION**

Billed metered:	<input type="button" value="+"/> <input type="button" value="?"/> 7	20,081.240	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/> <input type="button" value="?"/> n/a	0.000	acre-ft/yr
Unbilled metered:	<input type="button" value="+"/> <input type="button" value="?"/> 10	103.604	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/> <input type="button" value="?"/> 5	55.217	acre-ft/yr

Click here:  for help using option buttons below

Pcnt:   Value:  acre-ft/yr

Use buttons to select percentage of water supplied OR value

**AUTHORIZED CONSUMPTION:**  20,240.061 acre-ft/yr

**WATER LOSSES (Water Supplied - Authorized Consumption)**

1,846.922 acre-ft/yr

**Apparent Losses**

Unauthorized consumption:   55.217 acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:   4 30.323 acre-ft/yr

Systematic data handling errors:   50.203 acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:**  135.743 acre-ft/yr

Pcnt:  0.20%  Value:

0.10%   acre-ft/yr

0.25%   acre-ft/yr

**Real Losses (Current Annual Real Losses or CARL)**

Real Losses = Water Losses - Apparent Losses:  1,711.179 acre-ft/yr

**WATER LOSSES:** 1,846.922 acre-ft/yr

**NON-REVENUE WATER**

**NON-REVENUE WATER:**  2,005.744 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

Length of mains:	<input type="button" value="+"/> <input type="button" value="?"/> 8	722.0	miles
Number of <u>active AND inactive</u> service connections:	<input type="button" value="+"/> <input type="button" value="?"/> 10	35,710	
Service connection density:	<input type="button" value="?"/>	49	conn./mile main

Are customer meters typically located at the curbstop or property line?

Average length of customer service line:   (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:   4 88.5 psi

**COST DATA**

Total annual cost of operating water system:	<input type="button" value="+"/> <input type="button" value="?"/> 10	\$28,153,037	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/> <input type="button" value="?"/> 8	\$1.89	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/> <input type="button" value="?"/> 7	\$402.97	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

**WATER AUDIT DATA VALIDITY SCORE:**

\*\*\* YOUR SCORE IS: 64 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Customer metering inaccuracies
- 3: Billed metered



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

American Water Works Association

Click to access definition  
 Click to add a comment

**Water Audit Report for:**   
**Reporting Year:**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the

**All volumes to be entered as: ACRE-FEET PER YEAR**

To select the correct data grading for each input, determine the highest grade where

**WATER SUPPLIED**

Volume from own sources:	<input type="button" value="+"/> <input type="button" value="?"/> 5	<input type="text" value="17,645.168"/>	acre-ft/yr
Water imported:	<input type="button" value="+"/> <input type="button" value="?"/> 5	<input type="text" value="4,390.620"/>	acre-ft/yr
Water exported:	<input type="button" value="+"/> <input type="button" value="?"/> 3	<input type="text" value="347.258"/>	acre-ft/yr

**Master Meter and Supply Error Adjustments**

Pcnt:	<input type="text" value="3"/>	<input type="text" value=""/>	acre-ft/yr
	<input type="button" value="+"/> <input type="button" value="?"/> 4	<input type="text" value=""/>	acre-ft/yr
	<input type="button" value="+"/> <input type="button" value="?"/> 4	<input type="text" value=""/>	acre-ft/yr

Enter negative % or value for under-registration  
 Enter positive % or value for over-registration

**WATER SUPPLIED:**  acre-ft/yr

**AUTHORIZED CONSUMPTION**

Billed metered:	<input type="button" value="+"/> <input type="button" value="?"/> 5	<input type="text" value="19,009.150"/>	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/> <input type="button" value="?"/> n/a	<input type="text" value="0.000"/>	acre-ft/yr
Unbilled metered:	<input type="button" value="+"/> <input type="button" value="?"/> 8	<input type="text" value="19.570"/>	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/> <input type="button" value="?"/> 5	<input type="text" value="32.533"/>	acre-ft/yr

**AUTHORIZED CONSUMPTION:**  acre-ft/yr

Click here:   
 for help using option  
 buttons below

Pcnt:  Value:  acre-ft/yr

Use buttons to select  
 percentage of water  
 supplied  
 OR  
 value

Pcnt:  Value:

**WATER LOSSES (Water Supplied - Authorized Consumption)**

acre-ft/yr

**Apparent Losses**

Unauthorized consumption:    acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:   4  acre-ft/yr

Systematic data handling errors:   5  acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:**  acre-ft/yr

**Real Losses (Current Annual Real Losses or CARL)**

Real Losses = Water Losses - Apparent Losses:  acre-ft/yr

**WATER LOSSES:**  acre-ft/yr

**NON-REVENUE WATER**

**NON-REVENUE WATER:**  acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

Length of mains:	<input type="button" value="+"/> <input type="button" value="?"/> 9	<input type="text" value="722.0"/>	miles
Number of <u>active AND inactive</u> service connections:	<input type="button" value="+"/> <input type="button" value="?"/> 10	<input type="text" value="36,063"/>	
Service connection density:	<input type="button" value="?"/>	<input type="text" value="50"/>	conn./mile main

Are customer meters typically located at the curbstop or property line?

Average length of customer service line:   (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:   6  psi

**COST DATA**

Total annual cost of operating water system:	<input type="button" value="+"/> <input type="button" value="?"/> 10	<input type="text" value="\$27,688,604"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/> <input type="button" value="?"/> 9	<input type="text" value="\$1.99"/>	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/> <input type="button" value="?"/> 6	<input type="text" value="\$154.60"/>	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

**WATER AUDIT DATA VALIDITY SCORE:**

\*\*\* YOUR SCORE IS: 61 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Billed metered
- 3: Customer metering inaccuracies



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

American Water Works Association

Click to access definition  
 Click to add a comment

Water Audit Report for: **City Of Victorville**  
Reporting Year: **2019**    **1/2019 - 12/2019**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the

**All volumes to be entered as: ACRE-FEET PER YEAR**

To select the correct data grading for each input, determine the highest grade where

**WATER SUPPLIED**

Volume from own sources:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="7"/>	<input type="text" value="16,673.930"/>	acre-ft/yr
Water imported:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="7"/>	<input type="text" value="4,589.865"/>	acre-ft/yr
Water exported:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="3"/>	<input type="text" value="660.670"/>	acre-ft/yr

**Master Meter and Supply Error Adjustments**

<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="3"/>	<input type="text" value="1.18%"/>	<input type="text" value="( )"/>	<input type="text" value=""/>	acre-ft/yr
<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="5"/>	<input type="text" value="-0.23%"/>	<input type="text" value="( )"/>	<input type="text" value=""/>	acre-ft/yr
<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value="( )"/>	<input type="text" value=""/>	acre-ft/yr

**WATER SUPPLIED:**    **20,418.968** acre-ft/yr

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

**AUTHORIZED CONSUMPTION**

Billed metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="7"/>	<input type="text" value="19,345.800"/>	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="n/a"/>	<input type="text" value="0.000"/>	acre-ft/yr
Unbilled metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="8"/>	<input type="text" value="9.570"/>	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="5"/>	<input type="text" value="51.047"/>	acre-ft/yr

**AUTHORIZED CONSUMPTION:**    **19,406.417** acre-ft/yr

Click here:  for help using option buttons below

Pcnt:     Value:  acre-ft/yr

Use buttons to select percentage of water supplied  
**OR**  
value

Pcnt:     Value: |  |  | acre-ft/yr |
|  |  | acre-ft/yr |

**WATER LOSSES (Water Supplied - Authorized Consumption)**

**1,012.551** acre-ft/yr

**Apparent Losses**

Unauthorized consumption:    acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="4"/>	<input type="text" value="97.263"/>	acre-ft/yr
Systematic data handling errors:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="5"/>	<input type="text" value="48.365"/>	acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:**    **196.675** acre-ft/yr

**Real Losses (Current Annual Real Losses or CARL)**

Real Losses = Water Losses - Apparent Losses:    **815.876** acre-ft/yr

**WATER LOSSES:**    **1,012.551** acre-ft/yr

**NON-REVENUE WATER**

**NON-REVENUE WATER:**    **1,073.168** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

Length of mains:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="10"/>	<input type="text" value="709.2"/>	miles
Number of <u>active</u> AND <u>inactive</u> service connections:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="10"/>	<input type="text" value="36,070"/>	
Service connection density:	<input type="button" value="?"/>	<input type="text" value=""/>	<input type="text" value="51"/>	<input type="text" value=""/>	conn./mile main

Are customer meters typically located at the curbstop or property line?   

Average length of customer service line:      (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:     psi

**COST DATA**

Total annual cost of operating water system:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="10"/>	<input type="text" value="\$32,642,891"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="10"/>	<input type="text" value="\$2.10"/>	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="5"/>	<input type="text" value="\$144.00"/>	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

**WATER AUDIT DATA VALIDITY SCORE:**

**\*\*\* YOUR SCORE IS: 70 out of 100 \*\*\***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Customer metering inaccuracies
- 3: Variable production cost (applied to Real Losses)



# E

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## Appendix E - SBX7-7 Verification and Compliance Forms

SBX7-7 Verification Forms (From 2015 UWMP)



**SB X7-7 Table-1: Baseline Period Ranges**

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	25,234	Acre Feet
	2008 total volume of delivered recycled water	-	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period <sup>1,2</sup>	10	Years
	Year beginning baseline period range	1996	
5-year baseline period	Year ending baseline period range <sup>3</sup>	2005	
	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range <sup>4</sup>	2007	

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

<sup>3</sup> The ending year must be between December 31, 2004 and December 31, 2010.

<sup>4</sup> The ending year must be between December 31, 2007 and December 31, 2010.

NOTES: 2010 UWMMP

**SB X7-7 Table 2: Method for Population Estimates**

<b>Method Used to Determine Population</b> (may check more than one)	
<input type="checkbox"/>	<b>1. Department of Finance (DOF)</b> DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	<b>2. Persons-per-Connection Method</b>
<input type="checkbox"/>	<b>3. DWR Population Tool</b>
<input checked="" type="checkbox"/>	<b>4. Other</b> DWR recommends pre-review
NOTES: Beacon DOF Population Data	

<b>SB X7-7 Table 3: Service Area Population</b>		
<b>Year</b>		<b>Population</b>
<b>10 to 15 Year Baseline Population</b>		
Year 1	1996	62,529
Year 2	1997	64,026
Year 3	1998	65,558
Year 4	1999	66,914
Year 5	2000	69,095
Year 6	2001	73,140
Year 7	2002	77,422
Year 8	2003	81,955
Year 9	2004	86,753
Year 10	2005	91,832
<i>Year 11</i>		
<i>Year 12</i>		
<i>Year 13</i>		
<i>Year 14</i>		
<i>Year 15</i>		
<b>5 Year Baseline Population</b>		
Year 1	2003	81,955
Year 2	2004	86,753
Year 3	2005	91,832
Year 4	2006	97,208
Year 5	2007	102,899
<b>2015 Compliance Year Population</b>		
	<b>2015</b>	128,005
NOTES: Beacon Population Data		

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	Deductions					Annual Gross Water Use	
		Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>		
<b>10 to 15 Year Baseline - Gross Water Use</b>								
Year 1	1996	18,921			-		-	18,921
Year 2	1997	18,835			-		-	18,835
Year 3	1998	17,455			-		-	17,455
Year 4	1999	18,960			-		-	18,960
Year 5	2000	20,636			-		-	20,636
Year 6	2001	19,859			-		-	19,859
Year 7	2002	21,736			-		-	21,736
Year 8	2003	22,409			-		-	22,409
Year 9	2004	24,245			-		-	24,245
Year 10	2005	25,923			-		-	25,923
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
<b>10 - 15 year baseline average gross water use</b>								<b>20,898</b>
<b>5 Year Baseline - Gross Water Use</b>								
Year 1	2003	22,409			-		-	22,409
Year 2	2004	24,245			-		-	24,245
Year 3	2005	25,923			-		-	25,923
Year 4	2006	28,317			-		-	28,317
Year 5	2007	29,256			-		-	29,256
<b>5 year baseline average gross water use</b>								<b>26,030</b>
<b>2015 Compliance Year - Gross Water Use</b>								
<b>2015</b>	20,843	12			-		-	<b>20,831</b>
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3								
Out of service area Construction Water (email); Out of service area water breakdown (email)								

**SB X7-7 Table 4-A: Volume Entering the Distribution System(s)**

Complete one table for each source.

<b>Name of Source</b>		Mojave Basin		
<b>This water source is:</b>				
<input checked="" type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
<b>10 to 15 Year Baseline - Water into Distribution System</b>				
Year 1	1996	18,921		18,921
Year 2	1997	18,835		18,835
Year 3	1998	17,455		17,455
Year 4	1999	18,960		18,960
Year 5	2000	20,636		20,636
Year 6	2001	19,859		19,859
Year 7	2002	21,736		21,736
Year 8	2003	22,409		22,409
Year 9	2004	24,245		24,245
Year 10	2005	25,923		25,923
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
<b>5 Year Baseline - Water into Distribution System</b>				
Year 1	2003	22,409		22,409
Year 2	2004	24,245		24,245
Year 3	2005	25,923		25,923
Year 4	2006	28,317		28,317
Year 5	2007	29,256		29,256
<b>2015 Compliance Year - Water into Distribution System</b>				
<b>2015</b>	17,340			17,340
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES: VWD Data Request_borrowman_160309; VWD Production Report 2015				

**SB X7-7 Table 4-A: Volume Entering the Distribution System(s)**

<b>Name of Source</b>		Imported Water Purchase (R3)		
<b>This water source is:</b>				
<input type="checkbox"/>	The supplier's own water source			
<input checked="" type="checkbox"/>	A purchased or imported source			
<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
<b>10 to 15 Year Baseline - Water into Distribution System</b>				
Year 1	1,996	0		0
Year 2	1,997	0		0
Year 3	1,998	0		0

Year 4	1,999	0		0
Year 5	2,000	0		0
Year 6	2,001	0		0
Year 7	2,002	0		0
Year 8	2,003	0		0
Year 9	2,004	0		0
Year 10	2,005	0		0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	0		0
Year 2	2,004	0		0
Year 3	2,005	0		0
Year 4	2,006	0		0
Year 5	2,007	0		0
2015 Compliance Year - Water into Distribution System				
<b>2015</b>		3,503		3,503
* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Source 3		
This water source is:				
<input type="checkbox"/>	The supplier's own water source			
<input type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1,996			0
Year 2	1,997			0
Year 3	1,998			0
Year 4	1,999			0
Year 5	2,000			0
Year 6	2,001			0
Year 7	2,002			0
Year 8	2,003			0
Year 9	2,004			0
Year 10	2,005			0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003			0
Year 2	2,004			0
Year 3	2,005			0
Year 4	2,006			0

Year 5	2,007		0
2015 Compliance Year - Water into Distribution System			
2015			0
* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document			
NOTES:			

**SB X7-7 Table 4-A: Volume Entering the Distribution**

<b>Name of Source</b>	Source 4
<b>This water source is:</b>	
<input type="checkbox"/>	The supplier's own water source
<input type="checkbox"/>	A purchased or imported source

Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System
--	-------------------------------------	--	---

10 to 15 Year Baseline - Water into Distribution System

Year 1	1,996		0
Year 2	1,997		0
Year 3	1,998		0
Year 4	1,999		0
Year 5	2,000		0
Year 6	2,001		0
Year 7	2,002		0
Year 8	2,003		0
Year 9	2,004		0
Year 10	2,005		0
Year 11	-		0
Year 12	-		0
Year 13	-		0
Year 14	-		0
Year 15	-		0

5 Year Baseline - Water into Distribution System

Year 1	2,003		0
Year 2	2,004		0
Year 3	2,005		0
Year 4	2,006		0
Year 5	2,007		0

2015 Compliance Year - Water into Distribution System

2015			0
* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document			

NOTES:

**SB X7-7 Table 4-A: Volume Entering the Distribution**

<b>Name of Source</b>	Source 5
<b>This water source is:</b>	
<input type="checkbox"/>	The supplier's own water source
<input type="checkbox"/>	A purchased or imported source

**SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)**

<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>		<b>Service Area Population</b> <i>Fm SB X7-7 Table 3</i>	<b>Annual Gross Water Use</b> <i>Fm SB X7-7 Table 4</i>	<b>Daily Per Capita Water Use (GPCD)</b>
<b>10 to 15 Year Baseline GPCD</b>				
Year 1	1996	62,529	18,921	270
Year 2	1997	64,026	18,835	263
Year 3	1998	65,558	17,455	238
Year 4	1999	66,914	18,960	253
Year 5	2000	69,095	20,636	267
Year 6	2001	73,140	19,859	242
Year 7	2002	77,422	21,736	251
Year 8	2003	81,955	22,409	244
Year 9	2004	86,753	24,245	249
Year 10	2005	91,832	25,923	252
<i>Year 11</i>	0	-	-	
<i>Year 12</i>	0	-	-	
<i>Year 13</i>	0	-	-	
<i>Year 14</i>	0	-	-	
<i>Year 15</i>	0	-	-	
<b>10-15 Year Average Baseline GPCD</b>				<b>253</b>
<b>5 Year Baseline GPCD</b>				
<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>		<b>Service Area Population</b> <i>Fm SB X7-7 Table 3</i>	<b>Gross Water Use</b> <i>Fm SB X7-7 Table 4</i>	<b>Daily Per Capita Water Use</b>
Year 1	2003	81,955	22,409	244
Year 2	2004	86,753	24,245	249
Year 3	2005	91,832	25,923	252
Year 4	2006	97,208	28,317	260
Year 5	2007	102,899	29,256	254
<b>5 Year Average Baseline GPCD</b>				<b>252</b>
<b>2015 Compliance Year GPCD</b>				
<b>2015</b>		128,005	20,831	<b>145</b>
NOTES:				



**SB X7-7 Table 6: Gallons per Capita per Day**  
*Summary From Table SB X7-7 Table 5*

10-15 Year Baseline GPCD	253
5 Year Baseline GPCD	252
2015 Compliance Year GPCD	145
NOTES:	

**SB X7-7 Table 7: 2020 Target Method***Select Only One*

Target Method		Supporting Documentation
<input checked="" type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
<input type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input type="checkbox"/>	Method 4	Method 4 Calculator

NOTES:

<b>SB X7-7 Table 7-A: Target Method 1</b> 20% Reduction	
10-15 Year Baseline GPCD	<b>2020 Target</b> GPCD
253	<b>202</b>
NOTES:	

**SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target**

5 Year Baseline GPCD From SB X7-7 Table 5	Maximum 2020 Target <sup>1</sup>	Calculated 2020 Target <sup>2</sup>	<b>Confirmed 2020 Target</b>
252	239	202	<b>202</b>

<sup>1</sup> Maximum 2020 Target is 95% of the 5 Year Baseline GPCD  
Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and  
corresponding tables for agency's calculated target. <sup>2</sup> 2020

NOTES:

**SB X7-7 Table 8: 2015 Interim Target GPCD**

Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	<b>2015 Interim Target GPCD</b>
202	253	<b>227</b>

NOTES:

SBX7-7 2020 Compliance Forms

**SB X7-7 Table 0: Units of Measure Used in 2020 UWMP\***

*(select one from the drop down list)*

Acre Feet

*\*The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.*

NOTES:

**SB X7-7 Table 2: Method for 2020 Population Estimate**

**Method Used to Determine 2020 Population**  
(may check more than one)

<input type="checkbox"/>	<b>1. Department of Finance (DOF) or American Community Survey (ACS)</b>
<input type="checkbox"/>	<b>2. Persons-per-Connection Method</b>
<input type="checkbox"/>	<b>3. DWR Population Tool</b>
<input checked="" type="checkbox"/>	<b>4. Other</b> DWR recommends pre-review
NOTES: MWA Population Forecast	



**SB X7-7 Table 3: 2020 Service Area Population**

**2020 Compliance Year Population**

<b>2020</b>	134,273
-------------	---------

NOTES:

**SB X7-7 Table 4: 2020 Gross Water Use**

Compliance Year 2020	2020 Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use*	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
	22,730	865		-		-	21,865

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

NOTES:

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

Complete one table for each source.

<b>Name of Source</b>		Groundwater	
<b>This water source is (check one) :</b>			
<input checked="" type="checkbox"/>	The supplier's own water source		
<input type="checkbox"/>	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System <sup>1</sup>	Meter Error Adjustment <sup>2</sup> <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
	18,978	-	18,978
<sup>1</sup> <b>Units of measure (AF, MG , or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.</b> <span style="float: right;"><sup>2</sup> <b>Meter Error Adjustment</b> - See guidance in Methodology 1, Step 3 of Methodologies Document</span>			
NOTES			

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

Complete one table for each source.

<b>Name of Source</b>		MWA R3	
<b>This water source is (check one) :</b>			
<input type="checkbox"/>	The supplier's own water source		
<input checked="" type="checkbox"/>	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System <sup>1</sup>	Meter Error Adjustment <sup>2</sup> <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
	3,752		3,752
<sup>1</sup> <b>Units of measure (AF, MG , or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.</b> <span style="float: right;"><sup>2</sup> <b>Meter Error Adjustment</b> - See guidance in Methodology 1, Step 3 of Methodologies Document</span>			
NOTES:			

**SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)**

2020 Gross Water <i>Fm SB X7-7 Table 4</i>	2020 Population <i>Fm</i> <i>SB X7-7 Table 3</i>	2020 GPCD
21,865	134,273	145

NOTES:

SB X7-7 Table 9: 2020 Compliance							
Actual 2020 GPCD <sup>1</sup>	Optional Adjustments to 2020 GPCD				2020 Confirmed Target GPCD <sup>1,2</sup>	Did Supplier Achieve Targeted Reduction for 2020?	
	Enter "0" if Adjustment Not Used			TOTAL Adjustments <sup>1</sup>			Adjusted 2020 GPCD <sup>1</sup> <i>(Adjusted if applicable)</i>
	Extraordinary Events <sup>1</sup>	Weather Normalization <sup>1</sup>	Economic Adjustment <sup>1</sup>				
145	-	-	-	-	145	202	YES
<sup>1</sup> All values are reported in GPCD							
<sup>2</sup> <b>2020 Confirmed Target GPCD</b> is taken from the Supplier's SB X7-7 Verification Form Table SB X7-7, 7-F.							
NOTES:							



# F

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## Appendix F - MWA R<sup>3</sup> Agreement

**WATER SUPPLY CONNECTION AGREEMENT**  
**REGIONAL RECHARGE AND RECOVERY PROJECT (R<sup>3</sup>)**

AGREEMENT made this 19<sup>th</sup> day of April, 2013, between the MOJAVE WATER AGENCY ("Agency") and the CITY OF VICTORVILLE ("Customer").

**WITNESSETH:**

IT IS HEREBY AGREED, in consideration of the mutual covenants of the parties, as follows:

1. Definitions. When used in this Agreement, the following terms shall have the meanings hereinafter set forth:

- a. "Agency" as used herein shall mean Mojave Water Agency.
- b. "Agency Law" shall mean the Mojave Water Agency Law, Chapter 97 of the Water Code Appendix, Statutes of 1959 of the State of California, as amended and as the same may be hereafter amended, supplemented re-enacted, or codified.
- c. "Agreement" as used herein shall mean this agreement for a water connection between Agency and Customer.
- d. "Contract" shall mean the contract entitled "Water supply Contract between the State of California Department of Water Resources and the Mojave Water Agency," dated June 22, 1963 as heretofore or hereafter amended.
- e. "Customer" as used herein shall mean the City of Victorville.
- f. "Connection Improvements" shall mean those facilities necessary to connect the Customer's water system to Turnouts 3 and 6 of the Regional Recharge and Recovery Project, as depicted and described in Exhibits One, Two, Three, Four and Five.
- g. "General Manager" shall mean the General Manager of the Mojave Water Agency.
- h. "Judgment" shall mean the Judgment in City of Barstow, et al. v. City of Adelanto, et al., Superior Court, Riverside County, Case No. 208568.



- i. "Ordinance No. 9" as used herein shall mean the Ordinance of the Mojave Water Agency Establishing the Rules and Regulations for the Sale and Delivery of State Project Water.
- j. "Points of Connection" as used herein shall mean the outlet flange of the magnetic flow meter shown as item 4 on Exhibit Five, Details 1 and 2.
- k. "Potable Water" as used herein shall mean water from any source which has been investigated by the California Department of Public Health, and which has been approved for human consumption.
- l. "R<sup>3</sup> Project" as used herein shall mean the Mojave Water Agency Regional Recharge and Recovery Project, including the Connection Improvements as described herein.
- m. "State Water Project" shall mean water made available to the Agency by the State of California pursuant to the terms of the Contract.
- n. "Year" means a calendar year.

2. General Purpose and Requirements.

2.1 Customer Connection. The Connection Improvements shall be constructed and paid for by the Agency for use solely for the Customer. Connections will be provided at Turnout 3 at Victorville Water District's Plant 10 on Pinon Avenue, as shown on Exhibits One and Three, and at Turnout 6 on Mesa View Drive, as shown on Exhibits Two and Four ("Points of Connection").

2.2 Environmental Requirements. The Agency is a public agency and is aware of the requirements of the California Environmental Quality Act ("CEQA") and its implementing guidelines, and will comply with the CEQA and its implementing guidelines.

3. Financial Considerations.

3.1 All costs for design, construction and startup of the Connection Improvements will be paid in full by the Agency and there will be no cost to the Customer.

4. Facility Ownership.

4.1 Facilities Included; Ownership by Agency and Customer. The Connection Improvements shall include the facilities for delivery of potable water from the Agency's R<sup>3</sup> Project to the Points of Connection described in paragraph 2.1 herein.

The Agency will own, operate and maintain all portions of the Connection Improvements up to the Points of Connection, as defined herein, including the main turnout structure in its entirety, and will have full un-restricted access to these facilities. The Customer will own, operate and maintain all piping, equipment and ancillary facilities related to the turnout on the Customer's side of the Points of Connection.

5. Design Considerations.

5.1 Design and Operating Criteria. The Agency's facilities have been designed and planned in close coordination with the Customer's staff to meet Customer's water service requirements to the maximum extent feasible and to allow for maximum flexibility for use in different modes of operation. The Agency's facilities have been designed to deliver potable water to the Customer's Points of Connection at a reasonably constant minimum water pressure of approximately 40 psi. All deliveries to the Customer will meet the applicable standards of the State of California Department of Public Health Drinking Water Services Division.

5.2 Measurement. All water furnished pursuant to this Agreement shall be measured by the Agency at the Points of Connection.

5.3 Back-Flow. Back-flow prevention is not required by the Department of Public Health when connecting two potable water systems with valid domestic water supply permits, however, the Connection Improvements have been designed and constructed to provide a "check feature" at the Cla-Val electronic control valve (Exhibit Five, Details 1 and 2, Item 6) on the Customer's side of the Points of Connection. The Customer shall maintain the control valve such that the check feature remains operable during the life of this Agreement.

5.4 Flow Control Devices and Delivery Rates. The Connection Improvements include an electronic control valve to allow the Customer to control the rate of flow at the Points of Connection. Deliveries of R<sup>3</sup> Project water will be made at flow rates as determined by the Customer, but should not exceed the nominal flow rate shown on Exhibit Six, Schedule of Delivery Capacities for Project Participants, unless approved in advance by the Agency's Director of Operations.

5.5 Pressure Surges (Water Hammer). The R<sup>3</sup> Project has been designed to withstand the effects of pressure surge, however, the Customer shall make every effort to minimize sudden fluctuations in flow rates at the Points of Connection.

6. Operation and Maintenance.

6.1 Maintenance of Connection Improvements. Maintenance of the Connection Improvements will be as described in paragraph 4.1 herein.

6.2 Limits on Agency Responsibility. The Agency has no responsibility in the maintenance and operation of Customer's water system beyond the Points of

Connection. Customer shall be responsible and liable for its own water system. Customer agrees to accept and consent to such conditions of pressure and service as may from time to time exist under current operating practices prevailing within the Agency, at the location of the Points of Connection, and Customer agrees to hold Agency harmless from any and all damages caused by or arising out of low, high, or fluctuating pressures or interruption of service which are beyond Agency's reasonable control. Delivery of water pursuant to this Agreement, except as may be specifically provided herein, shall be in accordance with the rules, regulations and charges of the Agency as they may from time to time exist and apply to all the customers of the Agency. This Agreement and the rights and obligations of the parties hereunder shall be subject to the Agency Law as it now exists and as it may be hereafter amended or codified by the Legislature of the State of California.

6.3 Delivery of Water. All facilities in the Connection Improvements up until the Points of Connection necessary to accommodate water delivery are the responsibility of the Agency and shall be operated by Agency employees only.

6.4 Limitations on Service. Due to the nature of the Agency's facilities and the potential modes of service required, the Agency cannot guarantee any specific level of pressure; however, the R<sup>3</sup> Project has been designed to deliver potable water to the Customer's Points of Connection at a reasonably constant minimum water pressure of approximately 40 psi. There are no limits regarding time-of-use, either by time of year or time of day.

6.5 Coordination of Water Deliveries. Water orders must be placed with the Agency Director of Operations a minimum of one week in advance of actual delivery. Delivery of water shall continue until the Customer requests the Agency to terminate the flow, and gives the Agency a minimum of one hour in which to do so.

## 7. Agreement Administration

7.1 General Terms of Service. All water deliveries made pursuant to Ordinance No. 9 shall be subject to all of the terms and conditions of the Agency's Contract. **CUSTOMER SHOULD USE CAUTION IN THE ISSUANCE OF CAN OR WILL SERVE LETTERS FOR ANY LAND USE ENTITLEMENT BASED UPON STATE WATER PROJECT WATER.**

7.2 Water Flow Measurement and Meter Accuracy. All determinations relative to the measuring of water shall be made by the Agency and, upon request by the Customer, the accuracy of such measurement shall be investigated by the Agency in the manner set forth in Ordinance No. 9. The Customer has a right to audit the Agency's measurement determinations. Any error appearing therein will be adjusted pursuant to conditions set forth in Ordinance No. 9. In the event of a disagreement, the Agency and Customer agree to submit the Agency's accuracy tests to a mutually agreed upon third party and to abide by its determination. Customer will ensure that all end-users of water provided under this Agreement are properly metered.

7.3 Water Delivery Subject to Annual Approval and is Interruptible. All water supplied by the Agency is annually determined and shall be served upon an interruptible basis.

7.4 No Rights to Water Vested with Customer. The Customer shall not obtain any vested rights upon the sale and delivery of water apportioned in accordance with Ordinance No. 9, nor are any such rights inferred by virtue of an Agency decision to provide water to Customer in a specific year.

7.5 Water Deliveries required by the Mojave Basin Area Judgment and ID-M Contract. Customer acknowledges that contractual requirements under the Judgment and contractual requirements between the Agency and the Improvement District "M" have priority over the sale of water pursuant to Ordinance 9.

7.6 Water Rates. All water rates for water service made by the Agency shall be established by resolution of the Board of Directors of the Agency pursuant to Ordinance No. 9 and the Mojave Water Agency Act. Such rates for water service may not exceed the estimated cost of providing the service for which the water rate is charged. Such rate will be reasonable, fair and equitable in nature and proportionately representative of the costs incurred by the Agency.

7.7 Payment of Water Charges. Water charges are due and payable at the Agency office on the date a bill is mailed to the Customer and shall be delinquent 30 days thereafter. Service may be discontinued without further notice if payment of the water charge is not made prior to the date such charge becomes delinquent.

## 8. Agreement Term.

8.1 Termination Date. This Agreement shall be for a term of one (1) year, and shall automatically renew each year, if Customer is in compliance with its terms, for a period of thirty (30) years from the date hereof. If Agency reasonably determines Customer is not in compliance, Customer must be given a reasonable opportunity to comply before the Agreement terminates. This Agreement may be terminated by the Customer earlier by providing a written notice at least 30 days prior to the desired date of termination. Upon any termination, the Connection Improvements will remain the property of the Agency, and Customer will have no further responsibility under this Agreement, or for ongoing operations and maintenance of the Connection Improvements.

8.2 Change in Party Status. In the event of dissolution, consolidation or merger of the Customer or the Agency, all of the terms and conditions of this Agreement shall bind the surviving entity or successor.

9. Indemnity.

9.1 Defense of Agreement. The Customer shall defend, indemnify, and hold harmless Agency and its agents, officers, and employees from any claim, action, or proceeding against Agency or its agents, officers, or employees relating to efforts to attack, set aside, void, or annul this Agreement, including without limitation a CEQA claim. To the extent that Agency uses any of its resources, with the prior approval in writing of Customer, in responding to such claim, action, or proceeding, Customer will reimburse Agency upon demand. Such resources include, but are not limited to staff time, court costs, Agency counsel's time at their regular rate for Agency work, or any other direct or indirect cost associated with responding to the claim, action or proceedings. These obligations shall be binding on Customer's successors and assigns, and Customer shall so obligate all successors and assigns.

9.2 Indemnification for Water Connection and Water Delivery. Except with respect to (1) the Agency's own negligence or willful misconduct and/or (2) an occurrence on the Agency's side of the Points of Connection not resulting from action(s) of the Customer or its agents, contractors or assigns, and which is/are the direct cause of damage or injury, the Customer shall fully indemnify and hold harmless the Agency and its officers, agents and employees against liability for damages of any nature whatsoever, including but not limited to, property damage, personal injury, or death, arising from (3) the action(s) of Customer or any person under Customer's control, including without limitation the Customer's agents, contractors and assigns; (4) claims made by Customer's own customers and other end users of the water provided by Customer, arising out of, or resulting from, or made in connection with this Water Supply Connection Agreement and the Agency's provision of water to Customer for its use and the use of Customer's own customers; (5) the Customer's control of the rate of flow at the delivery point; or (6) an occurrence on the Customer's side of the Points of Connection not resulting from action(s) of the Agency or its agents, contractors or assigns.

9.3 Claim Notification. The Agency will, within a reasonable period of time, notify the Customer of any such claim, action, or proceeding covered by this Section 9. If the Agency should fail to cooperate in the defense, the Customer shall not thereafter be responsible to defend, indemnify, and hold harmless the Agency and its agents, officers, and employees pursuant to this Section 9.

9.4 Settlement Approval. The Customer shall not be required to pay or perform any settlement of such claim, action, or proceeding unless the Customer approves the settlement in writing.

9.5 Notices. All notices to the Customer under this Agreement shall be deemed valid and effective five (5) calendar days following deposit in the United States mail, postage prepaid, be certified and/or registered mail, addressed to:

Doug Robertson, City Manager  
City of Victorville  
14343 Civic Drive  
P O Box 5001  
Victorville, CA 92392-5001

Andre de Bortnowsky, Esq.  
Green de Bortnowsky & Quintanilla LLP  
23801 Calabasas Road, Suite 1015  
Calabasas , California 91302-1595

Eric L. Garner  
Best Best & Krieger LLP  
3750 University Avenue  
P O Box 1028  
Riverside, California 92502

All notices to the Agency under this Agreement shall be deemed valid and effective when personally served upon Agency Counsel and General Manager or upon deposit in the United States mail, postage prepaid, by certified and/or registered mail, addressed to:

William J. Brunick  
Brunick, McElhaney & Kennedy  
1839 Commercenter West  
P O Box 6425  
San Bernardino, California 92412

Kirby Brill  
General Manager  
Mojave Water Agency  
13846 Conference Center Drive  
Apple Valley, California 92307

Except as provided otherwise, all notices that are required either expressly or by implication to be given by any party to the other under this Agreement shall be signed for the Agency and for the Customer by such officers and persons as they may from time to time, authorize in writing to so act.

9.6 Remedies Not Exclusive. Remedies provided in this Agreement for enforcement of its terms are intended and shall be construed as cumulative rather than exclusive and shall not be deemed to deprive the party using the same from also using any other remedies provided by this Agreement or by law.

9.7 Amendments. This Agreement may be amended or supplemented at any time by mutual written agreement of the Parties in any manner that may be consistent with the applicable law, subject to Paragraph 9.12 of this Agreement. In amending or supplementing this Agreement, the Agency will bear in mind that substantial uniformity of Agreements between its various customers and the desirability to the main contracting concepts and principles that are to be used. The Agency will, therefore, attempt to maintain uniformity between its various customers' Agreements in such respects.

9.8 Opinions and Determinations. Where the terms of this Agreement provide for action to be based upon opinion, judgment, approval, review, or determination of either party hereto, such terms are not intended to be and shall never be construed as permitting such opinion, judgment, approval, review, or determination to be arbitrary, capricious, or unreasonable. In the event legal action is brought to enforce or determine the rights of either party under this Agreement, the prevailing party in such action shall be entitled to court costs and reasonable attorney's fees.

9.9 Waiver of Rights. Any waiver at any time by either party hereto of its rights with respect to a breach or default, or any other matter arising in connection with this Agreement shall not be deemed to be a waiver with respect to any other breach, default or matter.

9.10 Transfer and Assignments. Except as provided in Section 8.2 hereof, the Customer shall not have the right to sell, assign or transfer this Agreement and any and all of its rights, duties and obligations hereunder, in whole or in part, to any person or entity at any time during the term of this Agreement, without prior written approval of the Agency.

9.11 Inspection of Books and Records. The proper officers or agents of the Customer shall have full and free access at all reasonable times to the account books and official records of the Agency at the Agency address set forth below insofar as the same pertain to the matters and things provided for in this Agreement, with the right at any time during office hours to make copies thereof at the Customer's expense, and the proper representatives of the Agency and designated personnel and agents shall have similar rights to inspect the account books and records of the Customer at the Customer's address set forth below as they pertain to the Agency.

Mojave Water Agency	City of Victorville
13846 Conference Center Drive	P O Box 5001
Apple Valley, CA 92307	Victorville, CA 92393-5001
Telephone: (760) 946-7000	Telephone: (760) 955-5000

9.12 Uniformity of Provisions. It is intended by the parties that this Agreement shall be uniform as to form and content as between the Agency and the Customer and other customers served by the Agency and for this reason any subsequent amendments and supplements hereof that may be entered into will be made to the contracts of all other customers on an equal basis, subject to Customer's approval which shall not be unreasonably withheld. In the event Customer declines to approve subsequent amendments as to the form and content of the Agreement, Agency shall have the right to terminate the Agreement upon giving 30-days written notice to the Customer.

9.13 Controlling Law. If there is any conflict between the provisions of this Agreement and Ordinance No. 9 or the Judgment, Ordinance No. 9 and the Judgment are controlling.



IN WITNESS WHEREOF, this Agreement has been executed to be effective as of the date and year first above written.

CITY OF VICTORVILLE

Date: April 24, 2013

By: James L. Cox  
Title: Mayor

MOJAVE WATER AGENCY

Date: April 19, 2013

By: AR  
Title: General manager

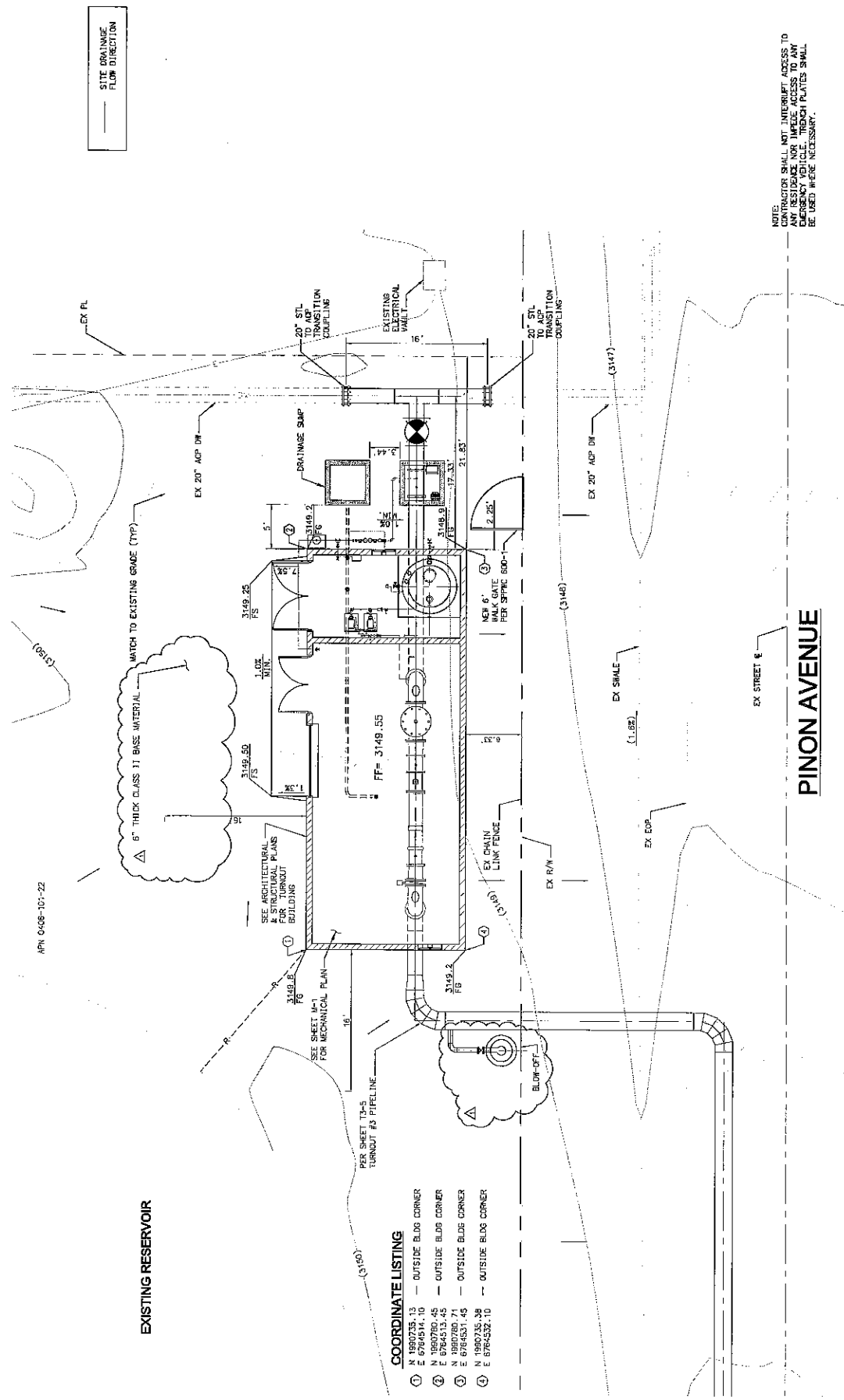
APPROVED AS TO FORM:

GREEN, DE BORTNOWSKY & QUINTANILLA, LLP

By: [Signature]  
City Attorney

CHUCK BUQUET

By: [Signature]  
Risk Manager



— SITE DRAINAGE  
FLOW DIRECTION

NOTES:  
CONTRACTOR SHALL NOT INTERFERE ACCESS TO  
ANY RESIDENCE NOR IMPEDE ACCESS TO ANY  
EMERGENCY VEHICLE. TRENCH PLATES SHALL  
BE USED WHERE NECESSARY.



APN 0449-101-22

EXISTING RESERVOIR

**COORDINATE LISTING**

- ① N 1960776.13 — OUTSIDE BLDG CORNER
- ② E 67824514.10 — OUTSIDE BLDG CORNER
- ③ N 1960780.45 — OUTSIDE BLDG CORNER
- ④ E 6784513.45 — OUTSIDE BLDG CORNER
- ⑤ N 1960780.71 — OUTSIDE BLDG CORNER
- ⑥ E 6784531.45 — OUTSIDE BLDG CORNER
- ⑦ N 1960735.38 — OUTSIDE BLDG CORNER
- ⑧ E 6784532.10 — OUTSIDE BLDG CORNER

PINON AVENUE

3. CONTRACTOR TO LOCATE ALL SERVICE  
LATERALS PRIOR TO CONSTRUCTION.  
PROTECT IN PLACE.

NOTES:  
1. CONTRACTOR TO VERIFY ALL SERVICE  
LOCATIONS PRIOR TO CONSTRUCTION.  
2. IF CONSTRUCTION OCCURS NEAR PLAN  
DATE, CALL FROM THE DATE OF THE PLAN  
EXISTING UTILITIES SHALL BE THE RESPONSIBILITY  
OF THE CONTRACTOR.

UNDERGROUND SERVICE ALERT  
CALL-TOLL FREE  
811  
FOR ALL DEPT  
UTILITIES

REV.	DATE	BY	DESCRIPTION

PREPARED UNDER THE SUPERVISION OF:  
EVERY L. MILLER  
RECEIVED DATE: \_\_\_\_\_  
DATE: \_\_\_\_\_

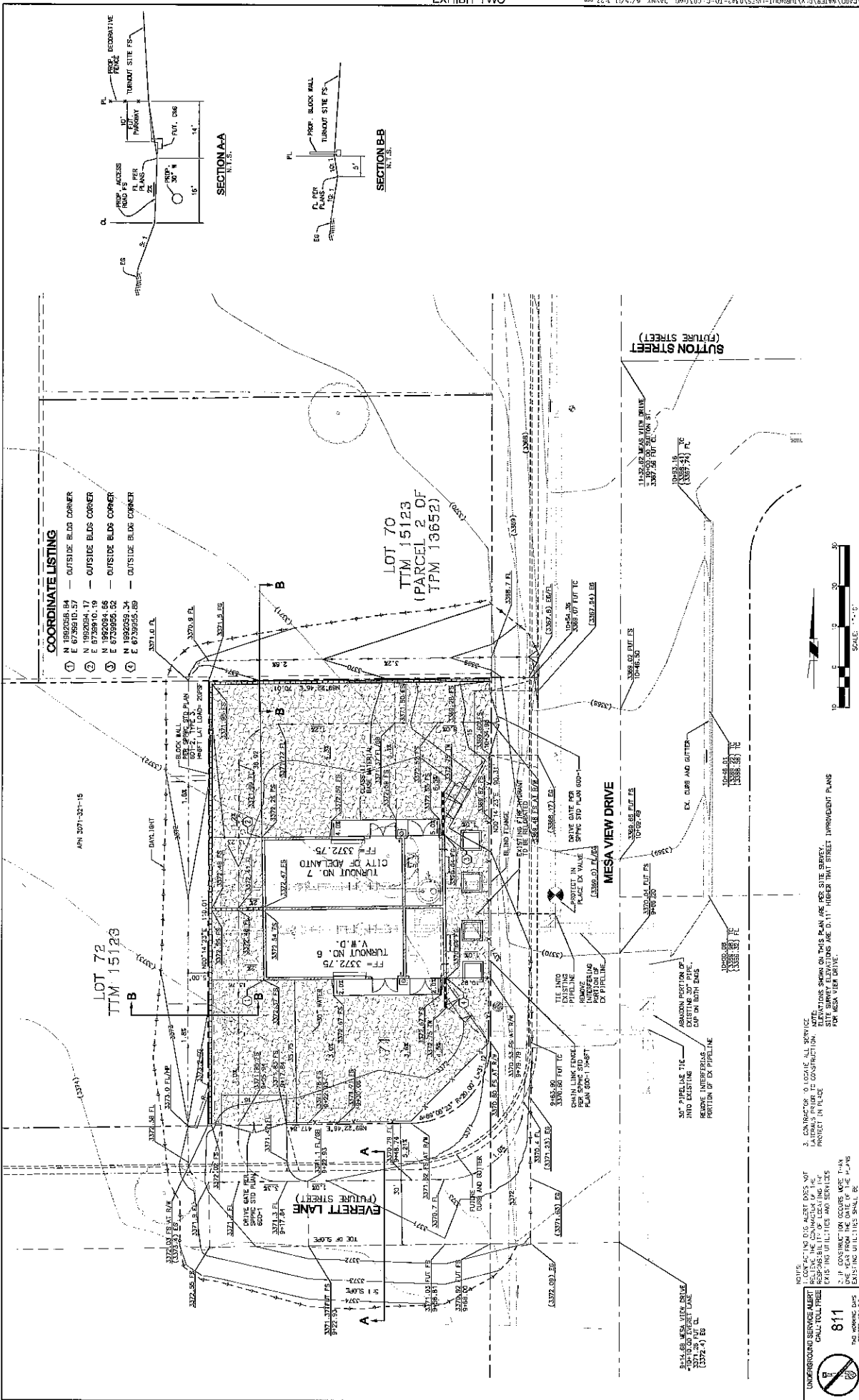


**Mojave Water Agency**  
2250 REDWOOD AVENUE DRIVE  
ARLING VALENTI, CA 92302-2642  
WWW.MOJAVEWATER.AG  
APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_

**RBF CONSULTING**  
PLANNING • DESIGN • IMPLEMENTATION  
3000 W. BROADWAY, SUITE 200  
CANAAN, CALIFORNIA 92583  
WWW.RBFCONSULTING.COM

**MOJAVE WATER AGENCY**  
WATER PROJECT  
TURNOUTS 3, 4, 8 & 7  
PHASE 1 FACILITIES  
SITEGRADING PLAN  
TURNOUT #3

DATE: 11/19/09  
SHEET: C-1  
OF: 19



**NOTICE:** CONTRACTOR IS ALERT DOES NOT REMOVE EXISTING UTILITIES SHALL BE RELOCATED TO THE PROPOSED LAYOUT.

**UNDERGROUND SERVICE ALERT:** CALL 811 BEFORE YOU DIG.

**811**

3. CONTRACTOR TO LOCATE ALL SERVICE UTILITIES PRIOR TO CONSTRUCTION. NOTE: ELEVATIONS SHOWN ON THIS PLAN ARE FOR SITE SURVEY. ELEVATIONS ARE TO THE CENTERLINE OF THE PIPELINE UNLESS OTHERWISE NOTED. PROTECT IN PLACE.

4. IF CONTRACTOR REMOVES EXISTING UTILITIES FROM THE DATE OF THE PLANS EXISTING UTILITIES SHALL BE RELOCATED TO THE PROPOSED LAYOUT.

**REVISIONS:**

NO.	DATE	BY	DESCRIPTION

DESIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DRAWN: \_\_\_\_\_  
 REVIEWED: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

PREPARED UNDER THE SUPERVISION OF:  
 CURRY L. MILLER, RCE, SITS, DATE: \_\_\_\_\_

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

**Major Agency**  
 Major Agency  
 700 S. GARDEN ST., SUITE 200  
 ANAHEIM, CA 92805  
 WWW.MAJORAGENCY.COM

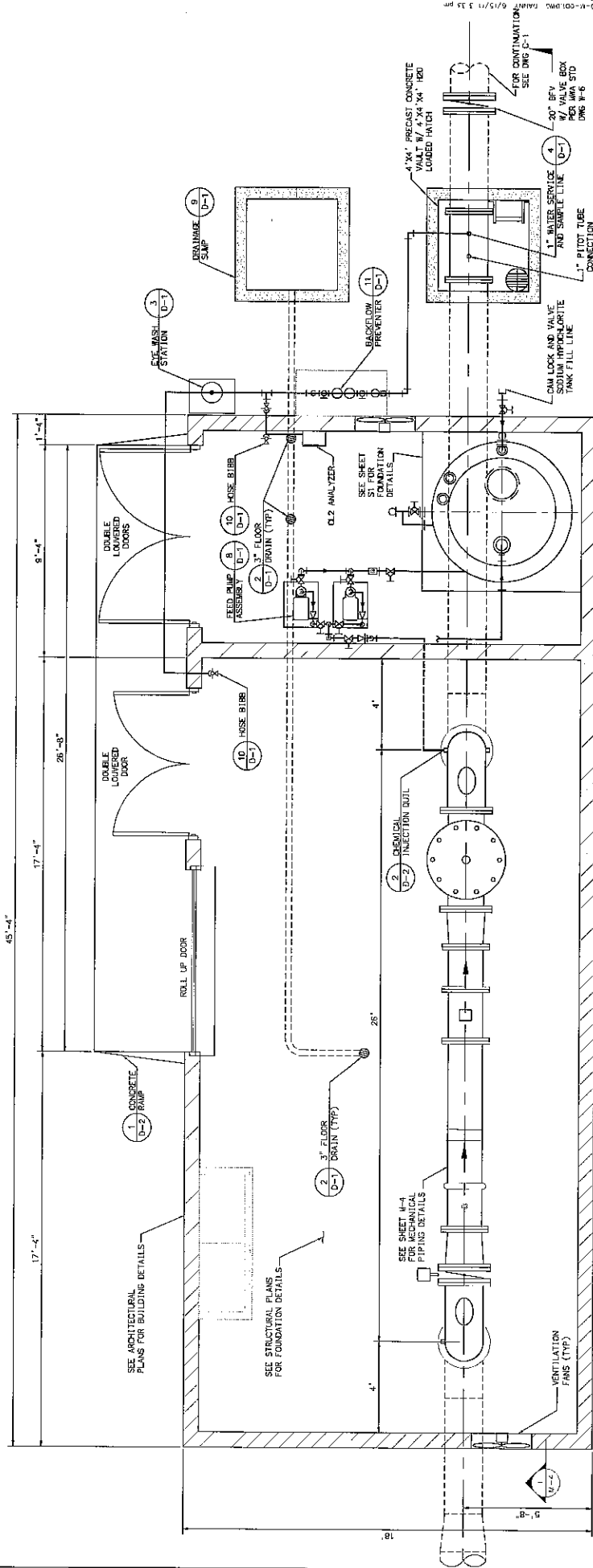
**RBF CONSULTING**  
 RBF CONSULTING  
 10000 WILSON BLVD., SUITE 100  
 WESTLAKE, CA 91361  
 WWW.RBFCONSULTING.COM

**MOJAVE WATER AGENCY**  
 MOJAVE WATER AGENCY  
 TURNOUTS 3, 4, 6 & 7  
 PHASE 1 FACILITIES  
 SITE/GRADING PLAN TURNOUT # 6 & 7

PLANNED: \_\_\_\_\_ DESIGN: \_\_\_\_\_  
 SUPERVISOR: \_\_\_\_\_  
 PROJECT NO.: \_\_\_\_\_

SCALE: 1" = 30'

DATE: \_\_\_\_\_



PLAN  
SCALE: 1/2"=1'-0"

NOTES:  
 1. CONTRACTOR TO LOCATE ALL SERVICE LATERALS PRIOR TO CONSTRUCTION.  
 2. CONSTRUCTION OCCURS UNDER MAIN ONE YEAR FROM THE DATE OF THE PLANS.  
 3. CONSULT ALL CITY AND COUNTY ORDINANCES AND REGULATIONS.  
 4. ALL MATERIALS SHALL BE APPROVED BY THE LOCAL HEALTH DEPARTMENT.

REV.	DATE	BY	DESCRIPTION	APPROVED	DATE	JOB NUMBER

DESIGNED BY: [ ]  
 DRAWN BY: [ ]  
 CHECKED BY: [ ]  
 REVISIONS: [ ]  
 PREPARED UNDER THE SUPERVISION OF:  
 EMMY L. MILLER      REG. 58118      DATE: [ ]

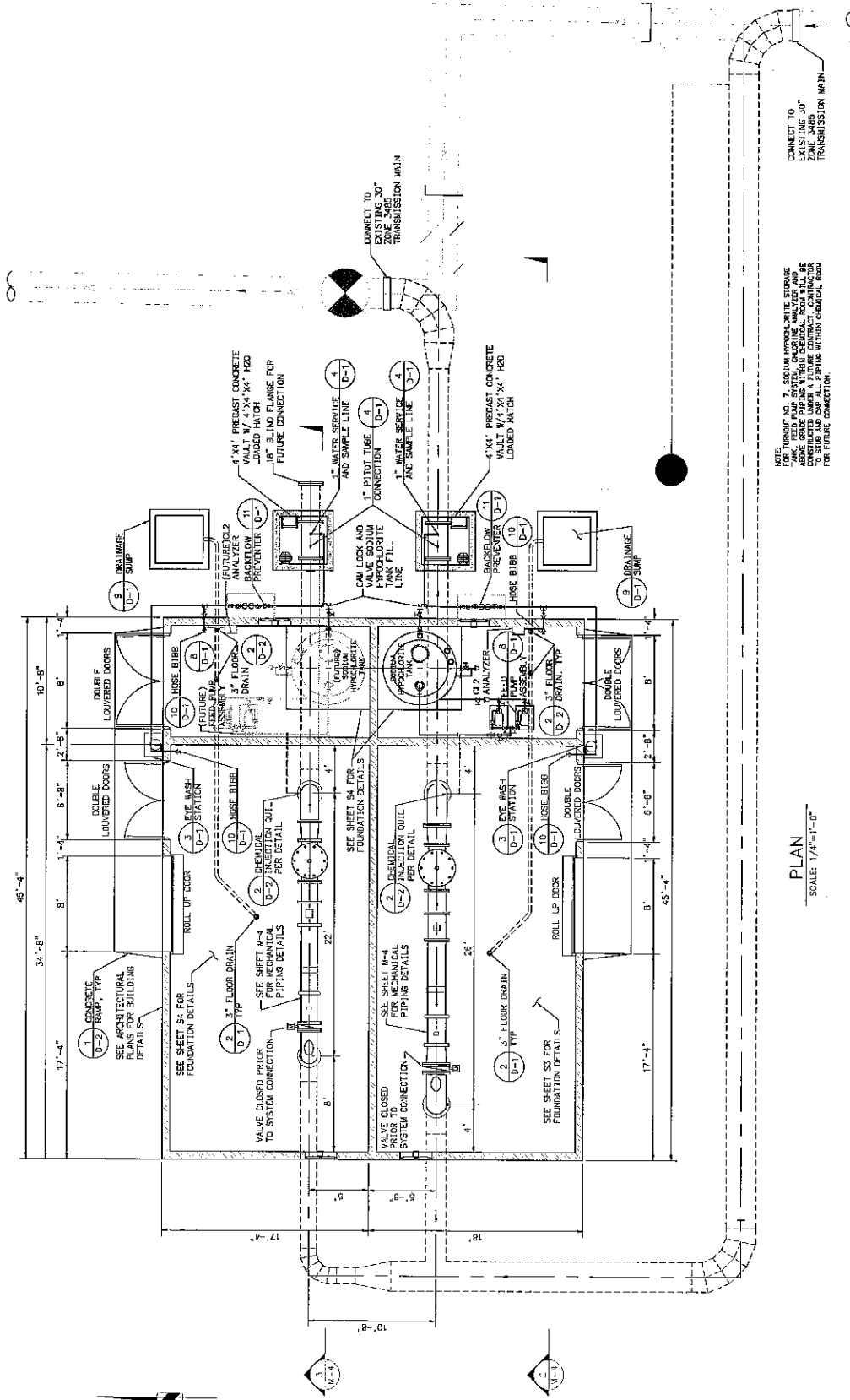
2550 HEADQUARTERS DRIVE  
 FORTY-FIVE VALLEY, CA 92304-3642  
 WWW.MOJAVEWATER.COM  
 AERIFORM  
 SERT MARTIN      REG. 31745      DATE: [ ]

**Mojave Water Agency**

**RBF CONSULTING**

PLANNING • DESIGN • CONSTRUCTION  
 3000 GARDEN GROVE AVENUE  
 ANAHEIM, CA 92806 • FAX: 714/944-1100

MOJAVE WATER AGENCY ANAHEIM, CALIFORNIA	GRADING
TURNOUTS 3, 4, 8 & 7 PHASE 1 FACILITIES	M-1
MECHANICAL PLAN—TURNOUT 3	SHEET 22 OF 80



NOTE:  
FOR TURNOUT NO. 7, SODIUM HYDROCARBONATE STORAGE TANK, FIELD PAID SPECIAL, DURING ANALYZER AND BACKFLOW PREVENTER CONSTRUCTION, CONTRACTOR SHALL CONSTRUCT LATER A FUTURE CONTRACT, CONTRACTOR SHALL PROVIDE PIPING WITHIN CHUTE, READY FOR FUTURE CONNECTION.

PLAN  
SCALE: 1/4"=1'-0"

UNDERGROUND SERVICE ALERT  
CALL TOLL FREE  
811  
BEFORE ANY EXCAVATION OR  
INSTALLATION OF UNDERGROUND UTILITIES

CONTRACTOR TO VERIFY ALL SERVICES  
BEFORE THE COMMENCEMENT OF THE  
WORK AND TO NOTIFY THE UTILITY OWNERS  
AND PROVIDES  
IF CONSTRUCTION BEFORE WORK BEGINS  
ONE WEEK FROM THE DATE OF THE PLANS  
EXISTING UTILITIES SHALL BE  
INDICATED BY THE UTILITY OWNERS.

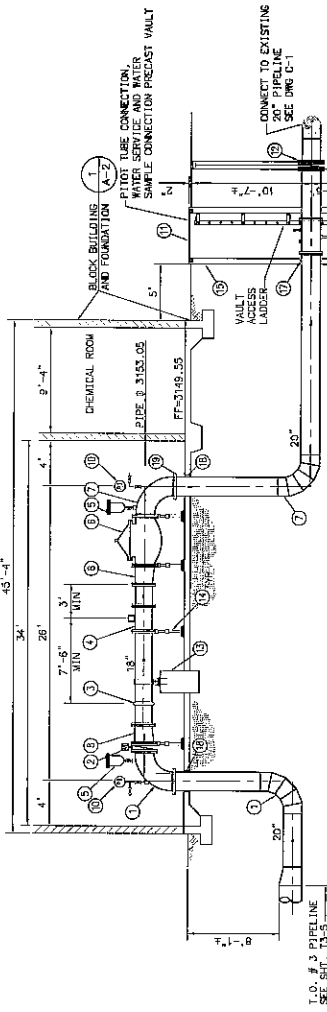
REV.	DATE	DESCRIPTION	APPROVED	DATE	JOB NUMBER

PREPARED UNDER THE SUPERVISION OF:  
STEWART L. HULLER  
DATE: 05/02/2012

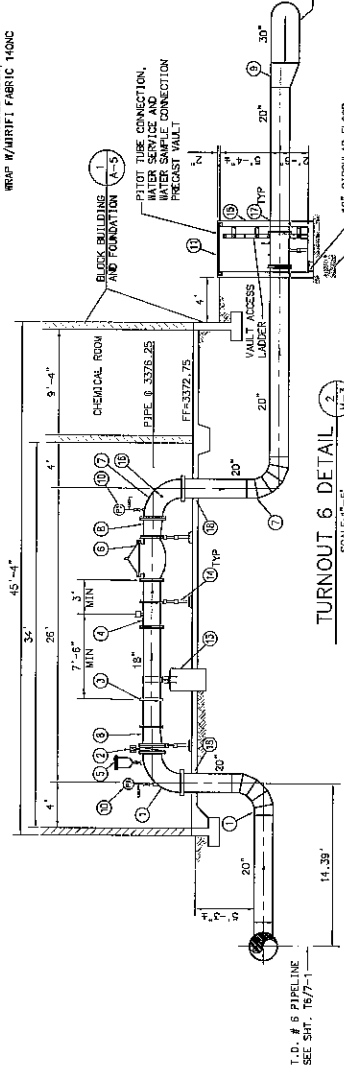
**Mojave Water Agency**  
2430 HEADQUARTERS DRIVE  
MURFRESBORO, TN 37055  
www.mojavewater.com  
APPROVED: GERT MUEHN  
REC. 31745 DATE

**RBE CONSULTING**  
PLANNING • DESIGN • LIGHTING  
CONSTRUCTION ADMINISTRATION  
www.rbeconsulting.com  
APPROVED: [Signature]  
REC. 31745 DATE

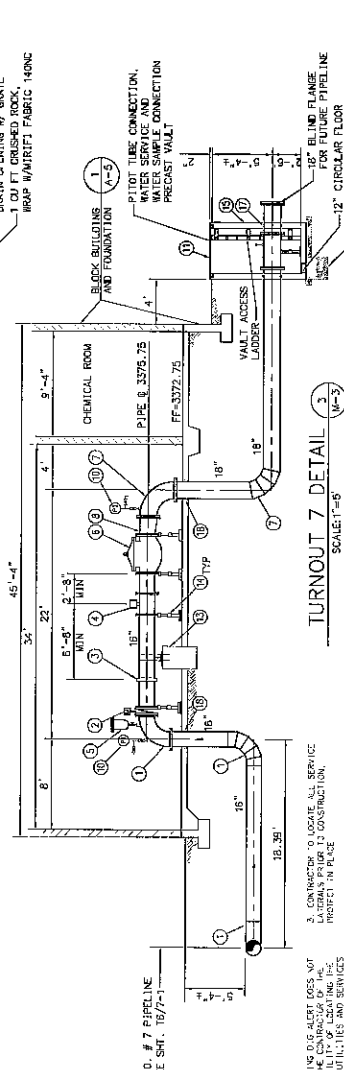
PROJECT	MOJAVE WATER AGENCY TURNOUTS 3, 4, 6 & 7 PHASE 1 FACILITIES
DRAWING	M-3 SHEET 24 OF 80



TURNOUT 3 DETAIL  
SCALE 1"=4'



TURNOUT 6 DETAIL  
SCALE 1"=4'

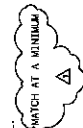


TURNOUT 7 DETAIL  
SCALE 1"=4'

ITEM	DESCRIPTION	TD-3	TD-6	TD-7
1	90° FULLY RESTRAINED BEND	20"	20"	18"
2	MOTOR OPERATED BUTTERFLY VALVE	20"	20"	18"
3	VICTALIC COUPLING	18"	18"	18"
4	MAGNETIC TYPE FLOW METER	18"	18"	18"
5	COMBINATION AIR VALVE PER DETAIL 1 ON D1	4"	3"	3"
6	ELECTRONIC CONTROL VALVE CJA-VAL MODEL 131	20"	20"	18"
7	90° FULLY RESTRAINED BEND	20x18	20x18	18x16
8	ECCENTRIC REDUCER	-	300X20	-
9	ECCENTRIC REDUCER	-	300X20	-
10	PRESSURE INDICATOR / TRANSMITTER WITH SAMPLE STATION PER DETAIL 4 ON DING D-2	-	-	-
11	48"x48" LOGGABLE HDG ALUMINUM ACCESS HATCH	-	-	-
12	20" BTV W/ VALVE BOX PER DING W-6	-	-	-
13	TRUSS SUPPORT PER DING W-43	-	-	-
14	48"x48" PRECAST CONCRETE VAULT W/ ACCESS LADDER	-	-	-
15	CHEMICAL INJECTION MOUNT PER DETAIL 2 ON DING D-2	-	-	-
16	PIPE PENETRATION PER DETAIL 7 ON D1 (TYP)	-	-	-
17	FLOOR PENETRATION PER DETAIL 7 ON D2 (TYP)	-	-	-
18	ORIFICE PLATE WITH 11.8" BORE	-	-	-

NOTES ABOVE VALID FOR THIS SHEET ONLY

1. ALL ABOVE GROUND PIPE AND FITTINGS TO BE EPXY LINED AND COATED STEEL.
2. ALL BURIED PIPE AND FITTINGS TO BE GALV STEEL.
3. SEE SHEET 16/7-1 FOR PIPING PROFILE.
4. ALL FITTINGS SHALL BE AT A MINIMUM PRESSURE CLASS OF UPSTREAM PIPELINE.



CONNECT TO EXIST 30" PIPELINE  
(SEE SHEET 16/7-1)

12" CIRCULAR FLOOR DRAIN OPENING W/ GRATE  
1 CU FT CRUSHED ROCK  
WRAP W/ AIRIFT FABRIC 140NC

12" CIRCULAR FLOOR DRAIN OPENING W/ GRATE  
1 CU FT CRUSHED ROCK  
WRAP W/ AIRIFT FABRIC 140NC

12" CIRCULAR FLOOR DRAIN OPENING W/ GRATE  
1 CU FT CRUSHED ROCK  
WRAP W/ AIRIFT FABRIC 140NC

NOTES:  
1. CONTRACTOR TO LOCATE ALL SERVICE LATERALS PRIOR TO CONSTRUCTION.  
2. IF CONSTRUCTION OCCURS WITHIN ONE YEAR FROM THE DATE OF THE PLANS EXISTING UTILITIES SHALL BE RELOCATED AT THE CONTRACTOR'S EXPENSE.

UNDERGROUND SERVICE ALERT  
CALL 811  
BEFORE ANY EXCAVATION OR CONSTRUCTION

		DESIGNED: _____ DRAWN: _____ REVISED: _____ JOB NUMBER: S610042 APPROVED: _____ DATE: _____	PREPARED UNDER THE SUPERVISION OF: CHAD L. MILLER REG. STATUS: _____ DATE: _____
		2348 REDWOOD AVENUE SUITE 100 RIVERSIDE, CA 92507 WWW.MOJAVEWATER.AGENCY	
MOJAVE WATER AGENCY WATER SERVICES TURNOUTS 3, 6 & 7 PHASE 1 FACILITIES		MECHANICAL SECTIONS - TURNOUTS 3, 6 & 7 SHEET 25 OF 60	

# EXHIBIT SIX

## Regional Recharge and Recovery Project Phase 1 Schedule of Delivery Capacities for Project Participants June 15, 2012

Annual Amount Approved for Delivery Via W. Conveyance System (acre-feet per year)	Capacity Available to Hesperia Turnout 4		Capacity Available to VWD Turnouts 3 or 6		Capacity Available to Adelanto Turnout 7	
	af per year	cfs	af per year	cfs	af per year	cfs
0	0	0	0	0	0	0
1,000	246	0.41	523	0.88	231	0.39
2,000	492	0.83	1,046	1.76	462	0.78
3,000	738	1.24	1,569	2.64	692	1.16
4,000	985	1.65	2,092	3.52	923	1.55
5,000	1,231	2.07	2,615	4.40	1,154	1.94
6,000	1,477	2.48	3,138	5.27	1,385	2.33
7,000	1,723	2.90	3,662	6.15	1,615	2.71
8,000	1,969	3.31	4,185	7.03	1,846	3.10
9,000	2,215	3.72	4,708	7.91	2,077	3.49
10,000	2,462	4.14	5,231	8.79	2,308	3.88
11,000	2,708	4.55	5,754	9.67	2,538	4.27
12,000	2,954	4.96	6,277	10.55	2,769	4.65
13,000 and above	3,200	5.38	6,800	11.43	3,000	5.04

**Note:** Capacities at respective turnouts can be interpolated using tabulated values for actual delivery amounts between 0 and 13,000 acre-feet per year.







---

## Appendix G - Mojave Basin Area Judgment

**JUDGMENT AFTER TRIAL**

**JANUARY 10, 1996**

**MOJAVE BASIN AREA ADJUDICATION  
CITY OF BARSTOW, ET AL V. CITY OF ADELANTO, ET AL  
RIVERSIDE COUNTY SUPERIOR COURT CASE NO. 208568**



CHAMBERS OF  
VICTOR MICELI  
JUDGE OF THE SUPERIOR COURT

**Superior Court**  
STATE OF CALIFORNIA  
COUNTY OF RIVERSIDE

COURTHOUSE  
4050 MAIN STREET  
RIVERSIDE, CALIFORNIA 92501

January 10, 1996

TO: ALL PARTIES LISTED ON THE ATTACHED MAILING LIST  
FROM: E. MICHAEL KAISER, JUDGE *by ss*  
SUBJECT: CITY OF BARSTOW VS CITY OF ADELANTO, Case No.: 208568

The Judgment in the above-entitled case was signed on January 10, 1996. Please find attached the amended two pages of Exhibit B, Table B-1.

Please find attached two amended pages of Exhibit B, Table B-1.

~~12/10/92~~  
~~01/20/93~~  
~~02/02/93~~  
~~04/18/93~~  
~~04/28/93~~  
09/25/95

EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup>	BASE ANNUAL <sup>2</sup>	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
	PRODUCTION  (ACRE-FEET)	PRODUCTION RIGHT (PERCENT)	FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
SAN BERNARDINO CO SERVICE AREA 70J	1,005	0.8213	1,005	954	904	854	804
SAN BERNARDINO CO SERVICE AREA 70L	355	0.2901	355	337	319	301	284
SAN FILIPPO, JOSEPH & SHELLEY	35	0.0286	35	33	31	29	28
SILVER LAKES ASSOCIATION	3,987	3.2583	3,987	3,787	3,588	3,388	3,189
SOUTHDOWN, INC	1,519	1.2414	1,519	1,443	1,367	1,291	1,215
SOUTHERN CALIFORNIA WATER COMPANY	940	0.7682	940	893	846	799	752
SPRING VALLEY LAKE ASSOCIATION	3,056	2.4974	3,056	2,903	2,750	2,597	2,444
SPRING VALLEY LAKE COUNTRY CLUB	977	0.7984	977	928	879	830	781
STORM, RANDALL	62	0.0507	62	58	55	52	49
SUDMEIER, GLENN W	121	0.0989	121	114	108	102	96
SUMMIT VALLEY RANCH	452	0.3694	452	429	406	384	361
TATRO, RICHARD K & SANDRA A	280	0.2288	280	266	252	238	224
TATUM, JAMES B	829	0.6775	829	787	746	704	663
TAYLOR, ALLEN C / HAYMAKER RANCH	456	0.3727	456	433	410	387	364
THOMAS, S DALE	440	0.3596	440	418	396	374	352
THOMAS, WALTER	36	0.0294	36	34	32	30	28
THOMPSON, JAMES A	418	0.3416	418	397	376	355	334
THOMPSON, RODGER	76	0.0621	76	72	68	64	60
THRASHER, GARY	373	0.3048	373	354	335	317	298
THUNDERBIRD COUNTY WATER DISTRICT	118	0.0964	118	112	106	100	94
TURNER, ROBERT	70	0.0572	70	66	63	59	56
VAIL, JOSEPH B & PAULA E	126	0.1030	126	119	113	107	100
* VAN BURGER, CARL	710	0.5802	710	674	639	603	568
VAN LEEUWEN FAMILY TRUST	341	0.2787	341	323	306	289	272

\* Durston Well, location 06N/04W-18F, APN 468-151-11 - water production right of 357 acre/feet, claimed by Durston/Van Burger/CVB Investments and Industrial Asphalt. Product right to be determined in a subsequent severed proceeding, jurisdiction reserved.

~~12/10/92~~  
~~01/20/93~~  
~~02/02/93~~  
~~01/10/93~~  
~~01/28/92~~  
09/25/95

EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN CENTRO SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup>	BASE ANNUAL <sup>2</sup>	FREE PRODUCTION ALLOWANCES (ACRE-FBET)				
	PRODUCTION  (ACRE-FBET)	PRODUCTION  RIGHT (PERCENT)	FIRST  YEAR	SECOND <sup>3</sup>  YEAR	THIRD <sup>3</sup>  YEAR	FOURTH <sup>3</sup>  YEAR	FIFTH <sup>3</sup>  YEAR
AGCON, INC	0	0.0000	0	0	0	0	0
AGUAYO, JEANETTE L	212	0.3742	212	201	190	180	169
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	120	0.2118	120	114	108	102	96
AVDEEF, THOMAS	34	0.0600	34	32	30	28	27
AZTEC FARM DEVELOPMENT COMPANY (Now, Virgil Gorman)	220	0.3883	220	209	198	187	176
BARNES, PAY - EXECUTOR OF ESTATE OF WAYNE BARNES	243	0.4289	243	230	218	206	194
BROMMER, MARVIN	361	0.6372	361	342	324	306	288
BURNS, RITA J & PAMELA E	16	0.0282	16	15	14	13	12
CHAPA, LARRY R	96	0.1694	96	91	86	81	76
CHOI, YONG IL & JOUNG AE	38	0.0671	38	36	34	32	30
CHRISTISON, JOEL	75	0.1324	75	71	67	63	60
COOK, KWON W	169	0.2983	169	160	152	143	135
DE VRIES, NEIL	3,800	6.7070	3,800	3,610	3,420	3,230	3,040
DESERT COMMUNITY BANK	156	0.2753	156	148	140	132	124
DURAN, FRANK T	50	0.0883	50	47	45	42	40
GAINES, JACK	117	0.2065	117	111	105	99	93
GBSIRIECH, WAYNE	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	131	124	117	110
GRIEDER, RAYMOND H & DORISANNE	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & MILLIE D	21	0.0371	21	19	18	17	16
GROEN, CORNELIS	1,043	1.8409	1,043	990	938	886	834
HANIFY, DBA - WHITE BEAR RANCH	152	0.2683	152	144	136	129	121
HARMSBN, JAMES & RUTH ANN	1,522	2.6863	1,522	1,445	1,369	1,293	1,217
HARPER LAKE COMPANY	1,433	2.5293	1,433	1,361	1,289	1,218	1,146

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Cross-Complainant  
6 MOJAVE WATER AGENCY

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By *Y.A. Burns* Y.A. Burns  
Deputy

7  
8 SUPERIOR COURT OF THE STATE OF CALIFORNIA  
9 IN AND FOR THE COUNTY OF RIVERSIDE

10  
11 CITY OF BARSTOW, et al, )

CASE NO. 208568

12 Plaintiff, )

ASSIGNED TO JUDGE KAISER  
13 DEPT. 4 FOR ALL PURPOSES

14 v. )

JUDGMENT AFTER TRIAL

15 CITY OF ADELANTO, et al, )

16 Defendant. )

17 MOJAVE WATER AGENCY, )

18 Cross-complainant, )

19 v. )

20 ANDERSON, RONALD H. et al, )

21 Cross-defendants. )

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Exhibit "A" - Map entitled, "Map showing Mojave Water Agency, Mojave River, Mojave Basin Area and Hydrologic Subareas and Limits of Adjudicated Area Together with Geologic and Other Pertinent Features."

Exhibit "B" - Tables entitled, "Table B-1: Table Showing Base Annual Production, Base Annual Production Right of Each Producer Within Each Subarea, and Free Production Allowance for Subareas for First Five Years of the Judgment" and "Table B-2: Table Showing Total Water Production for Aquaculture and Recreational Lake Purposes."

Exhibit "C" - Engineering Appendix.

Exhibit "D" - Time Schedules.

Exhibit "E" - List of Producers and Their Designees.

Exhibit "F" - Transfers of Base Annual Production Rights.

Exhibit "G" - Subarea Obligations.

Exhibit "H" - Biological Resource Mitigation.

Exhibit "I" - Map Showing Potential Groundwater Recharge Areas

1 I. INTRODUCTION

2 A. The Complaint. The original complaint herein was filed  
3 by the City of Barstow and Southern California Water Company  
4 (collectively "Plaintiffs") in San Bernardino Superior Court, North  
5 Desert District, on May 30, 1990 as Case No. BCV6672, and  
6 transferred to Riverside County Superior Court on November 27,  
7 1990. Plaintiffs allege that the cumulative water Production  
8 upstream of the City of Barstow Overdrafted the Mojave River  
9 system, and request an average Annual flow of 30,000 acre-feet of  
10 surface water to the City of Barstow area. The complaint also  
11 includes a request for a writ of mandate to require the Mojave  
12 Water Agency ("MWA") to act pursuant to its statutory authority to  
13 obtain and provide Supplemental Water for use within the Mojave  
14 Basin Area.

15 B. The MWA Cross-Complaint. On July 26, 1991, the MWA filed  
16 its first amended cross-complaint in this case. The MWA first  
17 amended cross-complaint and its ROE amendments name Producers who  
18 collectively claim substantially all rights of water use within the  
19 Mojave Basin Area, including Parties downstream of the City of  
20 Barstow. The MWA cross-complaint, as currently amended, requests  
21 a declaration that the available native water supply to the Mojave  
22 Basin Area (not including water imported from the California State  
23 Water Project) is inadequate to meet the demands of the combined  
24 Parties and requests a determination of the water rights of  
25 whatever nature within the MWA boundaries and the Mojave Basin  
26 Area. The MWA has named as Parties several hundred Producers  
27 within the Basin Area.

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1 C. The Arc Las Flores Cross-Complaint. On July 3, 1991, Arc  
2 Las Flores filed a cross-complaint for declaratory relief seeking  
3 a declaration of water rights of certain named cross-defendants and  
4 a declaration that the appropriative, overlying and riparian rights  
5 of Arc Las Flores be determined to be prior and paramount to any  
6 rights of the Plaintiffs and other appropriators.

7 D. Stipulation and Trial. On October 16, 1991, the Court  
8 ordered a litigation standstill. The purpose of the standstill was  
9 to give the parties time to negotiate a settlement and develop a  
10 solution to the overdraft existing in the Mojave River Basin.

11 A committee of engineers and attorneys, representing a variety  
12 of water users and interests throughout the Mojave River Basin, was  
13 created to develop a physical solution to the water shortage  
14 problem. The work of the committee resulted in a stipulated  
15 interlocutory order and judgment, which was entered by the court on  
16 September 23, 1993.

17 Several non-stipulating parties requested a trial. On April  
18 20, 1994, the Court issued a memorandum setting forth the trial  
19 issues. This cause came on regularly for trial on February 6,  
20 1995, and was tried in Department 4 of the above-entitled Court,  
21 the Honorable E. Michael Kaiser, Judge, Presiding, without a jury.  
22 Oral and documentary evidence was introduced on behalf of the  
23 respective parties and the cause was argued and submitted for  
24 decision.

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1 II. DECREE

2 NOW, THEREFORE, IT IS ORDERED, ADJUDGED AND DECREED:

3 A. JURISDICTION, PARTIES, DEFINITIONS.

4 1. Jurisdiction and Parties.

5 a. Jurisdiction. This Court has jurisdiction to  
6 enter Judgment declaring and adjudicating the rights to reasonable  
7 and beneficial use of water by the Parties in the Mojave Basin Area  
8 pursuant to Article X, Section 2 of the California Constitution.  
9 This Judgment constitutes an adjudication of water rights of the  
10 Mojave Basin Area pursuant to Section 37 of Chapter 2146 of  
11 Statutes of 1959 ("the MWA Act").

12 b. Parties. All Parties to the MWA cross-  
13 complaint are included in this Judgment. The MWA has notified  
14 those Persons claiming any right, title or interest to the natural  
15 waters within the Mojave Basin Area to make claims. Such notice  
16 has been given: 1) in conformity with the notice requirements of  
17 Water Code §§ 2500 et seq.; 2) pursuant to Section 37 of the MWA  
18 Act; and 3) pursuant to order of this Court. Subsequently, all  
19 Producers making claims have been or will be included as Parties.  
20 The defaults of certain Parties have been entered, and certain  
21 named cross-defendants to the MWA cross-complaint who are not  
22 Producers have been dismissed. All named Parties who have not been  
23 dismissed have appeared herein or have been given adequate  
24 opportunity to appear herein. The Court has jurisdiction of the  
25 subject matter of this action and of the Parties hereto.

26 c. Minimal Producers. There are numerous Minimal  
27 Producers in the Basin Area and their number is expected to  
28 increase in the future. In order to minimize the cost of

1 administering this Judgment and to assure that every Person  
2 producing water in the Basin Area participates fairly in the  
3 Physical Solution, MWA shall:

4 i. within one Year following entry of this  
5 Judgment, prepare a report to the Court: 1) setting forth the  
6 identity and verified Base Annual Production of each Minimal  
7 Producer in each Subarea of the Basin Area; and 2)  
8 recommending a proposed system of Minimal Producer  
9 Assessments. The system of Minimal Producer Assessments shall  
10 achieve an equitable allocation of the costs of the Physical  
11 Solution that are attributable to Production of verified Base  
12 Annual Production amounts by Minimal Producers in each Subarea  
13 to and among such Minimal Producers. Minimal Producer  
14 Assessments need not be the same for existing Minimal  
15 Producers as for future Minimal Producers.

16 ii. within one Year following entry of this  
17 Judgment, prepare a report to the Court setting forth a  
18 proposed program to be undertaken by MWA, pursuant to its  
19 statutory authority, to implement the proposed system of  
20 Minimal Producer Assessments. The Court may order MWA to  
21 implement the proposed program or, if MWA's statutory  
22 authority is inadequate to enable implementation, or if either  
23 the proposed program or the proposed system of Minimal  
24 Producer Assessments is unacceptable to the Court, the Court  
25 may then order MWA either to implement an alternative program  
26 or system, or in the alternative, to name all Minimal  
27 Producers as Parties to this litigation and to serve them for  
28 the purpose of adjudicating their water rights.



1 Any Minimal Producer whose Annual Production exceeds ten (10) acre-  
2 feet in any Year following the date of entry of Judgment shall be  
3 made a Party pursuant to Paragraph 12 and shall be subject to  
4 Administrative, Replacement Water, Makeup Water and Biological  
5 Resources Assessments. Any Minimal Producer who produced during  
6 the 1986-1990 period may become a Party pursuant to Paragraph 40  
7 with a Base Annual Production Right based on such Minimal  
8 Producer's verified Base Annual Production. To account properly  
9 for aggregate Production by Minimal Producers in each Subarea,  
10 Table B-1 of Exhibit B shall include an estimated aggregate amount  
11 of Base Annual Production by all Minimal Producers in each Subarea.  
12 The Base Annual Production of any Minimal Producer who becomes a  
13 Party shall be deducted from the aggregate amount and assigned to  
14 such Minimal Producer.

15 2. Physical and Legal Complexity. The physical and  
16 legal issues of the case as framed by the complaint and cross-  
17 complaints are extremely complex. Production of more than 1,000  
18 Persons producing water in the Basin Area has been ascertained. In  
19 excess of 1,000 Persons have been served. The water supply and  
20 water rights of the entire Mojave Basin Area and its hydrologic  
21 Subareas extending over 4000 square miles have been brought into  
22 issue. Most types and natures of water right known to California  
23 law are at issue in the case. Engineering studies by the Parties,  
24 jointly and severally, leading toward adjudication of these rights  
25 and a Physical Solution, have required the expenditure of over two  
26 Years' time and hundreds of thousands of dollars.

27 3. Need for a Declaration of Rights and Obligations and  
28 for Physical Solution. A Physical Solution for the Mojave Basin

1 Area based upon a declaration of water rights and a formula for  
2 Intra- and Inter-Subarea allocation of rights and obligations is  
3 necessary to implement the mandate of Article X, Section 2 of the  
4 California Constitution and California water policy. Such Physical  
5 Solution requires the definition of the individual rights of all  
6 Producers within the Basin Area in a manner which will equitably  
7 allocate the natural water supplies and which will provide for  
8 equitable sharing of costs for Supplemental Water. Nontributary  
9 supplemental sources of water are or will be available in amounts,  
10 which when combined with water conservation, water reclamation,  
11 water transfers, and improved conveyance and distribution methods  
12 within the Basin Area, will be sufficient in quantity and quality  
13 to assure implementation of a Physical Solution. Sufficient  
14 information and data are known to formulate a reasonable and just  
15 allocation of existing water supplies as between the hydrologic  
16 Subareas within the Basin Area and as among the water users within  
17 each Subarea. Such Physical Solution will allow the public water  
18 supply agencies and individual water users within each hydrologic  
19 Subarea to proceed with orderly water resource planning and  
20 development. It will be necessary for MWA to construct conveyance  
21 facilities to implement the Physical Solution. Absent the  
22 construction of conveyance facilities, some Subareas may be  
23 deprived of an equitable share of the benefits made possible by the  
24 Physical Solution. Accordingly, this Physical Solution mandates  
25 the acquisition or construction of conveyance facilities for  
26 importation and equitable distribution of Supplemental Water to the  
27 respective Subareas. Such construction is dependent on the  
28 availability of appropriate financing, and any such financing

1 assessed to the Parties will be based upon benefit to the Parties  
2 in accordance with the MWA Act.

3 4. Definitions. As used in this judgment, the  
4 following terms shall have the meanings herein set forth:

5 a. Afton - The United States Geological Survey gauging  
6 station "Mojave River at Afton, CA."

7 b. Annual or Year - As used in this Judgment refers to  
8 the Annual period beginning October 1 and ending  
9 September 30 of the following Year.

10 c. Aquaculture Water - Water so identified in Exhibit  
11 "B". Such water may be used only for fish breeding  
12 and rearing. The Annual Consumptive Use of such  
13 water in acre-feet is equal to the water surface  
14 area, in acres, of the fish rearing facilities  
15 multiplied by seven (feet).

16 d. Assessments - Those Assessments levied and  
17 collected pursuant to this judgment including  
18 Replacement Water, Makeup Water, Administrative and  
19 Biological Resource Assessments.

20 e. Barstow - The United States Geological Survey  
21 Gauging Station "Mojave River at Barstow, CA."

22 f. Base Annual Production - The verified maximum Year  
23 Production, in acre-feet, for each Producer for the  
24 five Year Period 1986-1990 as set forth in Table  
25 B-1 of Exhibit "B", except where otherwise noted  
26 therein. The maximum Year Production for each  
27 Producer was verified based on one or more of the  
28 following: flow meter readings, electrical power

1 or diesel usage records or estimated applied water  
2 duty. The Base Annual Production for recreational  
3 lakes in the Baja Subarea and for Aquaculture shall  
4 be equal either to the area of water surface  
5 multiplied by seven feet or to verified Production,  
6 whichever is less. The five Year period 1986-1990  
7 shall also be the time period for which Base Annual  
8 Production for Minimal Producers shall be  
9 calculated.

10 g. Base Annual Production Right - The relative Annual  
11 right of each Producer to the Free Production  
12 Allowance within a given Subarea, expressed as a  
13 percentage of the aggregate of all Producers' Base  
14 Annual Production in the Subarea. The percentage  
15 for each Producer is calculated by multiplying that  
16 Producer's Base Annual Production in a Subarea  
17 times one hundred (100) and dividing the result by  
18 the aggregate Base Annual Production for all  
19 Producers in the Subarea. The percentage shall be  
20 rounded off to the nearest one ten-thousandth of  
21 one per cent.

22 h. Base Flow - That portion of the total surface flow  
23 measured Annually at Lower Narrows which remains  
24 after subtracting Storm Flow.

25 i. Carry Over Right - The right of a Producer to delay  
26 and accumulate the Production of such Producer's  
27 share of a Subarea Free Production Allowance until  
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1 and only until the following Year free of any  
2 Replacement Water Assessment.

3 j. Consumption or Consumptive Use - The permanent  
4 removal of water from the Mojave Basin Area through  
5 evaporation or evapo-transpiration. The  
6 Consumptive Use rates resulting from particular  
7 types of water use are identified in Paragraph 2 of  
8 Exhibit "F".

9 k. Free Production Allowance - The total amount of  
10 water, and any Producer's share thereof, that may  
11 be Produced from a Subarea each Year free of any  
12 Replacement Obligation.

13 l. Groundwater - Water beneath the surface of the  
14 ground and within the zone of saturation; i.e.,  
15 below the existing water table, whether or not  
16 flowing through known and definite channels.

17 m. Harper Lake Basin - That portion of the Centro  
18 Subarea identified as such on Exhibit "A".

19 n. Lower Narrows - The United States Geological Survey  
20 gauging station "Mojave River near Victorville,  
21 CA."

22 o. Makeup Water - Water needed to satisfy a Minimum  
23 Subarea Obligation.

24 p. Makeup Obligation - The obligation of a Subarea to  
25 pay for Makeup Water to satisfy its Subarea  
26 Obligation.

27 q. Minimal Producer - Any Person whose Base Annual  
28 Production, as verified by MWA is not greater than

1 ten (10) acre-feet. A Person designated as a  
2 Minimal Producer whose Annual Production exceeds  
3 ten (10) acre-feet in any Year following the date  
4 of entry of Judgment is no longer a Minimal  
5 Producer.

6 r. Minimum Subarea Obligation - The minimum Annual  
7 amount of water a Subarea is obligated to provide  
8 to an adjoining downstream Subarea or the  
9 Transition Zone or, in the case of the Baja  
10 Subarea, the minimum Annual Subsurface Flow at the  
11 MWA eastern boundary toward Afton in any Year, as  
12 set forth in Exhibit "G".

13 s. Mojave Basin Area or Basin Area - The area shown on  
14 Exhibit "A" that lies within the boundaries of the  
15 line labelled "Limits of Adjudicated Area" which  
16 generally includes the area tributary to the Mojave  
17 River and its tributaries except for such area not  
18 included within the Mojave Water Agency's  
19 jurisdiction.

20 t. MWA - Cross complainant Mojave Water Agency.

21 u. Overdraft - A condition wherein the current total  
22 Annual Consumptive Use of water in the Mojave Basin  
23 Area or any of its Subareas exceeds the long term  
24 average Annual natural water supply to the Basin  
25 Area or Subarea.

26 v. Party (Parties) - Any Person(s) named in this  
27 action who has intervened in this case or has

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1 become subject to this Judgment either through  
2 stipulation, default, trial or otherwise.

3 w. Person(s) - Any natural person, firm, association,  
4 organization, joint venture, partnership, business,  
5 trust, corporation, or public entity.

6 x. Produce - To pump or divert water.

7 y. Producer(s) - A Person, other than a Minimal  
8 Producer, who Produces water.

9 z. Production - Annual amount of water produced,  
10 stated in acre-feet of water.

11 aa. Production Safe Yield - The highest average Annual  
12 Amount of water that can be produced from a  
13 Subarea: (1) over a sequence of years that is  
14 representative of long-term average annual natural  
15 water supply to the Subarea net of long-term  
16 average annual natural outflow from the Subarea,  
17 (2) under given patterns of Production, applied  
18 water, return flows and Consumptive Use, and (3)  
19 without resulting in a long-term net reduction of  
20 groundwater in storage in the Subarea.

21 bb. Purpose of Use - The broad category of type of  
22 water use including but not limited to municipal,  
23 irrigation, industrial, aquaculture, and lakes  
24 purposes. A change in Purpose of Use includes any  
25 reallocation of water among mixed or sequential  
26 uses, excluding direct reuse of municipal  
27 wastewater.

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cc. Recirculated Water - Water that is Produced but not consumed by the Parties listed in Table B-2 of Exhibit "B" and then returned either to the Mojave River or to the Groundwater basin underlying the place of use.

dd. Replacement Obligation - The obligation of a Producer to pay for Replacement Water for Production from a Subarea in any Year in excess of the sum of such Producer's share of that Year's Free Production Allowance for the Subarea plus any Production pursuant to a Carry Over Right.

ee. Replacement Water - Water purchased by Watermaster or otherwise provided to satisfy a Replacement Obligation.

ff. Responsible Party - The Person designated by a Party as the Person responsible for purposes of filing reports and receiving notices pursuant to the provisions of this Judgment.

gg. Stored Water - Water held in storage pursuant to a Storage Agreement with Watermaster.

hh. Storm Flow - That portion of the total surface flow originating from precipitation and runoff without having first percolated to Groundwater storage in the zone of saturation and passing a particular point of reckoning, as determined annually by the Watermaster.

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- 1 ii. Subareas - The five Subareas of the Mojave Basin  
2 Area -- Este, Oeste, Alto, Centro and Baja -- as  
3 shown on Exhibit "A".
- 4 jj. Subarea Obligation - The average Annual amount of  
5 water that a Subarea is obligated to provide to an  
6 adjoining downstream Subarea or the Transition Zone  
7 or, in the case of the Baja Subarea, the average  
8 Annual Subsurface Flow toward Afton at the MWA  
9 eastern boundary as set forth in Exhibit "G".
- 10 kk. Subsurface Flow - Groundwater which flows beneath  
11 the earth's surface.
- 12 ll. Supplemental Water - Water imported to the Basin  
13 Area from outside the Basin Area, water that would  
14 otherwise be lost from the Basin Area but which is  
15 captured and made available for use in the Basin  
16 Area, or any Producer's share of Free Production  
17 Allowance that is not Produced and is acquired by  
18 Watermaster pursuant to this Judgment.
- 19 mm. Transition Zone - The portion of the Alto Subarea,  
20 shown on Exhibit "A", that lies generally between  
21 the Lower Narrows and the Helendale Fault.
- 22 nn. Watermaster - The Person(s) appointed by the Court  
23 to administer the provisions of this Judgment.

24 5. Exhibits. The following exhibits are attached to this  
25 Judgment and made a part hereof.

26 Exhibit "A" - Map entitled, "Map showing Mojave Water  
27 Agency, Mojave River, Mojave Basin Area and Hydrologic Subareas and

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1 Limits of Adjudicated Area Together with Geologic and Other  
2 Pertinent Features."

3 Exhibit "B" - Table entitled, "Table B-1: Table Showing  
4 Base Annual Production and Base Annual Production Right of Each  
5 Producer Within Each Subarea, and Free Production Allowances for  
6 Subareas for First Five Years after entry of the Interlocutory  
7 Judgment" and "Table B-2: Table Showing Total Water Production for  
8 Aquaculture and Recreational Lake Purposes."

9 Exhibit "C" - Engineering Appendix.

10 Exhibit "D" - Time Schedules.

11 Exhibit "E" - List of Producers and Their Designees.

12 Exhibit "F" - Transfers of Base Annual Production Rights.

13 Exhibit "G" - Subarea Obligations.

14 Exhibit "H" - Biological Resource Mitigation.

15 Exhibit "I" - Map Showing Potential Groundwater Recharge  
16 Areas

17 B. DECLARATION OF HYDROLOGIC CONDITIONS.

18 6. Mojave Basin Area as Common Source of Supply. The  
19 area shown on Exhibit "A" as the Mojave Basin Area is comprised of  
20 five Subareas. The waters derived from the Mojave River and its  
21 tributaries constitute a common source of supply of the five  
22 Subareas and of the Persons producing therefrom.

23 7. Existence of Overdraft. In each and every Year, for  
24 a period in excess of five (5) years prior to the May 30, 1990  
25 filing date of Plaintiffs' Complaint, the Mojave Basin Area and  
26 each of its respective Subareas have been and are in a state of  
27 Overdraft, and it is hereby found that there is no water available

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1 for Production from the Basin Area or any Subarea therein except  
2 pursuant to this Judgment.

3 C. DECLARATION OF RIGHTS AND OBLIGATIONS.

4 8. Production Rights of the Parties. The Base Annual  
5 Production and Base Annual Production Right of each Party are  
6 declared as set forth in Table B-1 of Exhibit "B". Certain Parties  
7 also have the right to continue to Produce Recirculated Water in  
8 the amounts set forth in Table B-2 of Exhibit "B", subject to the  
9 following:

10 a. Aquaculture. Two of the Producers listed in  
11 Table B-2 of Exhibit "B", California Department of Fish and Game  
12 Mojave River Fish Hatchery (Hatchery) and Jess Ranch Water Company  
13 (Jess), Produce Recirculated Water for Aquaculture. The Hatchery  
14 and Jess or their successors or assignees shall have the right to  
15 continue to Produce up to the amounts listed in Table B-2 of  
16 Exhibit "B" as Recirculated Water for Aquaculture on the property  
17 where it was used in the Year for which Base Annual Production was  
18 verified. Production of such amount of Recirculated water by Jess  
19 shall be free of any Replacement Water Assessments, Makeup Water  
20 Assessments or Administrative Assessments but shall be subject to  
21 Biological Resources Assessments and each Jess well producing  
22 Recirculated Water shall be subject to an Annual administrative fee  
23 equal to the lowest Annual fee paid to MWA by a Minimal Producer.  
24 Neither the Hatchery nor Jess Recirculated Water may be transferred  
25 or used for any other purpose or transferred for use on any other  
26 property, except as provided in Paragraph 7 of Exhibit "F" for the  
27 Hatchery. Any Production of Recirculated Water by Jess in excess  
28 of the amount shown in Table B-2 shall be subject to all

1 Assessments. Production of Recirculated Water by the Hatchery will  
2 be subject to the rules set forth in Paragraph 7 of Exhibit "F".  
3 All Jess Aquaculture Recirculated Water shall be discharged  
4 immediately and directly to the Mojave River.

5 b. Camp Cady. One Producer listed in Table B-2 of  
6 Exhibit "B", California Department of Fish and Game-Camp Cady (Camp  
7 Cady), Produces Recirculated Water for Lakes containing Tui Chub,  
8 an endangered species of fish. Camp Cady or its successors or  
9 assignees shall have the right to continue to Produce up to the  
10 amount listed in Table-B-2 of Exhibit "B" as Recirculated Water at  
11 Camp Cady. Production of each amount of Recirculated water shall  
12 be free of any Assessments. Camp Cady Recirculated Water may not  
13 be transferred or used for any other purpose or transferred for use  
14 on any other property. Any Production of Recirculated Water by  
15 Camp Cady in excess of the amount shown in Table B-2 of Exhibit "B"  
16 shall be subject to all Assessments except Biological Resource  
17 Assessments. All Camp Cady Recirculated Water shall be allowed to  
18 percolate immediately and directly to the Groundwater basin  
19 underlying Camp Cady.

20 c. Recreational Lakes in Baja Subarea. All  
21 Producers listed in Table B-2 of Exhibit "B" except the Hatchery,  
22 Jess and Camp Cady Produce Recirculated Water for recreational  
23 lakes in the Baja Subarea. Such Producers or their successors or  
24 assignees shall have the right to continue to Produce up to the  
25 amounts identified in Table B-2 of Exhibit "B" as Recirculated  
26 Water for use in recreational lakes on the property where it was  
27 used in the Year for which Base Annual Production was verified,  
28 free of any Replacement Water Assessments, Makeup Water

1 Assessments, or Administrative Assessments, but such Production  
2 shall be subject to any Biological Resource Assessment. Each well  
3 producing such Recirculated Water shall be subject to an Annual  
4 administrative fee equal to the lowest Annual fee paid by a Minimal  
5 Producer. Recirculated Water cannot be transferred or used for any  
6 other purpose. All recreational lake Recirculated Water shall be  
7 allowed to percolate immediately and directly to the Groundwater  
8 basin underlying the recreational lake.

9 9. MWA Obligations. The Physical Solution is intended  
10 to provide for delivery and equitable distribution to the  
11 respective Subareas by MWA of the best quality of Supplemental  
12 Water reasonably available. MWA shall develop conveyance or other  
13 facilities to deliver this Supplemental Water to the areas depicted  
14 in Exhibit "I," unless prevented by forces outside its reasonable  
15 control such as an inability to secure financing consistent with  
16 sound municipal financing practices and standards.

17 a. Secure Supplemental Water. MWA, separate and  
18 apart from its duties as the initial Watermaster designated under  
19 this Judgment, shall exercise its authority under Sections 1.5 and  
20 15 of the MWA Act to pursue promptly, continuously and diligently  
21 all reasonable sources to secure Supplemental Water as necessary to  
22 fully implement the provisions of this Judgment.

23 b. Supplemental Water Prices. The MWA shall  
24 establish fair and equitable prices for Supplemental Water  
25 delivered to the Watermaster under this Judgment.

26 c. Supplemental Water Delivery Plan. Not later  
27 than September 30, 1996, MWA shall prepare a report on potential  
28 alternative facilities or methods to deliver Supplemental Water to

1 the areas shown on Exhibit "I." The report shall include, for each  
2 alternative, a development time schedule, a summary of cost  
3 estimates, an analysis of the relative benefits to Producers in  
4 each Subarea and an analysis of alternative methods of financing  
5 and cost allocation, including any state or federal sources of  
6 funding that may be available.

7 d. Water Delivery Cost Allocation. The report  
8 required by subdivision (c) above shall recommend methods of  
9 financing and cost allocation that are based on benefits to be  
10 received. MWA's cost allocation plan shall be subject to Court  
11 review as provided in subdivision (f) below to verify that costs  
12 are allocated fairly and according to benefits to be received. The  
13 MWA financing and cost allocation plan may include a mix of revenue  
14 sources including the following:

15 (1) Developer or connection fees to the  
16 extent MWA can demonstrate a nexus, as  
17 required by law, between the fees and the  
18 impact of the development upon the water  
19 resources of the Mojave Basin Area and  
20 each subarea thereof;

21 (2) Other methods of financing available to  
22 MWA, including but not limited to  
23 property based taxes, assessments or  
24 standby charges;

25 (3) Water sales revenues, but only to the  
26 extent other sources are not available or  
27 appropriate, and in no event shall the  
28 water sales price to cover facility

1 capital costs exceed a rate equal to  
2 fifty percent of the variable cost rate  
3 charged to MWA under its contract for  
4 water delivery from the California State  
5 Water Project;

6 e. Legislative Changes. MWA shall seek promptly  
7 to have enacted amendments to the MWA Act (Water Code Appendix,  
8 Part 97) that allow MWA to implement any methods of governmental  
9 financing available to any public entity in California.

10 f. Court Review and Determination of Benefit. Not  
11 later than September 30, 1996, MWA shall submit its report to the  
12 Court in a noticed motion pursuant to Paragraph 36. The report  
13 shall set forth MWA's recommendations as to the following: (1)  
14 which alternatives should be implemented; (2) methods of cost  
15 allocation for the recommended alternatives; (3) financing for the  
16 recommended alternatives; and (4) a time schedule to complete the  
17 recommended alternatives. The Court may approve or reject the  
18 recommendations. The Court may further order the use of  
19 alternatives and time schedules or it may order additional studies  
20 and resubmittals, as it may deem proper.

21 10. Priority and Determination of Production Rights.  
22 The water rights involved herein are of differing types and  
23 commenced at different times. Many of the rights involved are  
24 devoted to public uses. The Declaration of Water Rights that is  
25 part of the judgment and the Physical Solution decreed herein takes  
26 into consideration the competing priorities which have been  
27 asserted in addition to the equitable principles applicable to  
28 apportionment of water in this situation. The following factors

1 have been considered in the formulation of each Producer's Base  
2 Annual Production Right:

3 a. The Mojave Basin Area and each of its hydrologic  
4 Subareas have continuously for many Years been in a state of  
5 system-wide Overdraft;

6 b. All Producers have contributed to the Overdraft;

7 c. None of the priorities asserted by any of the  
8 Producers is without dispute;

9 d. Under the complex scheme of California water  
10 law, the allocation of water and rights mechanically based upon the  
11 asserted priorities would be extremely difficult, if not  
12 impossible, and would not result in the most equitable  
13 apportionment of water;

14 e. Such mechanical allocation would, in fact,  
15 impose undue hardship on many Parties;

16 f. There is a need for conserving and making  
17 maximum beneficial use of the water resources of the State;

18 g. The economy of the Mojave Basin Area has to a  
19 great extent been established on the basis of the existing  
20 Production;

21 h. The Judgment and Physical Solution take into  
22 consideration the unique physical and climatic conditions of the  
23 Mojave Basin Area, the Consumptive Use of water in the several  
24 sections of the Basin, the character and rate of return flows, the  
25 extent of established uses, the availability of storage water, the  
26 relative benefits and detriments between upstream areas and  
27 downstream areas if a limitation is imposed on one and not the

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1 other, and the need to protect public interest and public trust  
2 concerns.

3 In consideration of the foregoing factors, and in  
4 accordance with the terms and conditions of this Judgment, the  
5 Parties are estopped and barred from asserting special priorities  
6 or preferences.

7 11. Exercise of Carry Over Rights. The first water  
8 Produced by a Producer during any Year shall be deemed to be an  
9 exercise of any Carry Over Right. Such Carry Over Right may be  
10 transferred in accordance with Exhibit "F".

11 12. Production Only Pursuant to Judgment. This  
12 Judgment, and the Physical Solution decreed herein, addresses all  
13 Production within the Mojave Basin Area. Because of the existence  
14 of Overdraft, any Production outside the framework of this Judgment  
15 and Physical Solution will contribute to an increased Overdraft,  
16 potentially damage the Mojave Basin Area and public interests in  
17 the Basin Area, injure the rights of all Parties, and interfere  
18 with the Physical Solution. Watermaster shall bring an action or  
19 a motion to enjoin any Production that is not pursuant to the terms  
20 of this Judgment.

21 13. Declaration of Subarea Rights and Obligations. In  
22 the aggregate, Producers within certain Subareas have rights, as  
23 against those in adjoining upstream Subareas, to receive average  
24 Annual water supplies and, in any one Year, to receive minimum  
25 Annual water supplies equal to the amounts set forth in Exhibit  
26 "G", in addition to any Storm Flows. In turn, in the aggregate,  
27 Producers within certain Subareas have an obligation to provide to  
28 adjoining downstream Subareas such average Annual water supplies in

1 the amounts and in the manner set forth in Exhibit "G". In any one  
2 Year, Producers within certain Subareas have an obligation to  
3 provide to adjoining downstream Subareas such minimum Annual water  
4 supplies in the amounts and in the manner set forth in Exhibit "G".  
5 The Producers in the Baja Subarea have an obligation to provide  
6 average and minimum Subsurface Flows toward Afton at the MWA  
7 eastern boundary equal to the amounts shown in Exhibit "G".  
8 Producers in each of the Subareas have rights in the aggregate, as  
9 against each adjoining downstream Subarea or, in the case of the  
10 Baja Subarea, as against flows at the MWA eastern boundary toward  
11 Afton, to divert, pump, extract, conserve, and use all surface  
12 water and Groundwater supplies originating therein or accruing  
13 thereto, and so long as the adjoining downstream Subarea  
14 Obligations are satisfied under this Judgment and there is  
15 compliance with all of its provisions. Watermaster shall maintain  
16 a continuing account of the status of each Subarea's compliance  
17 with its Subarea Obligation, including any cumulative credits or  
18 debits and any requirement for providing Makeup Water. The  
19 accounting and determinations relative to Subarea Obligations shall  
20 be made in accordance with procedures set forth in Exhibit "G".

21  
22 **III. INJUNCTION**

23 14. Injunction Against Unauthorized Production. Each  
24 and every Party, its officers, agents, employees, successors, and  
25 assigns, is ENJOINED AND RESTRAINED from Producing water from the  
26 Basin Area except pursuant to the provisions of the Physical  
27 Solution in this Judgment.

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1           15. Injunction Re Change in Purpose of Use Without  
2 Notice Thereof to Watermaster. Each and every Party, its officers,  
3 agents, employees, successors, and assigns, is ENJOINED AND  
4 RESTRAINED from changing its Purpose of Use at any time without  
5 first notifying Watermaster of the intended change.

6           16. Injunction Against Unauthorized Recharge. Each and  
7 every Party, its officers, agents, employees, successors and  
8 assigns, is ENJOINED AND RESTRAINED from claiming any right to  
9 recapture Water that has been recharged in the Basin Area except  
10 pursuant to a Storage Agreement with Watermaster. This provision  
11 does not prohibit Parties from importing Supplemental Water into  
12 the Basin Area for direct use.

13           17. Injunction Against Transportation from Mojave Basin  
14 Area. Except upon further order of the Court, each and every  
15 Party, its officers, agents, employees, successors and assigns, is  
16 ENJOINED AND RESTRAINED from transporting water hereafter Produced  
17 from the Basin Area to areas outside the Basin Area.

18           18. Injunction Against Diverting Storm Flows. No Party  
19 may undertake or cause the construction of any project that will  
20 directly reduce the amount of Storm Flow that would otherwise go  
21 through the naturally occurring hydrologic regime to a downstream  
22 Subarea or that will reduce the surface area over which Storm Flow  
23 currently occurs by alteration to the bed of the Mojave River.  
24 This paragraph shall not prevent any flood control agency or  
25 municipality from taking such emergency action as may be necessary  
26 to protect the physical safety of its residents and its structures  
27 from flooding. Any such action shall be done in a manner that will  
28 minimize any reduction in the quantity of Storm Flows.

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IV. CONTINUING JURISDICTION

19. Jurisdiction Reserved. Full jurisdiction, power and authority are retained by and reserved to the Court for purposes of enabling the Court upon the application of any Party, by a motion noticed in accordance with the notice procedures of Paragraph 36 hereof, to make such further or supplemental order or directions as may be necessary or appropriate for interim operation before the Physical Solution is fully operative, or for interpretation, enforcement or carrying out of this Judgment, and to modify, amend or amplify any of the provisions of this Judgment or to add to the provisions thereof consistent with the rights herein decreed; provided, that nothing in this paragraph shall authorize either a reduction of the Base Annual Production Right of any Party, except in accordance with the rules set forth in Exhibit "F", or a reduction of the Base Flow portion of any Subarea Obligation.

V. Physical Solution

A. GENERAL

20. Purpose and Objective. The Court hereby declares and decrees that the Physical Solution herein contained: 1) is a fair and equitable basis for satisfaction of all water rights in the Mojave Basin Area; 2) is in furtherance of the mandate of the State Constitution and the water policy of the State of California; and 3) takes into account applicable public trust interests; and therefore adopts and orders the Parties to comply with the Physical Solution. As noted in Paragraph 3 of this Judgment, the declaration of rights and obligations of the Parties and Subareas is a necessary component of this Physical Solution. The purpose of

1 the Physical Solution is to establish a legal and practical means  
2 for making the maximum reasonable beneficial use of the waters of  
3 the Basin Area by providing for the long-term conjunctive  
4 utilization of all water available thereto to meet the reasonable  
5 beneficial use requirements of water users therein.

6 21. Need for Flexibility. It is essential that this  
7 Physical Solution provide maximum flexibility and adaptability in  
8 order that the Court may be free to use existing and future  
9 technological, social, institutional and economic options in order  
10 to maximize reasonable beneficial use of the waters of the Basin  
11 Area. To that end, the Court's retained jurisdiction may be  
12 utilized where appropriate, to supplement the Physical Solution.

13 22. General Pattern of Operations. The Producers will  
14 be divided into five Subareas for purposes of administration. The  
15 Subarea rights and obligations are herein decreed. A fundamental  
16 premise of the Physical Solution is that all Parties will be  
17 allowed, subject to this Judgment, to Produce sufficient water to  
18 meet their reasonable beneficial use requirements. To the extent  
19 that Production by a Producer in any Subarea exceeds such  
20 Producer's share of the Free Production Allowance of that Subarea,  
21 Watermaster will provide Replacement Water to replace such excess  
22 Production according to the methods set forth herein. To the  
23 extent that any Subarea incurs a Makeup Obligation, Watermaster  
24 will provide Supplemental Water to satisfy such Makeup Obligation  
25 according to the methods set forth herein. For the initial five  
26 (5) full Years after entry of this Judgment (including any  
27 interlocutory Judgment), the Free Production Allowance for each  
28 Subarea shall be set as the amount of water equal to the following

1 percentages of the aggregate Base Annual Production for that  
2 Subarea:

	<u>Judgment Year</u>	<u>Percentage</u>	
3			
4	1993-1994	First Full Year	100
5	1994-1995	Second Full Year	95
6	1995-1996	Third Full Year	90
7	1996-1997	Fourth Full Year	85
8	1997-1998	Fifth Full Year	80

9 The extent of Overdraft now varies between Subareas and the  
10 reasonableness of any physical solution as applied to each Producer  
11 depends in part upon such Producer's foreseeable needs and the  
12 present and future availability of water within the Subarea in  
13 which each Producer is located. The Physical Solution described in  
14 this Judgment in part generally contemplates (i) initially allowing  
15 significant unassessed production on a substantially uniform basis  
16 for all Producers and Subareas and (ii) a phasing in of the  
17 monetary obligations necessary to obtain Supplemental Water. The  
18 above two provisions will affect each Subarea differently, may not  
19 be sufficient to ultimately eliminate the condition of Overdraft in  
20 each Subarea and could result in increased Overdraft within a  
21 Subarea. Any adverse impact to any Subarea caused by the  
22 implementation of the provisions shall be the responsibility of the  
23 Producers in each such Subarea.

24 B. ADMINISTRATION.

25 23. Administration by Watermaster. Watermaster shall  
26 administer and enforce the provisions of the Judgment and any  
27 subsequent instructions or orders of this Court.

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1           (a) Standard of Performance. Watermaster shall, in  
2 carrying out its duties, powers and responsibilities herein, act in  
3 an impartial manner without favor or prejudice to any Subarea,  
4 Producer, Party or Purpose of Use.

5           (b) Removal of Watermaster. Full jurisdiction, power  
6 and authority are retained and reserved by the Court for the  
7 purpose of enabling the Court on its own motion, or upon  
8 application of any Party, and upon notice in accordance with the  
9 notice procedures of paragraph 36 hereof, and after hearing  
10 thereon, to remove any appointed Watermaster and substitute a new  
11 Watermaster in its place. The Court shall find good cause for the  
12 removal of Watermaster upon a showing that Watermaster has failed  
13 to perform its duties, powers and responsibilities in an impartial  
14 manner, or has otherwise failed to act in the manner consistent  
15 with the provisions set forth in this Judgment or subsequent order  
16 of the Court.

17           (c) MWA Appointed as Initial Watermaster. The MWA is  
18 hereby appointed, until further order of the Court, as Watermaster  
19 to administer and enforce the provisions of this Judgment and any  
20 subsequent orders of this Court issued in the performance of its  
21 continuing jurisdiction. In carrying out this appointment, MWA  
22 shall segregate and separately exercise in all respects the  
23 Watermaster powers delegated by the Court under this Judgment from  
24 MWA's statutory powers. All funds received, held, and disbursed by  
25 MWA as Watermaster shall be by way of separate Watermaster  
26 accounts, subject to separate accounting and auditing. Meetings  
27 and hearings held by the MWA Board of Directors when acting as  
28 Watermaster shall be noticed and conducted separately from MWA

1 meetings. All Watermaster staff and consultant functions shall be  
2 separate and distinct from MWA staff and consultant functions;  
3 provided, however, that pursuant to duly adopted Watermaster rules,  
4 which shall be subject to review according to Paragraph 36 hereof,  
5 Watermaster staff and consultant functions may be accomplished by  
6 MWA staff and consultants, subject to strict time and cost  
7 accounting principles so that Watermaster functions, and the  
8 Assessments provided under this Judgment, do not subsidize, and are  
9 not subsidized by, MWA functions. Subject to these principles, MWA  
10 shall implement practicable cost efficiencies through consolidation  
11 of Watermaster and MWA staff and consultant functions.

12           24.   Powers and Duties. Subject to the continuing  
13 supervision and control of the Court, Watermaster shall have and  
14 may exercise the following express powers, and shall perform the  
15 following duties, together with any specific powers, authority and  
16 duties granted or imposed elsewhere in this Judgment or hereafter  
17 ordered or authorized by the Court in the exercise of its  
18 continuing jurisdiction:

19           a.   Rules and Regulations. To adopt any and all  
20 appropriate rules and regulations for conduct pursuant to this  
21 Judgment after public hearing. Notice of hearing and a copy of the  
22 proposed rules and regulations, and any amendments thereof, shall  
23 be mailed to all Parties thirty days prior to the date of the  
24 hearing thereon.

25           b.   Employment of Experts and Agents. To employ  
26 such administrative personnel, engineering, legal, accounting, or  
27 other specialty services and consulting assistants as may be deemed  
28 appropriate in carrying out the terms of this Judgment.



1 c. Makeup and Replacement Obligations. To  
2 determine the Makeup Obligations for each Subarea and Replacement  
3 Obligations for each Producer and each Subarea, pursuant to the  
4 terms of the Judgment.

5 d. Measuring Devices, etc. To adopt rules and  
6 regulations regarding determination of amounts of Production and  
7 installation of individual water meters. The rules and regulations  
8 shall provide for approved devices or methods to measure or  
9 estimate Production. Producers who meter Production on the date of  
10 entry of this Judgment shall continue to meter Production.  
11 Thereafter, Producers who do not meter Production on the effective  
12 date of entry of this Judgment may be required by Watermaster rules  
13 and regulations to install water meters upon a showing that then  
14 employed measurement devices or methods do not accurately determine  
15 actual Production. The rules and regulations shall require that  
16 within three Years after the date of entry of this Judgment, any  
17 Producer who provides piped water for human Consumption to more  
18 than five service connections shall have installed an individual  
19 water meter on each service connection.

20 e. Hydrologic Data Collection. To install, operate  
21 and maintain such wells, measuring devices and/or meters necessary  
22 to monitor stream flow, precipitation and groundwater levels and to  
23 obtain such other data as may be necessary to carry out the  
24 provisions of this Judgment, including a study of the Basin Area  
25 phreatophyte consumptive use.

26 f. Assessments. To set, levy and collect all  
27 Assessments specified herein.

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1                   g. Purchase of and Recharge with Supplemental  
2 Water. In accordance with Paragraph 27, to the extent Supplemental  
3 Water is available and is reasonably needed for Replacement Water  
4 or Makeup Water, to use Replacement Water Assessment proceeds to  
5 purchase Replacement Water, and to use Makeup Water Assessment  
6 proceeds to purchase Makeup Water and to have such Replacement  
7 Water and Makeup Water provided to the appropriate Subarea as soon  
8 as practicable. Watermaster may prepurchase Supplemental Water and  
9 apply subsequent Assessments towards the costs of such  
10 prepurchases.

11                   h. Water Quality. To take all reasonable steps to  
12 assist and encourage appropriate regulatory agencies to enforce  
13 reasonable water quality regulations affecting the Basin Area,  
14 including regulation of solid and liquid waste disposal.

15                   i. Notice List. To maintain a current list of  
16 Responsible Parties to receive notice hereunder.

17                   j. Annual Administrative Budget. To prepare a  
18 proposed administrative budget for each Year, hold hearings  
19 thereon, and adopt an administrative budget according to the time  
20 schedule set forth in Exhibit "D". The administrative budget shall  
21 set forth budgeted items and Administrative Assessments in  
22 sufficient detail to show the allocation of the expense among the  
23 Producers. Following the adoption of the budget, expenditures  
24 within budgeted items may thereafter be made by Watermaster in the  
25 exercise of powers herein granted, as a matter of course.

26                   k. Annual Report to Court.

27                   (1) To file an Annual report with this Court  
28 not later than April 1 of each Year beginning April 1 following the

1 first full Year after entry of Judgment. Prior to filing the  
2 Annual report with the Court, Watermaster shall notify all Parties  
3 that a draft of the report is available for review and shall  
4 provide notice of a hearing to receive comments and recommendations  
5 for changes in the report. The public hearing shall be conducted  
6 on the same date and at the same place as the hearings required by  
7 Paragraphs 3 and 4 of Exhibit "D". The notice of hearing may  
8 include such summary of the draft report as Watermaster may deem  
9 appropriate. Watermaster shall also distribute the report to the  
10 Parties requesting copies.

11 (2) The Annual report shall include an Annual  
12 fiscal report of the preceding Year's operation and shall include  
13 details as to operation of each of the Subareas and an audit of all  
14 Assessments and expenditures pursuant to this Physical Solution and  
15 a review of Watermaster activities pursuant to this Judgment. The  
16 Annual report shall include a compilation of at least the  
17 following:

18 Determinations and data required by:

- 19 i) Paragraph 24(c) (Makeup and Replacement Obligations)
- 20 ii) Paragraph 24(e) (Hydrologic Data Collection)
- 21 iii) Paragraph 24(g) (Purchase of and Recharge with  
22 Supplemental Water)
- 23 iv) Paragraph 24(i) (Notice List)

24 Rules and regulations adopted pursuant to:

- 25 v) Paragraph 24(a) (Rules and Regulations)
- 26 vi) Paragraph 24(d) (Measuring Devices, etc.)
- 27 vii) Paragraph 24(s) (Storage Agreements)

28 Reports required by:

- 1 viii) Paragraph 24(j) (Annual Administrative Budget)  
2 ix) Paragraph 24(n) (Transfers)  
3 x) Paragraph 24(o) (Free Production Allowance)  
4 xi) Paragraph 24(p) (Production Reports)  
5 xii) Exhibit "D" (Prior Year Report)  
6 xiii) Exhibit "F" (Transfers of Base Annual Production  
7 Rights)  
8 xiv) Exhibit "G" (Status of Subarea Obligation)  
9 xv) Exhibit "H" (Biological Resource Mitigation)

10 1. Investment of Funds. To hold and invest any  
11 funds in investments authorized from time to time for public  
12 agencies in the State of California.

13 m. Borrowing. To borrow in anticipation of receipt  
14 of Assessment proceeds in an amount not to exceed the Annual amount  
15 of Assessments levied but uncollected.

16 n. Transfers. To prepare on an Annual basis and  
17 maintain a report or record of any transfer of Base Annual  
18 Production Rights. Such report or record shall be available for  
19 inspection by any Party upon reasonable notice to the Watermaster.

20 o. Free Production Allowance. Not later than the  
21 end of the 1997-1998 Water Year, and Annually thereafter, to  
22 recommend in the Watermaster Annual Report an adjustment, if  
23 needed, to the Free Production Allowance for any Subarea. In  
24 making its recommendation, Watermaster shall be guided by the  
25 factors set forth in Exhibit "C", including but not limited to an  
26 annual calculation of the change of water in storage. The Annual  
27 report shall include all assumptions and calculations relied upon  
28 in making its recommendations. Following the 1997-1998 Water Year,

1 or any time thereafter, Watermaster shall obtain prior Court  
2 approval for any increase or reduction of any Subarea's Free  
3 Production Allowance. In no event shall a reduction in any Year  
4 for a Subarea exceed five percent of the aggregate Base Annual  
5 Production of that Subarea. In the event Watermaster recommends in  
6 its report to the Court that the Free Production Allowance for any  
7 Subarea may need to be increased or reduced, the Court shall  
8 conduct a hearing, after notice given by Watermaster according to  
9 paragraph 36, upon Watermaster's recommendations and may order such  
10 changes in Subarea Free Production Allowance. The most recent  
11 Subarea Free Production Allowances shall remain in effect until  
12 revised according to this Paragraph 24(o).

13 p. Production Reports. To require each Producer to  
14 file with Watermaster, pursuant to procedures and time schedules to  
15 be established by Watermaster, a report on a form to be prescribed  
16 by Watermaster showing the total Production of such Party for each  
17 reporting period rounded off to the nearest tenth of an acre foot,  
18 and such additional information and supporting documentation as  
19 Watermaster may require.

20 q. Production Adjustment for Change in Purpose of  
21 Use. If Watermaster determines, using the Consumptive Use rates  
22 set forth in Exhibit "F", that a new Purpose of Use of any  
23 Producer's Production for any Year has resulted in a higher rate of  
24 Consumption than the rate applicable to the original Purpose of Use  
25 of that Producer's Production in the Year for which Base Annual  
26 Production was determined, Watermaster shall use a multiplier (1)  
27 to adjust upward such Production for the purpose of determining the  
28 Producer's Replacement Water Assessment and, (2) to adjust upward

1 the Free Production Allowance portion of such Production for the  
2 purpose of determining the Producer's Makeup Water Assessment. The  
3 multiplier shall be determined by dividing the number of acre feet  
4 of Consumption that occurred under the new Purpose of Use by the  
5 number of acre feet of Consumption that would have occurred under  
6 the original Purpose of Use for the same Production.

7 r. Reallocation of Base Annual Production Rights.

8 To reallocate annually the Base Annual Production Rights in each  
9 Subarea to reflect any permanent transfers of such Rights among  
10 Parties.

11 s. Storage Agreements. To enter into Storage  
12 Agreements with any Party in order to accommodate the acquisition  
13 of Supplemental Water. Watermaster may not enter into Storage  
14 Agreements with non-Parties unless such non-Parties become subject  
15 to the provisions of this Judgment and the jurisdiction of the  
16 Court. Such Storage Agreements shall by their terms preclude  
17 operations which will have a substantial adverse impact on any  
18 Producer. If a Party pursuant to a Storage Agreement has provided  
19 for predelivery or postdelivery of Replacement Water for the  
20 Party's use, Watermaster shall at the Party's request credit such  
21 water to the Party's Replacement Obligation. Watermaster shall  
22 adopt uniformly applicable rules for Storage Agreements.  
23 Watermaster shall calculate additions, extractions and losses of  
24 water stored under Storage Agreements and maintain an Annual  
25 account of all such water.

26 t. Subarea Advisory Committee Meetings. To meet on  
27 a regular basis and at least semi-annually with the Subarea  
28 Advisory Committees to review Watermaster activities pursuant to

1 this Judgment and to receive advisory recommendations from the  
2 Subarea Advisory Committees.

3 u. Unauthorized Production. To bring such action  
4 or motion as is necessary to enjoin unauthorized Production as  
5 provided in Paragraph 12 hereinabove.

6 v. Meetings and Records. To ensure that all  
7 meetings and hearings by Watermaster shall be noticed and conducted  
8 according to then current requirements of the Ralph M. Brown Act,  
9 Government Code Sections 54950, et seq. Watermaster files and  
10 records shall be available to any person according to the  
11 provisions of the Public Records Act, Government Code §§ 6200 et  
12 seq.

13 w. Data, Estimates and Procedures. To rely on and  
14 use the best available records and data to support the  
15 implementation of this Judgment. Where actual records of data are  
16 not available, Watermaster shall rely on and use sound scientific  
17 and engineering estimates. Watermaster may use preliminary records  
18 of measurements, and, if revisions are subsequently made,  
19 Watermaster may reflect such revisions in subsequent accounting.  
20 Exhibit "C" sets forth methods and procedures for determining  
21 surface flow components. Watermaster shall use either the same  
22 procedures or procedures that will yield results of equal or  
23 greater accuracy.

24 x. Biological Resource Mitigation. To implement  
25 the Biological Resource Mitigation measures set forth in Exhibit  
26 "H" herein.

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1 C. ASSESSMENTS

2 25. Purpose. Watermaster shall levy and collect  
3 Assessments from the Parties based upon Production in accordance  
4 with the time schedules set forth in Exhibit "D". Watermaster  
5 shall levy and collect such Assessments as follows:

6 a. Administrative Assessments. Administrative  
7 Assessments to fund the Administrative Budget adopted by the  
8 Watermaster pursuant to Paragraph 24(j) shall be levied uniformly  
9 against each acre foot of Production. A Producer who does not  
10 Produce in a given Year shall pay an Administrative Assessment in  
11 amount equal to the lowest MWA assessment for Minimal Producers for  
12 that Year.

13 b. Replacement Water Assessments. Replacement  
14 Water Assessments shall be levied against each Producer on account  
15 of such Producer's Production, after any adjustment pursuant to  
16 Paragraph 24(q), in excess of such Producer's share of the Free  
17 Production Allowance in each Subarea during the prior Year.

18 c. Makeup Water Assessments. Makeup Water  
19 Assessments shall be levied against each Producer in each Subarea  
20 on account of each acre-foot of Production therein which does not  
21 bear a Replacement Assessment hereunder, after any adjustment  
22 pursuant to Paragraph 24(q), to pay all necessary costs of  
23 satisfying the Makeup Obligation, if any, of that Subarea.

24 d. Biological Resource Assessment. To establish  
25 and, to the extent needed, to maintain the Biological Resource  
26 Trust Fund balance at one million dollars (in 1993 dollars)  
27 pursuant to Paragraph 24(x) and Exhibit "H", a Biological Resource  
28 Assessment in an amount not to exceed fifty cents (in 1993 dollars)



1 for each acre-feet of Production shall be levied uniformly against  
2 each producer except the California Department of Fish and Game.

3 e. MWA Assessment of Minimal Producers. The MWA  
4 shall identify and assess Minimal Producers through its own  
5 administrative procedures, and not acting as Watermaster.

6 26. Procedure. Each Party hereto is ordered to pay the  
7 Assessments herein provided for, which shall be levied and  
8 collected in accordance with the procedures and schedules set forth  
9 in Exhibit "D". Any Assessment which becomes delinquent, as  
10 defined in Paragraph 7 of Exhibit "D", shall bear interest at the  
11 then current San Bernardino County property tax delinquency rate  
12 Said interest rate shall be applicable to any said delinquent  
13 Assessment from the due date thereof until paid. Such delinquent  
14 Assessment, together with interest thereon, costs of suit,  
15 attorneys fees and reasonable costs of collection, may be collected  
16 pursuant to motion giving notice to the delinquent Party only, or  
17 Order to Show Cause proceeding, or such other lawful proceeding as  
18 may be instituted by the Watermaster; and shall, if provided for in  
19 the MWA Act, constitute a lien on the property of the Party as of  
20 the same time and in the same manner as does the tax lien securing  
21 County property taxes. The Watermaster shall Annually certify a  
22 list of all such unpaid delinquent Assessments to the MWA (in  
23 accordance with applicable provisions of the MWA Act). The MWA (in  
24 accordance with applicable provisions of the MWA Act) shall include  
25 the names of those Parties and the amounts of the liens in its list  
26 to the County Assessor's Office in the same manner and at the same  
27 time as it does its administrative assessments. MWA shall account  
28 for receipt of all collections of Assessments collected pursuant to

1 this Judgment, and shall pay such amounts collected pursuant to  
2 this Judgment to the Watermaster. The Watermaster shall also have  
3 the ability to enjoin production of those Persons who do not pay  
4 Assessments pursuant to this Judgment.

5           27.     Availability of Supplemental Water.       All  
6 Replacement and Makeup Water Assessments collected by the  
7 Watermaster shall be used to acquire Supplemental Water from MWA.  
8 Watermaster shall determine when to request Supplemental Water from  
9 MWA and shall determine the amount of Supplemental Water to be  
10 requested. MWA shall use its best efforts to acquire as much  
11 Supplemental Water as possible in a timely manner. If MWA  
12 encounters delays in the acquisition of Supplemental Water which,  
13 due to cost increases, results in collected assessment proceeds  
14 being insufficient to purchase all Supplemental Water for which the  
15 Assessments were made, MWA shall purchase as much water as the  
16 proceeds will allow when the water becomes available. If available  
17 Supplemental Water is insufficient to meet all Makeup and  
18 Replacement Water obligations, Watermaster shall allocate the  
19 Supplemental Water for delivery to the Subareas on an equitable and  
20 practicable basis pursuant to duly adopted Watermaster rules and  
21 regulations, giving preference to: First, Transition Zone  
22 Replacement Water Obligations as set forth in Exhibit "G"; Second,  
23 Makeup Water Obligations; and Third, other Replacement Water  
24 Obligations. MWA may acquire Supplemental Water at any time. MWA  
25 shall be entitled to enter into a Storage Agreement with  
26 Watermaster to store water MWA acquires prior to being paid to do  
27 so by Watermaster. Such water, including such water acquired and  
28 stored prior to the date of this Judgment or prior to the entry of

1 a Storage Agreement, may later be used to satisfy MWA's duty under  
2 this paragraph.

3 28. Use of Replacement Water Assessment Proceeds and  
4 Makeup Water Assessment Proceeds. The Proceeds of Replacement  
5 Water Assessments and any interest accrued thereon shall only be  
6 used for the purchase of Replacement Water for that Subarea from  
7 which they were collected. In addition, the proceeds of  
8 Replacement Water Assessments collected on account of Production in  
9 the Transition Zone, except as provided in Exhibit "G", shall only  
10 be used for the purchase of Replacement Water for the Transition  
11 Zone, and the proceeds of Replacement Water Assessments collected  
12 on account of Production in that portion of the Baja Subarea  
13 downstream of the Calico-Newberry fault shall only be used for the  
14 purchase of Replacement Water for that portion of the Baja Subarea  
15 downstream of the Calico-Newberry fault. The proceeds of Makeup  
16 Water Assessments and any interest accrued thereon shall only be  
17 used for the purchase of Makeup Water to satisfy the Makeup  
18 Obligation for which they are collected.

19 29. MWA Annual Report to the Watermaster. MWA shall  
20 Produce and deliver to Watermaster an Annual written report  
21 regarding actions of MWA required by the terms of this Judgment.  
22 The report shall contain: 1) a summary of the actions taken by MWA  
23 in identifying and assessing Minimal Producers, including a report  
24 of Assessments made and collected; 2) a summary of other MWA  
25 activities in collecting Assessment on behalf of Watermaster; 3) a  
26 report of water purchases and water distribution for the previous  
27 Year; 4) actions taken to implement its Regional Water Management  
28 Plan, including actions relating to conveyance facilities referred

1 to in this Judgment. The MWA report will be provided to  
2 Watermaster not less than 30 days prior to the Annual Watermaster  
3 report to the Court required by this Judgment.

4 D. SUBAREA ADVISORY COMMITTEES.

5 30. Authorization. The Producers in each of the five  
6 Subareas are hereby authorized and directed to cause committees of  
7 Producer representatives to be organized and to act as Subarea  
8 Advisory Committees.

9 31. Composition and Election. Each Subarea Advisory  
10 Committee shall consist of five (5) Persons who shall be called  
11 advisors. In the election of advisors, every Party shall be  
12 entitled to one vote for every acre-foot of Base Annual Production  
13 for that Party in that particular Subarea. Parties may cumulate  
14 their votes and give one candidate a number of votes equal to the  
15 number of advisors to be elected multiplied by the number of votes  
16 to which the Party is normally entitled, or distribute the Party's  
17 votes on the same principle among as many candidates as the Party  
18 thinks fit. In any election of advisors, the candidates receiving  
19 the highest number of affirmative votes of the Parties are elected.  
20 Elections shall be held upon entry of this Judgment and thereafter  
21 every third year. In the event a vacancy arises, a temporary  
22 advisor shall be appointed by unanimous decision of the other four  
23 advisors to continue in office until the next scheduled election.  
24 The California Department of Fish and Game shall serve as a  
25 permanent ex-officio member of the Alto and Baja Subarea Advisory  
26 Committees. Rules and regulations regarding organization, meetings  
27 and other activities shall be at the discretion of the individual

28 ///

1 Subarea Advisory Committees, except that all meetings of the  
2 committees shall be open to the public.

3 32. Compensation. The Subarea Advisory Committee  
4 members shall serve without compensation.

5 33. Powers and Functions. The Subarea Advisory  
6 Committee for each Subarea shall act in an advisory capacity only  
7 and shall have the duty to study, review and make recommendations  
8 on all discretionary determinations made or to be made hereunder by  
9 Watermaster which may affect that Subarea.

10 E. TRANSFERABILITY.

11 34. Assignment, Transfer, etc. of Rights. In order to  
12 further the purposes of this Judgment and Physical Solution, any  
13 Base Annual Production Right, or any portion thereof, may be sold,  
14 assigned, transferred, licensed or leased pursuant to the rules and  
15 procedures set forth in Exhibit "F".

16 F. MISCELLANEOUS PROVISIONS.

17 35. Water Quality. Nothing in this Judgment shall be  
18 interpreted as relieving any Party of its responsibilities to  
19 comply with state or federal laws for the protection of water  
20 quality or the provisions of any permits, standards, requirements,  
21 or orders promulgated thereunder.

22 36. Review Procedures. Any action, decision, rule or  
23 procedure of Watermaster pursuant to this Judgment shall be subject  
24 to review by the Court on its own motion or on timely motion by any  
25 Party, as follows:

26 a. Effective Date of Watermaster Action. Any  
27 order, decision or action of Watermaster pursuant to this Judgment  
28 on noticed specific agenda items shall be deemed to have occurred

1 on the date of the order, decision or action.

2 b. Notice of Motion. Any Party, may, by a  
3 regularly noticed motion, petition the Court for review of  
4 Watermaster's action or decision pursuant to this Judgment. The  
5 motion shall be deemed to be filed when a copy, conformed as filed  
6 with the Court, has been delivered to Watermaster together with the  
7 service fee established by Watermaster sufficient to cover the cost  
8 to photocopy and mail the motion to each Party. Watermaster shall  
9 prepare copies and mail a copy of the motion to each Party or its  
10 designee according to the official service list which shall be  
11 maintained by Watermaster according to Paragraph 37. A Party's  
12 obligation to serve notice of a motion upon the Parties is deemed  
13 to be satisfied by filing the motion as provided herein. Unless  
14 ordered by the Court, any such petition shall not operate to stay  
15 the effect of any Watermaster action or decision which is  
16 challenged.

17 c. Time for Motion. A motion to review any  
18 Watermaster action or decision shall be filed within ninety (90)  
19 days after such Watermaster action or decision, except that motions  
20 to review Watermaster Assessments hereunder shall be filed within  
21 thirty (30) days of mailing of notice of the Assessment.

22 d. De Novo Nature of Proceeding. Upon filing of a  
23 petition to review Watermaster action, the Watermaster shall notify  
24 the Parties of a date when the Court will take evidence and hear  
25 argument. The Court's review shall be de novo and the Watermaster  
26 decision or action shall have no evidentiary weight in such  
27 proceeding.

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1 e. Decision. The decision of the Court in such  
2 proceeding shall be an appealable Supplemental Order in this case.  
3 When the same is final, it shall be binding upon Watermaster and  
4 the Parties.

5 f. Payment of Assessments. Payment of Assessments  
6 levied by Watermaster hereunder shall be made pursuant to the time  
7 schedule in Exhibit "D"; notwithstanding any motion for review of  
8 Watermaster actions, decisions, rules or procedures, including  
9 review of Watermaster Assessments.

10 37. Designation of Address for Notice and Service. Each  
11 Party shall designate the name and address to be used for purposes  
12 of all subsequent notices and service herein, either by its  
13 endorsement on the Stipulation for Judgment or by a separate  
14 designation to be filed within thirty (30) days after Judgment has  
15 been entered. Said designation may be changed from time to time by  
16 filing a written notice of such change with Watermaster. Any Party  
17 desiring to be relieved of receiving notices of Watermaster  
18 activity may file a waiver of notice on a form to be provided by  
19 Watermaster. Watermaster shall maintain at all times a current  
20 list of Parties to whom notices are to be sent and their addresses  
21 for purposes of service. Watermaster shall also maintain a full  
22 current list of names and addresses of all Parties or their  
23 successors, as filed herein. Copies of such lists shall be  
24 available to any Person. If no designation is made, a Party's  
25 designee shall be deemed to be, in order of priority: i) the  
26 Party's attorney of record; ii) if the Party does not have an  
27 attorney of record, the Party itself at the address on the  
28 Watermaster list.

1           38. Service of Documents. Delivery to or service upon  
2 any Party by Watermaster, by any other Party, or by the Court, of  
3 any document required to be served upon or delivered to a Party  
4 under or pursuant to the Judgment shall be deemed made if made by  
5 Deposit thereof (or by copy thereof) in the mail, first class,  
6 postage prepaid, addressed to the designee of the Party and at the  
7 address shown in the latest designation filed by that Party.

8           39. No Abandonment of Rights. It is in the interest of  
9 reasonable beneficial use of the Basin Area and its water supply  
10 that no Party be encouraged to take and use more water in any Year  
11 than is actually required. Failure to Produce all of the water to  
12 which a Party is entitled hereunder shall not, in and of itself, be  
13 deemed or constitute an abandonment of such Party's right, in whole  
14 or in part.

15           40. Intervention After Judgment. Any person who is not  
16 a Party or successor to a Party and who proposes to Produce water  
17 from the Basin Area may seek to become a Party to this Judgment  
18 through a Stipulation for Intervention entered into with  
19 Watermaster. Watermaster may execute said Stipulation on behalf of  
20 the other Parties herein but such Stipulation shall not preclude a  
21 Party from opposing such Intervention at the time of the Court  
22 hearing thereon. Said Stipulation for Intervention must thereupon  
23 be filed with the Court, which will consider an order confirming  
24 said intervention following thirty (30) days' notice to the  
25 Parties. Thereafter, if approved by the Court, such intervenor  
26 shall be a Party bound by this Judgment and entitled to the rights  
27 and privileges accorded under the Physical Solution herein.

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1           41. Recordation of Notice. MWA shall within sixty (60)  
2 days following entry of this Judgment record in the Office of the  
3 County Recorder of the County of San Bernardino a notice  
4 substantially complying with the notice content requirements set  
5 forth in Section 2529 of the California Water Code.

6           42. Judgment Binding on Successors, etc. Subject to  
7 specific provisions hereinbefore contained, this Judgment and all  
8 provisions thereof are applicable to and binding upon and inure to  
9 the benefit of not only the Parties to this action, but as well to  
10 their respective heirs, executors, administrators, successors,  
11 assigns, lessees, licensees and to the agents, employees and  
12 attorneys in fact of any such Persons.

13           43. Costs. No Party stipulating to this Judgment shall  
14 recover any costs or attorneys fees in this proceeding from another  
15 stipulating Party.

16           44. Entry of Judgment. The Clerk shall enter this  
17 Judgment.

18 Dated: **JAN 10** 1996

19  
20 **E. MICHAEL KAISER**

21 E. Michael Kaiser, Judge  
22 Superior Court of the State  
23 of California for the  
24 County of Riverside  
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EXHIBIT A

MAP OF MOJAVE BASIN AREA

[INDEX MAP AND DETAIL SHEET CONSISTING OF 42  
1" = 4,000' SCALE MAPS COVERING THE BASIN  
AREA; THE MAP IS ON DISPLAY AT THE OFFICE OF  
THE MOJAVE WATER AGENCY, 22450 HEADQUARTERS,  
APPLE VALLEY, CA 92307 AND ON FILE WITH THE  
COURT]

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EXHIBIT B

PRODUCTION TABLES

CONTENTS

TABLE B-1: TABLE SHOWING BASE ANNUAL PRODUCTION AND BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN EACH SUBAREA AND FREE PRODUCTION ALLOWANCES FOR EACH SUBAREA FOR THE FIRST FIVE YEARS AFTER ENTRY OF THE INTERLOCUTORY JUDGMENT

TABLE B-2: TABLE SHOWING TOTAL VERIFIED PRODUCTION, BASE ANNUAL PRODUCTION AND RECIRCULATED WATER PRODUCTION FOR AQUACULTURE AND FOR RECREATIONAL LAKES

~~12/30/92~~  
~~01/30/93~~  
~~02/28/93~~  
~~04/10/93~~  
~~04/30/93~~  
09/25/95

EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBAREA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
ABSHIRE, DAVID V	24	0.1093	24	22	21	20	19
ANDERSON, ROSS C & BETTY J	34	0.1548	34	32	30	28	27
BAR H MUTUAL WATER COMPANY	53	0.2414	53	50	47	45	42
BELL, CHUCK	494	2.2497	494	469	444	419	395
BURNS, BOBBY J & EVELYN J	1,300	5.9204	1,300	1,235	1,170	1,105	1,040
CASA COLINA FOUNDATION	90	0.4099	90	85	81	76	72
CENTER WATER CO	40	0.1822	40	38	36	34	32
CLUB VIEW PARTNERS	1,276	5.8111	1,276	1,212	1,148	1,084	1,020
CROSS, LAWRENCE E	23	0.1047	23	21	20	19	18
CRYSTAL HILLS WATER COMPANY	194	0.8835	194	184	174	164	155
DAHLQUIST, GEORGE R	594	2.7052	594	564	534	504	475
DELPERDANG, ROBERT H	56	0.2550	56	53	50	47	44
DESERT DAWN MUTUAL WATER COMPANY	15	0.0683	15	14	13	12	12
GABTA, TRINIDAD	512	2.3317	512	486	460	435	409
GAYJIKIAN, SAMUEL & HAZEL	102	0.4645	102	96	91	86	81
GRACETOWN INVESTMENT CO - JETCO PROP FUND	752	3.4247	752	714	676	639	601
GUBLER, HANS	30	0.1366	30	28	27	25	24
HAL-DOR LTD	23	0.1047	23	21	20	19	18
HANDLEY, DON R & MARY ANN	73	0.3325	73	69	65	62	58
HART, MERRILL W	473	2.1541	473	449	425	402	378
HERT, SCOTT	276	1.2569	276	262	248	234	220
HI-GRADE MATERIALS	442	2.0129	442	419	397	375	353
HITCHIN LUCERNE, INC	16	0.0729	16	15	14	13	12
JAMS RANCH	28	0.1275	28	26	25	23	22

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09/25/95

EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBARRA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) <sup>3</sup>				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
JUBILEE MUTUAL WATER COMPANY	142	0.6467	142	134	127	120	113
JUNIPER RIVIERA COUNTY WATER DISTRICT	37	0.1685	37	35	33	31	29
LEE, DOO HWAN	78	0.3552	78	74	70	66	62
LOPEZ, BALTAZAR	385	1.7533	385	365	346	327	308
LUA, ANTONIO	348	1.5848	348	330	313	295	278
LUCERNE VALLEY MUTUAL WATER COMPANY	54	0.2459	54	51	48	45	43
LUCERNE VALLEY PARTNERS	1,213	5.5242	1,213	1,152	1,091	1,031	970
LUCERNE VISTA WATER CO	21	0.0956	21	19	18	17	16
MITSUBISHI CEMENT CORPORATION	1,299	5.9158	1,299	1,234	1,169	1,104	1,039
MONACO INVESTMENT COMPANY	70	0.3188	70	66	63	59	56
MOSS, LAWRENCE W & HELEN J	43	0.1958	43	40	38	36	34
PARK, CHANHO	597	2.7188	597	567	537	507	477
PARK, JEONG, IL & HEA JA	96	0.4372	96	91	86	81	76
PEREZ, EVA	247	1.1249	247	234	222	209	197
PETTIGREW, DAN	1,422	6.4760	1,422	1,350	1,279	1,208	1,137
PETTIGREW, HOWARD L	1,500	6.8312	1,500	1,425	1,350	1,275	1,200
PLUESS-STAUFER CALIFORNIA INC	23	0.1047	23	21	20	19	18
REED, MIKE	58	0.2641	58	55	52	49	46
ROGERS, ROY	1,449	6.5990	1,449	1,376	1,304	1,231	1,159
SAN BERNARDINO CO SERVICE AREA 29	21	0.0956	21	19	18	17	16
SEALS, LAWRENCE	113	0.5146	113	107	101	96	90
SON'S RANCH	140	0.6376	140	133	126	119	112
SOUTHERN CALIFORNIA WATER COMPANY	178	0.8106	178	169	160	151	142
SPECIALTY MINERALS, INC	42	0.1913	42	39	37	35	33

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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION  (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
SPILLMAN, JAMES R & NANCY J	23	0.1047	23	21	20	19	18
STEWART WATER COMPANY	54	0.2459	54	51	48	45	43
STRINGER, W EDWARD	573	2.6095	573	544	515	487	458
THE CUSHENBURY TRUST, C/O SPECIALTY MINERALS, INC	10	0.0455	10	9	9	8	8
TURNER, LOYD & CAROL	77	0.3507	77	73	69	65	61
VISOSKY, JOSEPH F JR	1,120	5.1006	1,120	1,064	1,008	952	896
WEISER, SIDNEY & RAQUEL	90	0.4099	90	85	81	76	72
WILLOW WELLS MUTUAL WATER COMPANY	30	0.1366	30	28	27	25	24

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BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBAREA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
MINIMAL PRODUCER POOL	2,000	9.1083	2,000	1,900	1,800	1,700	1,600
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	1,485	6.7629					
ESTE SUBAREA TOTALS =	21,958	100					

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN OESTE SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

OESTE SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION  (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
AEROCHEM, INC	660	5.3645	660	627	594	561	528
BROWN, DOUG & SUE	46	0.3739	46	43	41	39	36
CHAMISAL MUTUAL	96	0.7803	96	91	86	81	76
DAVIS, PAUL	19	0.1544	19	18	17	16	15
DOSSEY, D A	14	0.1138	14	13	12	11	11
MEADOWBROOK DAIRY	2,335	18.9791	2,335	2,218	2,101	1,984	1,868
RESSEGUE, JOHN & BILL	259	2.1052	259	246	233	220	207
SAN BERNARDINO CO SERVICE AREA 70G	110	0.8941	110	104	99	93	88
SAN BERNARDINO CO SERVICE AREA 70L	1,306	10.6153	1,306	1,240	1,175	1,110	1,044
THORESON, ROBERT F & A KATHLEEN	40	0.3251	40	38	36	34	32
TROGER, RICHARD H	112	0.9103	112	106	100	95	89
VAN DAM BROTHERS	1,860	15.1183	1,860	1,767	1,674	1,581	1,488



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EXHIBIT B  
TABLE B-1  
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BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN OESTE SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

OESTE SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION  (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
MINIMAL PRODUCER POOL	1,500	12.1921	1,500	1,425	1,350	1,275	1,200
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	3,946	32.0735					
OESTE SUBAREA TOTALS =	12,303	100					

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
ABBOND, EDWARD & GRACE	28	0.0229	28	26	25	23	22
ABBOTT, LEONARD C	284	0.2321	284	269	255	241	227
ADELANTO, CITY OF	1,573	1.2855	1,573	1,494	1,415	1,337	1,258
ADELANTO, CITY OF - GEORGE A F B	3,433	2.8055	3,433	3,261	3,089	2,918	2,746
AGCON, INC	384	0.3138	384	364	345	326	307
APPLE VALLEY COUNTRY CLUB	709	0.5794	709	673	638	602	567
APPLE VALLEY DEVELOPMENT	724	0.5917	724	687	651	615	579
APPLE VALLEY FOOTHILL CO WATER DISTRICT	167	0.1365	167	158	150	141	133
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT	125	0.1022	125	118	112	106	100
APPLE VALLEY RANCHOS WATER COMPANY	13,022	10.6419	13,022	12,370	11,719	11,068	10,417
APPLE VALLEY RECREATION & PARKS	45	0.0368	45	42	40	38	36
APPLE VALLEY VIEW MUTUAL WATER CO	36	0.0294	36	34	32	30	28
APPLE VALLEY, TOWN OF	298	0.2435	298	283	268	253	238
ARC LAS FLORES	6,331	5.1739	6,331	6,014	5,697	5,381	5,064
BACA, ENRIQUE	74	0.0605	74	70	66	62	59
BALDY MESA WATER DISTRICT	1,495	1.2218	1,495	1,420	1,345	1,270	1,196
BASS, NEWTON T	514	0.4201	514	488	462	436	411
BASTIANON, REMO	77	0.0629	77	73	69	65	61
BASURA, STEVE	25	0.0204	25	23	22	21	20
BEINSCHROTH, A J	90	0.0736	90	85	81	76	72
BOYCE, KENNETH & WILLA	102	0.0834	102	96	91	86	81
BROWN, BOBBY G & VALERIA R	42	0.0343	42	39	37	35	33
BURNS, ULYSSES & ANNIE L	164	0.1340	164	155	147	139	131
CARDOZO, MANUEL & MARIA	909	0.7429	909	863	818	772	727

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09/25/95

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TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION  (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
CDFG - MOJAVE NARROWS REGIONAL PARK	2,107	1.7219	2,107	2,001	1,896	1,790	1,685
CDFG - MOJAVE RIVER FISH HATCHERY	20	0.0163	20	19	18	17	16
CLARK, KENNETH R	223	0.1822	223	211	200	189	178
CLEAR VIEW FARMS	501	0.4094	501	475	450	425	400
COPELAND, ET AL (C/O DON W. LITTLE)	175	0.1430	175	166	157	148	140
CRAMER, MARGARET MUIR	280	0.2288	280	266	252	238	224
CUNNINGHAM, WILLIAM	29	0.0237	29	27	26	24	23
DEXTER, CLAIR F	175	0.1430	175	166	157	148	140
DEXTER, J P	515	0.4209	515	489	463	437	412
DIBERNARDO, JOHN	203	0.1659	203	192	182	172	162
DOLCH, ROBERT & JUDY	426	0.3481	426	404	383	362	340
DOMBROWSKI, MICHAEL W & SUSAN M	19	0.0155	19	18	17	16	15
DOWSE, PHILIP	20	0.0163	20	19	18	17	16
EVENSON, EDWIN H & JOYCELAINE	70	0.0572	70	66	63	59	56
FISHER, DOLORES DR	48	0.0392	48	45	43	40	38
FISHER, JEROME	633	0.5173	633	601	569	538	506
FITZWATER, R E	291	0.2378	291	276	261	247	232
GARCIA, SONIA L	288	0.2354	288	273	259	244	230
GOMBZ, CIRIL - LIVING TRUST	330	0.2697	330	313	297	280	264
GREEN ACRES ESTATES	25	0.0204	25	23	22	21	20
GULBRANSON, MERLIN	163	0.1332	163	154	146	138	130
HELENDALE SCHOOL DISTRICT	18	0.0147	18	17	16	15	14
HESPERIA GOLF AND COUNTRY CLUB	678	0.5541	678	644	610	576	542
HESPERIA WATER DISTRICT	12,213	9.9808	12,213	11,602	10,991	10,381	9,770

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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
HI-GRADE MATERIALS	149	0.1218	149	141	134	126	119
HODGE, STANLEY W	67	0.0548	67	63	60	56	53
HOLWAY, ROBERT	88	0.0719	88	83	79	74	70
HRUBIK, THOMAS A	3,862	3.1561	3,862	3,668	3,475	3,282	3,089
INDUSTRIAL ASPHALT	109	0.0891	109	103	98	92	87
JESS RANCH WATER COMPANY	7,480	6.1129	7,480	7,106	6,732	6,358	5,984
JOHNSON, LARRY & CARLEAN	82	0.0670	82	77	73	69	65
JOHNSON, RONALD	31	0.0253	31	29	27	26	24
JOHNSTON, HARRIET AND LARRY W	127	0.1038	127	120	114	107	101
KEMPER CAMPBELL RANCH	473	0.3865	473	449	425	402	378
LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT	658	0.5377	658	625	592	559	526
LAWSON, ERNEST & BARBARA	15	0.0123	15	14	13	12	12
LENHERT, RONALD & TONI	37	0.0302	37	35	33	31	29
LEWIS HOMES OF CALIFORNIA	1,693	1.3836	1,693	1,608	1,523	1,439	1,354
LONGMAN, JACK	115	0.0940	115	109	103	97	92
LOUNSBURY, J PETER & CAROLYN	208	0.1700	208	197	187	176	166
LOW, ROBERT	399	0.3261	399	379	359	339	319
LUCKEY, MANLEY J	800	0.6538	800	760	720	680	640
LUTH, KEN	27	0.0221	27	25	24	22	21
MARIANA RANCHOS COUNTY WATER DISTRICT	245	0.2002	245	232	220	208	196
MCCALL, REX	44	0.0360	44	41	39	37	35
MCINNIS, WILLIAM S	30	0.0245	30	28	27	25	24
MITCHELL, ROBIN & JUDITH	36	0.0294	36	34	32	30	28
MURPHY, BERNARD H	25	0.0204	25	23	22	21	20

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BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION  (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
MURPHY, BERNARD TRUST	162	0.1324	162	153	145	137	129
MURPHY, KENNETH	42	0.0343	42	39	37	35	33
MUTUAL FUNDING CORP	101	0.0825	101	95	90	85	80
NAVAJO MUTUAL WATER CO	88	0.0719	88	83	79	74	70
NUNN, DONALD & PEARL	66	0.0539	66	62	59	56	52
O'BRYANT, ROBERT C & BARBARA	107	0.0874	107	101	96	90	85
ORMSBY, HARRY G	386	0.3154	386	366	347	328	308
PALISADES RANCH	824	0.6734	824	782	741	700	659
PARKER, DAVID E	37	0.0302	37	35	33	31	29
PEARL, ALICE	147	0.1201	147	139	132	124	117
PEARSON, DERYL B	22	0.0180	22	20	19	18	17
PERRY, THOMAS A	35	0.0286	35	33	31	29	28
PETTIS TRUST	126	0.1030	126	119	113	107	100
PHENIX PROPERTIES LTD	652	0.5328	652	619	586	554	521
PITTMAN, LEROY W	148	0.1209	148	140	133	125	118
POLICH, LEE & DONNA	65	0.0531	65	61	58	55	52
RANCHERITOS MUTUAL WATER CO	169	0.1381	169	160	152	143	135
RIVERSIDE CEMENT CO - ORO GRANDE PLANT	3,452	2.8211	3,452	3,279	3,106	2,934	2,761
ROGERS, ROY (ORO GRANDE RANCH)	115	0.0940	115	109	103	97	92
RUDMAN, ROBERT T	300	0.2452	300	285	270	255	240
RUE RANCH	30	0.0245	30	28	27	25	24
SAN BERNARDINO CO SERVICE AREA 42	465	0.3800	465	441	418	395	372
SAN BERNARDINO CO SERVICE AREA 64	3,822	3.1234	3,822	3,630	3,439	3,248	3,057
SAN BERNARDINO CO SERVICE AREA 70C	2,346	1.9172	2,346	2,228	2,111	1,994	1,876

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BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
SAN BERNARDINO CO SERVICE AREA 70J	1,005	0.8213	1,005	954	904	854	804
SAN BERNARDINO CO SERVICE AREA 70L	355	0.2901	355	337	319	301	284
SAN FILIPPO, JOSEPH & SHELLEY	35	0.0286	35	33	31	29	28
SILVER LAKES ASSOCIATION	3,987	3.2583	3,987	3,787	3,588	3,388	3,189
SOUTHDOWN, INC	1,519	1.2414	1,519	1,443	1,367	1,291	1,215
SOUTHERN CALIFORNIA WATER COMPANY	940	0.7682	940	893	846	799	752
SPRING VALLEY LAKE ASSOCIATION	3,056	2.4974	3,056	2,903	2,750	2,597	2,444
SPRING VALLEY LAKE COUNTRY CLUB	977	0.7984	977	928	879	830	781
STORM, RANDALL	62	0.0507	62	58	55	52	49
SUDMEYER, GLENN W	121	0.0989	121	114	108	102	96
SUMMIT VALLEY RANCH	452	0.3694	452	429	406	384	361
TATRO, RICHARD K & SANDRA A	280	0.2288	280	266	252	238	224
TATUM, JAMES B	829	0.6775	829	787	746	704	663
TAYLOR, ALLEN C / HAYMAKER RANCH	456	0.3727	456	433	410	387	364
THOMAS, S DALE	440	0.3596	440	418	396	374	352
THOMAS, WALTER	36	0.0294	36	34	32	30	28
THOMPSON, JAMES A	418	0.3416	418	397	376	355	334
THOMPSON, RODGER	76	0.0621	76	72	68	64	60
THRASHER, GARY	373	0.3048	373	354	335	317	298
THUNDERBIRD COUNTY WATER DISTRICT	118	0.0964	118	112	106	100	94
TURNER, ROBERT	70	0.0572	70	66	63	59	56
VAIL, JOSEPH B & PAULA B	126	0.1030	126	119	113	107	100
VAN BURGER, CARL	710	0.5802	710	674	639	603	568
VAN LEEUWEN FAMILY TRUST	341	0.2787	341	323	306	289	272

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ALTO SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION  (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
VANNI, MIKE	54	0.0441	54	51	48	45	43
VICTOR VALLEY COMMUNITY COLLEGE DIST	240	0.1961	240	228	216	204	192
VICTOR VALLEY WATER DISTRICT	13,354	10.9133	13,354	12,686	12,018	11,350	10,683
VICTORVILLE, CITY OF	12	0.0098	12	11	10	10	9
VOGLER, ALBERT H	132	0.1079	132	125	118	112	105
WACKERN, CAESAR	1,635	1.3362	1,635	1,553	1,471	1,389	1,308
WAKULA, JOHN	291	0.2378	291	276	261	247	232
WARD, KEN & BARBARA	65	0.0531	65	61	58	55	52
WEBER, DAVE	80	0.0654	80	76	72	68	64
WEST, CAROLYN & SMITH, RICHARD	24	0.0196	24	22	21	20	19
WEST, HOWARD & SUZY	72	0.0588	72	68	64	61	57
WHITTINGHAM, RICHARD V	15	0.0123	15	14	13	12	12
YEAGER, E L - CONSTRUCTION COMPANY INC	34	0.0278	34	32	30	28	27

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ALTO SUBAREA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
MINIMAL PRODUCER POOL	4,000	3.2689	4,000	3,800	3,600	3,400	3,200
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	4,967	4.0592					
ALTO SUBAREA TOTALS =	122,365	100					

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.



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TABLE B-1  
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BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN CENTRO SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST <sup>3</sup> YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
AGCON, INC	0	0.0000	0	0	0	0	0
AGUAYO, JEANETTE L	212	0.3742	212	201	190	180	169
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	120	0.2118	120	114	108	102	96
AVDEEF, THOMAS	34	0.0600	34	32	30	28	27
AZTEC FARM DEVELOPMENT COMPANY	220	0.3883	220	209	198	187	176
BARNES, FAY - EXECUTOR OF ESTATE OF WAYNE BARNES	243	0.4289	243	230	218	206	194
BROMMER, HARVIN	361	0.6372	361	342	324	306	288
BURNS, RITA J & PAMELA E	16	0.0282	16	15	14	13	12
CHAFI, LARRY R	96	0.1694	96	91	86	81	76
CHOI, YONG IL & JOUNG AE	38	0.0671	38	36	34	32	30
CHRISTISON, JOEL	75	0.1324	75	71	67	63	60
COOK, KWON W	169	0.2983	169	160	152	143	135
DE VRIES, NEIL	3,800	6.7070	3,800	3,610	3,420	3,230	3,040
DESERT COMMUNITY BANK	156	0.2753	156	148	140	132	124
DURAN, FRANK T	50	0.0883	50	47	45	42	40
GAINES, JACK	117	0.2065	117	111	105	99	93
GBSIRIECH, WAYNE	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	131	124	117	110
GRIEDER, RAYMOND H & DORISANNE	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & MILLIE D	21	0.0371	21	19	18	17	16
GROEN, CORNELIS	1,043	1.8409	1,043	990	938	886	834
HANIFY, DBA - WHITE BEAR RANCH	152	0.2683	152	144	136	129	121
HARMSEN, JAMES & RUTH ANN	1,522	2.6863	1,522	1,445	1,369	1,293	1,217
HARPER LAKE COMPANY	1,433	2.5293	1,433	1,361	1,289	1,218	1,146

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CENTRO SUBAREA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
HI DESERT MUTUAL WATER CO	34	0.0600	34	32	30	28	27
HILEMAN, KATHERINE	19	0.0335	19	18	17	16	15
HILL, MELVIN	2,335	4.1213	2,335	2,218	2,101	1,984	1,868
HOY, MIKE	632	1.1155	632	600	568	537	505
JORDAN, RAYMOND	460	0.8119	460	437	414	391	368
JUSTICE, CHRIS	421	0.7431	421	399	378	357	336
KING, GENEVIEVE E	69	0.1218	69	65	62	58	55
LEE, SEPOONG ETAL & WOO POONG	77	0.1359	77	73	69	65	61
LEYERLY, GENEVA	65	0.1147	65	61	58	55	52
LEYERLY, RICHARD	862	1.5214	862	818	775	732	689
LUDINGTON, JAMES E & JO ANN	58	0.1024	58	55	52	49	46
LYON, LOUIS & BRIKA	130	0.2295	130	123	117	110	104
MARTIN, LENDELL	14	0.0247	14	13	12	11	11
MCCOLLUM, CHARLES L	347	0.6125	347	329	312	294	277
MEAD, G C	90	0.1589	90	85	81	76	72
MEYERS, LONNIE	27	0.0477	27	25	24	22	21
MITCHELL, CHARLES A	201	0.3548	201	190	180	170	160
MOFFITT, THOMAS R & EDITH I	62	0.1094	62	58	55	52	49
MOST, MILTON W	9,660	17.0500	9,660	9,177	8,694	8,211	7,728
NELSON, MILDRED L	52	0.0918	52	49	46	44	41
NEWBERRY SPRINGS COMPANY, INC	2,489	4.3931	2,489	2,364	2,240	2,115	1,991
OHAI, REYNOLDS & DOROTHY	137	0.2418	137	130	123	116	109
OROPEZA, JOSE M	190	0.3354	190	180	171	161	152
OSTERKAMP, GEROLD	260	0.4589	260	247	234	221	208

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			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
OWL ROCK PRODUCTS COMPANY	466	0.8225	466	442	419	396	372
PG & B	1,657	2.9246	1,657	1,574	1,491	1,408	1,325
REDDY, BOMMI V & KARUNA V	24	0.0424	24	22	21	20	19
ROWLAND, JAMES & HELEN	22	0.0388	22	20	19	18	17
RUISCH, DALE W	650	1.1473	650	617	585	552	520
SHIRKEY, ALAN G & MARY E	35	0.0618	35	33	31	29	28
SMITH, ROBERT A	43	0.0759	43	40	38	36	34
SOPPELAND, WAYNE	783	1.3820	783	743	704	665	626
SOUTHERN CALIFORNIA WATER COMPANY	11,309	19.9605	11,309	10,743	10,178	9,612	9,047
SPINK, WALTHALL	44	0.0777	44	41	39	37	35
ST CHARLES, DONALD B	609	1.0749	609	578	548	517	487
SUN 'N SKY COUNTRY CLUB	337	0.5948	337	320	303	286	269
TALLAKSON, WILLIAM V	17	0.0300	17	16	15	14	13
TILLEMA, HAROLD	874	1.5426	874	830	786	742	699
VAN DAM, ELBERT & SUSAN	722	1.2743	722	685	649	613	577
VAN LEEUWEN, JOHN	1,922	3.3923	1,922	1,825	1,729	1,633	1,537
VAN VLIET, HENDRIKA	820	1.4473	820	779	738	697	656
VANHOF, LUTHER C	23	0.0406	23	21	20	19	18
VERNOLA, PAT	3,116	5.4998	3,116	2,960	2,804	2,648	2,492
VISSER, ANNIE	91	0.1606	91	86	81	77	72
YANG, YOUNG MO	371	0.6548	371	352	333	315	296
YKEMA HARMSSEN DAIRY	1,000	1.7650	1,000	950	900	850	800

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			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
MINIMAL PRODUCER POOL	2,000	3.5300	2,000	1,900	1,800	1,700	1,600
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	864	1.5250					
CENTRO SUBAREA TOTALS =	56,657	100					

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION  (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
AKE, CHARLES J & MARJORIE M	23	0.0333	23	21	20	19	18
ANGERSER, ROBERT J & PEGGY	24	0.0347	24	22	21	20	19
ANTELOPE VALLEY DAIRY	5,430	7.8597	5,430	5,158	4,887	4,615	4,344
ARGUELLES, ALFREDO	1,047	1.5155	1,047	994	942	889	837
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	80	0.1158	80	76	72	68	64
BAGLEY, ROY	20	0.0289	20	19	18	17	16
BALDERRAMA, ALFRED & LINDA	250	0.3619	250	237	225	212	200
BALL, DAVID P	81	0.1172	81	76	72	68	64
BARAK, RICHARD	132	0.1911	132	125	118	112	105
BARBER, JAMES B	167	0.2417	167	158	150	141	133
BARSTOW CALICO K O A	24	0.0347	24	22	21	20	19
BAUR, KARL & RITA	26	0.0376	26	24	23	22	20
BEDINGFIELD, LYNDLELL & CHARLENE	56	0.0811	56	53	50	47	44
BENTON, PHILIP G	35	0.0507	35	33	31	29	28
BORGOGNO, STEVEN & LILLIAN B	1,844	2.6691	1,844	1,751	1,659	1,567	1,475
BOWMAN, EDWIN L	31	0.0449	31	29	27	26	24
BROWN, RONALD A	1,080	1.5632	1,080	1,026	972	918	864
BROWY, ORVILLE & LOUISE	33	0.0478	33	31	29	28	26
BRUINS, NICHOLAS	29	0.0420	29	27	26	24	23
CALICO LAKES HOMEOWNERS ASSOCIATION	1,031	1.4923	1,031	979	927	876	824
CALIF DEPT OF TRANSPORTATION	71	0.1028	71	67	63	60	56
CAMPBELL, M A & DIANNE	22	0.0318	22	20	19	18	17
CARTER, JOHN THOMAS	746	1.0798	746	708	671	634	596
CDFG - CAMP CADY	14	0.0203	14	13	12	11	11

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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION  (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
CHANG, TIMOTHY & JANE	18	0.0261	18	17	16	15	14
CHASTAIN, W C	100	0.1447	100	95	90	85	80
CHEYENNE LAKE, INC	122	0.1766	122	115	109	103	97
CHIAO MEI DEVELOPMENT	451	0.6528	451	428	405	383	360
CHO BROTHERS RANCH	758	1.0972	758	720	682	644	606
CHUANG, MARSHAL	70	0.1013	70	66	63	59	56
CONNER, WILLIAM H	25	0.0362	25	23	22	21	20
COOL WATER RANCH	76	0.1100	76	72	68	64	60
CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	447	0.6470	447	424	402	379	357
DAGGETT COMMUNITY SERVICES DISTRICT	235	0.3402	235	223	211	199	188
DALJO CORPORATION	31	0.0449	31	29	27	26	24
DAVIS, RONALD & DONNA	53	0.0767	53	50	47	45	42
DE JONG, ALAN L	1,648	2.3854	1,648	1,565	1,483	1,400	1,318
DENNISON, QUENTIN D	29	0.0420	29	27	26	24	23
DESERT LAKES CORPORATION - (LAKE DOLORES)	483	0.6991	483	458	434	410	386
DOCIMO, DONALD P & PATRICIA J	23	0.0333	23	21	20	19	18
DONALDSON, JERRY & BEVERLY	90	0.1303	90	85	81	76	72
ELLISON, SUSAN	15	0.0217	15	14	13	12	12
EVKHANIAN, JAMES H	110	0.1592	110	104	99	93	88
FAWCETT, EDWARD C	20	0.0289	20	19	18	17	16
FELIX, ALAN E & CAROL L	36	0.0521	36	34	32	30	28
PERRO, DENNIS & NORMA	32	0.0463	32	30	28	27	25
FRIEND, JOSEPH & DEBORAH	60	0.0868	60	57	54	51	48
FUNDAMENTAL CHRISTIAN ENDRAVOR	285	0.4125	285	270	256	242	228

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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
GARCIA, DANIEL	23	0.0333	23	21	20	19	18
GOLD, HAROLD	249	0.3604	249	236	224	211	199
GRAVES, CHESTER B	32	0.0463	32	30	28	27	25
HAIGH, WHILLYN & MARGARET	32	0.0463	32	30	28	27	25
HALL, LARRY	23	0.0333	23	21	20	19	18
HARALIK, BESS & ROBERT	27	0.0391	27	25	24	22	21
HARDESTY, LESLIE E & BECKY J	47	0.0680	47	44	42	39	37
HARSON, NICHOLAS & MARY	30	0.0434	30	28	27	25	24
HARTER FARMS	1,083	1.5676	1,083	1,028	974	920	866
HARTER, JOE & SUE	738	1.0682	738	701	664	627	590
HARTLEY, LONNIE	19	0.0275	19	18	17	16	15
HARVEY, FRANK	38	0.0550	38	36	34	32	30
HENDLEY, RICK & BARBARA	48	0.0695	48	45	43	40	38
HIETT, PATRICIA J	16	0.0232	16	15	14	13	12
HILARIDES, FRANK	1,210	1.7514	1,210	1,149	1,089	1,028	968
HOLLISTER, ROBERT H & RUTH M	44	0.0637	44	41	39	37	35
HONG, PAUL B & MAY	95	0.1375	95	90	85	80	76
HORTON'S CHILDREN'S TRUST	106	0.1534	106	100	95	90	84
HORTON, JOHN MD	183	0.2649	183	173	164	155	146
HOSKING, JOHN W & JEAN	94	0.1361	94	89	84	79	75
HUBBARD, ESTER & MIZUNO, ARLEAN	28	0.0405	28	26	25	23	22
HUNT, RALPH M & LILLIAN F	31	0.0449	31	29	27	26	24
HUTCHISON, WILLIAM O	901	1.3042	901	855	810	765	720
HYATT, JAMES & BRENDA	210	0.3040	210	199	189	178	168

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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBARRA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBARRA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
IRVIN, BERTRAND W	29	0.0420	29	27	26	24	23
J V A AIR INC	54	0.0782	54	51	48	45	43
JACKSON, RAY	20	0.0289	20	19	18	17	16
JOHNSON, JAMES R	247	0.3575	247	234	222	209	197
JUSTICE, CHRIS	6	0.0087	6	5	5	5	4
KAPLAN, ABRAHAM M	76	0.1100	76	72	68	64	60
KASNER, ROBERT	1,001	1.4489	1,001	950	900	850	800
KATCHER, AUGUST M & MARCELYNE	23	0.0333	23	21	20	19	18
KEMP, ROBERT & ROSE	32	0.0463	32	30	28	27	25
KIEL, MARY	34	0.0492	34	32	30	28	27
KIM, JOON HO	764	1.1059	764	725	687	649	611
KOSHAREK, JOHN & JOANNE	54	0.0782	54	51	48	45	43
LAKE JODIE PROPERTY OWNERS ASSOCIATION	254	0.3677	254	241	228	215	203
LAKE WAIKIKI	98	0.1419	98	93	88	83	78
LAKE WAINANI OWNERS ASSOCIATION	202	0.2924	202	191	181	171	161
LANGLEY, MICHAEL R	20	0.0289	20	19	18	17	16
LAWRENCE, WILLIAM W	45	0.0651	45	42	40	38	36
LBE, MOON & OKBEA	49	0.0709	49	46	44	41	39
LBE, VIN JANG T	630	0.9119	630	598	567	535	504
LESHIN, CONNIE & SOL	1,416	2.0496	1,416	1,345	1,274	1,203	1,132
LESHIN, SOL	1,997	2.8906	1,997	1,897	1,797	1,697	1,597
LEVINE, DR LESLIE	1,637	2.3695	1,637	1,555	1,473	1,391	1,309
LONG, BALLARD	35	0.0507	35	33	31	29	28
M BIRD CONSTRUCTION	41	0.0593	41	38	36	34	32



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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION  (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
MAHJOUBI, APSAR S	63	0.0912	63	59	56	53	50
MALIN, LILY	54	0.0782	54	51	48	45	43
MALONEY, JANICE	36	0.0521	36	34	32	30	28
MARCROFT, JAMES A & JOAN	38	0.0550	38	36	34	32	30
MARSHALL, CHARLES	20	0.0289	20	19	18	17	16
MAYBERRY, DONALD J	41	0.0593	41	38	36	34	32
MILBRAT, IRVING	73	0.1057	73	69	65	62	58
MITCHELL, CHARLOTTE	115	0.1665	115	109	103	97	92
MITCHELL, JAMES L & CHERYL A	155	0.2244	155	147	139	131	124
MOORE, WAYNE G & JULIA H	103	0.1491	103	97	92	87	82
MORRIS, KARL	304	0.4400	304	288	273	258	243
MULLIGAN, ROBERT & INEZ	35	0.0507	35	33	31	29	28
NEWBERRY COMMUNITY SERVICE DIST	23	0.0333	23	21	20	19	18
NU VIEW DEVELOPMENT, INC	2,899	4.1962	2,899	2,754	2,609	2,464	2,319
O P D L INC	109	0.1578	109	103	98	92	87
O'KEEFE, SARAH-LEE & JOKE E	50	0.0724	50	47	45	42	40
P & H ENGINEERING & DEV CORP	667	0.9654	667	633	600	566	533
PARKER, GEORGE R	144	0.2084	144	136	129	122	115
PATHFINDER INVESTORS	472	0.6832	472	448	424	401	377
PAYAN, PAUL	32	0.0463	32	30	28	27	25
PERKO, BERT K	132	0.1911	132	125	118	112	105
PITTS, JOE	30	0.0434	30	28	27	25	24
POHL, ANDREAS & CATHLYN	17	0.0246	17	16	15	14	13
POLAND, JOHN R & SANDRA M	92	0.1332	92	87	82	78	73

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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
PRICE, ALAN E	37	0.0536	37	35	33	31	29
PRICE, DONALD	42	0.0608	42	39	37	35	33
PUCKHABER, WILLIAM F TRUST	63	0.0912	63	59	56	53	50
PURCIO, THOMAS F & PATRICIA A	80	0.1158	80	76	72	68	64
RANDOLPH, JOAN E	24	0.0347	24	22	21	20	19
REEVES, RICHARD	230	0.3329	230	218	207	195	184
RICE, DANIEL & MARY	121	0.1751	121	114	108	102	96
RICE, HENRY C & DIANA	24	0.0347	24	22	21	20	19
RIBGER, WALTER M	62	0.0897	62	58	55	52	49
RIKUO CORPORATION	1,517	2.1958	1,517	1,441	1,365	1,289	1,213
ROSSI, JAMES L & NAOMI I	614	0.8887	614	583	552	521	491
ROTEX CONSTRUCTION COMPANY	2,529	3.6606	2,529	2,402	2,276	2,149	2,023
SAN BERNARDINO COUNTY BARSTOW - DAGGETT AIRPORT	168	0.2432	168	159	151	142	134
SANTUCCI, ANTONIO & WILSA	30	0.0434	30	28	27	25	24
SCOGGINS, JERRY	105	0.1520	105	99	94	89	84
SHEPPARD, THOMAS & GLORIA	217	0.3141	217	206	195	184	173
SHORT, CHARLES & MARGARET	54	0.0782	54	51	48	45	43
SHORT, JEFF	30	0.0434	30	28	27	25	24
SILVER VALLEY RANCH, INC	109	0.1578	109	103	98	92	87
SMITH, WILLIAM E	19	0.0275	19	18	17	16	15
SNYDER, KRYL K & ROUTH, RICHARD J	64	0.0926	64	60	57	54	51
SOUTHERN CALIFORNIA EDISON CO - AGRICULTURE	5,858	8.4792	5,858	5,565	5,272	4,979	4,686
SOUTHERN CALIFORNIA EDISON CO - INDUSTRIAL	4,565	6.6076	4,565	4,336	4,108	3,880	3,652
SOUTHERN CALIFORNIA GAS COMPANY	98	0.1419	98	93	88	83	78

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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA  PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION  (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
ST ANTONY COPTIC ORTHODOX MONASTERY	130	0.1882	130	123	117	110	104
STEWART, STANLEY & PATRICIA	27	0.0391	27	25	24	22	21
SUGA, TAKRAKI	154	0.2229	154	146	138	130	123
SUNDOWN LAKES, INC	168	0.2432	168	159	151	142	134
SWARTZ, ROBERT & IRENE	50	0.0724	50	47	45	42	40
TAPIE, RAYMOND & MURIEL	18	0.0261	18	17	16	15	14
TAYLOR, TOM	503	0.7281	503	477	452	427	402
THAYER, SHARON	58	0.0840	58	55	52	49	46
THE 160 NEWBERRY RANCH CALIFORNIA, LTD	1,033	1.4952	1,033	981	929	878	826
TRIPLE H PARTNERSHIP	993	1.4373	993	943	893	844	794
UNION PACIFIC RAILROAD COMPANY	249	0.3604	249	236	224	211	199
VAN BASTELAAR, ALPHONSE	78	0.1129	78	74	70	66	62
VAN DIEST, CORNELIUS	934	1.3519	934	887	840	793	747
VAN LEEUWEN, JOHN	1,084	1.5690	1,084	1,029	975	921	867
VANDER DUSSEN, AGNES	1,792	2.5938	1,792	1,702	1,612	1,523	1,433
VAUGHT, ROBERT E & KAREN M	43	0.0622	43	40	38	36	34
VERNOLA, PAT	1,310	1.8962	1,310	1,244	1,179	1,113	1,048
WARD, ERNEST & LAURA	38	0.0550	38	36	34	32	30
WARD, RONNY H	130	0.1882	130	123	117	110	104
WEBER, F R & JUNELL	96	0.1390	96	91	86	81	76
WEBSTER, THOMAS M & PATRICIA J	24	0.0347	24	22	21	20	19
WEIDKNECHT, ARTHUR J & PEGGY A	79	0.1143	79	75	71	67	63
WESTERN HORIZON ASSOCIATES INC	1,188	1.7196	1,188	1,128	1,069	1,009	950
WESTERN ROCK PRODUCTS	31	0.0449	31	29	27	26	24

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EXHIBIT B  
TABLE B-1  
TABLE SHOWING BASE ANNUAL PRODUCTION AND  
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA  
TOGETHER WITH FREE PRODUCTION ALLOWANCES  
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL <sup>1</sup> PRODUCTION (ACRE-FEET)	BASE ANNUAL <sup>2</sup> PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND <sup>3</sup> YEAR	THIRD <sup>3</sup> YEAR	FOURTH <sup>3</sup> YEAR	FIFTH <sup>3</sup> YEAR
WET SET, INC	129	0.1867	129	122	116	109	103
WITTE, E DANIEL	27	0.0391	27	25	24	22	21
WLSR INC	133	0.1925	133	126	119	113	106
WORSEY, REVAE	29	0.0420	29	27	26	24	23
YARD, BETTY	26	0.0376	26	24	23	22	20
YERMO WATER COMPANY	453	0.6557	453	430	407	385	362
YOUNG, KRITH O - (DESERT TURF)	312	0.4516	312	296	280	265	249
MINIMAL PRODUCER POOL	3,500	5.0661	3,500	3,325	3,150	2,975	2,800
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	320	0.4632					
BAJA SUBAREA TOTALS =	69,087	100					

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

EXHIBIT B  
TABLE B-2  
TABLE SHOWING TOTAL WATER PRODUCTION  
FOR AQUACULTURE AND RECREATIONAL LAKE PURPOSES  
ALTO SUBAREA

PRODUCER	TOTAL WATER <sup>1</sup> PRODUCTION	BASE ANNUAL <sup>2</sup> PRODUCTION	RECIRCULATED <sup>3</sup> WATER
	(ACRE-FEET)		
CDFG - MOJAVE RIVER FISH HATCHERY	10,678	20	10,658
JESS RANCH WATER COMPANY	18,625	7,480	11,145
ALTO SUBAREA TOTALS =	29,303	7,500	21,803

Total Water Production is the reported maximum year production for each producer for the five year period 1986-1990.

These values reflect the maximum production determined by one or more of the following: Southern California Edison records; James C. Hanson site inspection; land use estimates from 1989 aerial photography; responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.

<sup>2</sup> Base Annual Production as shown on Table B-1.

<sup>3</sup> Amount shown is the difference between the Total Water Production and the Base Annual Production.

EXHIBIT B  
TABLE B-2  
TABLE SHOWING TOTAL WATER PRODUCTION  
FOR AQUACULTURE AND RECREATIONAL LAKE PURPOSES  
BAJA SUBAREA

PRODUCER	TOTAL WATER <sup>1</sup> PRODUCTION	BASE ANNUAL <sup>2</sup> PRODUCTION (ACRE-FEET)	RECIRCULATED <sup>3</sup> WATER
BROWY, ORVILLE & LOUISE	210	33	177
CALICO LAKES HOMEOWNERS ASSOCIATION	2,513	1,031	1,482
CDFG - CAMP CADY	102	14	88
CHEYENNE LAKE, INC	638	122	516
CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	6,575	447	6,128
DESERT LAKES CORPORATION - (LAKE DOLORES)	928	483	445
FUNDAMENTAL CHRISTIAN ENDEAVOR	440	285	155
HORTON'S CHILDREN'S TRUST	1,291	106	1,185
HORTON, JOHN MD	672	183	489
KIEL, MARY	188	34	154
LAKE JODIE PROPERTY OWNERS ASSOCIATION	2,805	254	2,551
LAKE WAIKIKI	400	98	302
LAKE WAINANI OWNERS ASSOCIATION	1,420	202	1,218
LEE, MOON & OKBEA	171	49	122
O F D L INC	434	109	325
RICE, DANIEL & MARY	614	121	493
SCOGGINS, JERRY	922	105	817
SILVER VALLEY RANCH, INC	455	109	346
SMITH, WILLIAM E	153	19	134
SUNDOWN LAKES, INC	1,109	168	941
TAPIE, RAYMOND & MURIEL	108	18	90
THAYER, SHARON	159	58	101
WET SET, INC	441	129	312
WLSR INC	678	133	545

EXHIBIT B  
TABLE B-2  
TABLE SHOWING TOTAL WATER PRODUCTION  
FOR AQUACULTURE AND RECREATIONAL LAKE PURPOSES  
BAJA SUBAREA

PRODUCER	TOTAL WATER <sup>1</sup> PRODUCTION	BASE ANNUAL <sup>2</sup> PRODUCTION	RECIRCULATED <sup>3</sup> WATER
(ACRE-FEET)			
BAJA SUBAREA TOTALS =	23,426	4,310	19,116

- 1 Total Water Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records; James C. Hanson site inspection; land use estimates from 1989 aerial photography; responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production as shown on Table B-1.
- 3 Amount shown is the difference between the Total Water Production and the Base Annual Production.

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EXHIBIT C

ENGINEERING APPENDIX

CONTENTS

- A. ADJUSTMENT OF FREE PRODUCTION ALLOWANCES
- B. DETERMINATION OF SURFACE FLOW COMPONENTS

TABLE C-1: MOJAVE BASIN AREA ADJUDICATION SUBAREA HYDROLOGICAL INVENTORY BASED ON LONG-TERM AVERAGE NATURAL WATER SUPPLY AND OUTFLOW AND CURRENT YEAR IMPORTS AND CONSUMPTIVE USE





1 total measured surface flow at Lower Narrows was Storm Flow and  
2 what portion was Base Flow.

3 The Parties in reaching the physical solution provided for in  
4 the Judgment, used certain procedures to separate the Storm Flow  
5 and Base Flow components of the total measured surface flow at  
6 Lower Narrows. Hydrographs of the mean daily discharge at Lower  
7 Narrows were plotted for the Year under consideration together with  
8 corresponding rainfall data obtained from the National Oceanic and  
9 Atmospheric Administration (NOAA) for Lake Arrowhead. Hydrographs  
10 were also plotted for the combined flow of West Fork Mojave River  
11 and Deep Creek which together with the Lake Arrowhead precipitation  
12 data served as a guide for interpreting those periods during which  
13 Storm Flow was likely to have occurred at Lower Narrows.

14 Other factors considered included:

15 \* Occurrences of Storm Flow at Barstow and Afton Canyon,  
16 \* Precipitation at Victorville and Barstow,  
17 \* Consideration of the time of Year and temperature, &  
18 \* Shape of hydrographs for Years having similar Base Flow  
19 characteristics.

20 Based on interpretation of all of the foregoing information,  
21 the flows occurring on those days during which Storm Flow most  
22 likely occurred were "scalped" by projecting an estimated Base Flow  
23 Curve through the Storm Flow Period. The Base Flow component of  
24 the total monthly flow was then determined as follows:

25 a. For those periods during which there was obviously no  
26 Storm Flow, the entire recorded mean daily flows were assumed to be  
27 Base Flow.  
28

1           b. For the remaining Storm Flow periods, the Base Flow  
2 component was taken as the area under the Base Flow Curve, except  
3 that for those days within the Storm Flow period when the actual  
4 mean daily discharge is less than the amount indicated by the Base  
5 Flow Scalping Curves, then the actual recorded amount is used.

6           2. Determination of Surface Flow Components at Waterman  
7 Fault. The total amount of surface flow passing the Waterman Fault  
8 (under current riverbed conditions) is considered to be Storm Flow  
9 and can be estimated from the Storm Flow passing the USGS gauging  
10 station Mojave River at Barstow. The following table was developed  
11 to provide a method for estimating flow at Waterman Fault:

12	Storm Flow At Barstow Gage <sup>1</sup> 13 <u>(Acre-Feet)</u>	Estimated Surface Flow at Waterman Fault 14 <u>(Acre-Feet)</u>
14	2,000	0
15	10,000	6,200
16	20,000	14,300
17	30,000	22,600
18	40,000	31,400
19	50,000	40,500
20	60,000	49,200
21	70,000	58,400
22	80,000	67,800
23	90,000	76,800
24	100,000	85,400

25  
26  
27 <sup>1</sup>From Recorded Flow at USGS Gaging Station Mojave River at  
28 Barstow. Relationship is based on single storm events. More than  
one storm event separated by more than five day of zero flow will  
be considered as separate storms.

1           3.    Determination of Surface Flow Components at Afton.

2   Records available for the discharge of the Mojave River at Afton,  
3   California, provide data on the total amount of surface flow and  
4   since storm runoff occurs during and immediately following a major  
5   storm event in the watershed area tributary to the Baja Basin below  
6   Barstow or in the event of large Storm Flows at Barstow which reach  
7   Afton, it was necessary to determine what portion of the total  
8   measured surface flow at Afton is Storm Flow and what portion of  
9   Base Flow.

10           The Parties, in reaching the physical solution provided for in  
11   the Judgment, used certain procedures to separate the Storm Flow  
12   and Base Flow components of the total measured surface flow at  
13   Afton. Hydrographs of the mean daily discharge at Afton were  
14   plotted for the water Year under consideration. In the absence of  
15   Storm Flow, the Base Flow curve at Afton was generally a relatively  
16   constant amount. Storm Flows were evidenced by sharp spikes or  
17   abrupt departures from the antecedent Base Flow and a fairly rapid  
18   return to pre-storm Base Flow Condition. The hydrograph of flows  
19   at Barstow served as a guide for identifying those periods during  
20   which Storm Flow was likely to have occurred at Afton.

21           Based on interpretation of all of the foregoing information,  
22   the flows occurring on those days during which Storm Flow most  
23   likely occurred were "scalped" by projecting an estimated Base Flow  
24   Curve through the Storm Flow Period. The Base Flow component of  
25   the total monthly flow was then determined as follows:

26           a. For those periods during which there is obviously no  
27   Storm Flow, the entire recorded mean daily flows were assumed to be  
28   Base Flow.

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b. For the remaining Storm Flow periods, the Base Flow component was taken as the area under the Base Flow Curve except that for those days within the Storm Flow period when the actual mean daily discharge was less than the amount indicated by the Base Flow Scalping Curves, then the actual recorded amount was used.

4. Engineers' Work Papers. These procedures are reflected in the Work Papers of the Engineers, copies of which are filed with the Watermaster.

**TABLE C-1**  
**Mojave Basin Area Adjudication**  
**Subarea Hydrological Inventory Based On**  
**Long-Term Average Natural Water Supply and Outflow**  
**and Current Year Imports and Consumptive Use**  
**(All Amounts in Acre-Feet)**

<b>WATER SUPPLY</b>	<b>Este</b>	<b>Oeste</b>	<b>Alto</b>	<b>Centro</b>	<b>Baja</b>	<b>Basin Totals</b>
Surface Water Inflow						
Gaged	0	0	65,000	0	0	65,000 <sup>1</sup>
Ungaged	1,700	1,500	3,000	37,300 <sup>1</sup>	14,300 <sup>2</sup>	6,500 <sup>3</sup>
Subsurface Inflow	0	0	1,000	2,000	1,200	0 <sup>4</sup>
Deep Percolation of Precipitation	0	0	3,500	0	100	3,600
Imports						
Lake Arrowhead CSD	0	0	1,500	0	0	1,500
Big Bear ARWWA	2,000	0	0	0	0	2,000
<b>TOTAL</b>	<b>3,700</b>	<b>1,500</b>	<b>74,000</b>	<b>39,300</b>	<b>15,600</b>	<b>78,600</b>
<b>CONSUMPTIVE USE AND OUTFLOW</b>						
Surface Water Outflow						
Gaged	0	0	0	0	8,200	8,200
Ungaged	0	0	37,300 <sup>1</sup>	14,000 <sup>5</sup>	0	0
Subsurface Outflow	200	800	2,000	1,200	0	0
Consumptive Use						
Agriculture	6,800	2,900	16,300	20,300	30,200	76,500
Urban	1,900	1,200	36,300	9,500	9,700	58,600 <sup>6</sup>
Phreatophytes	0	0	5,100	900	1,500	7,500
Exports	0	0	0	0	0	0
<b>TOTAL</b>	<b>8,900</b>	<b>4,900</b>	<b>97,000</b>	<b>45,900</b>	<b>49,600</b>	<b>150,800</b>
Surplus / (Deficit)	(5,200)	(3,400)	(23,000)	(6,600)	(34,000)	(72,200)
Total Estimated Production (Current Year) <sup>7</sup>	15,700	7,600	98,900	46,500	54,300	223,000
<b>PRODUCTION SAFE YIELD (Current Year)<sup>7</sup></b>	<b>10,500</b>	<b>4,200</b>	<b>75,900</b>	<b>39,900</b>	<b>20,300</b>	<b>150,800</b>

<sup>1</sup> Estimated from reported flows at USGS gaging station, Mojave River at Victorville Narrows.

<sup>2</sup> Includes 14,000 acre-feet of Mojave River surface flow across the Waterman Fault estimated from reported flows at USGS gaging station, Mojave River at Barstow, and 300 acre-feet of local surface inflow from Kane Wash.

<sup>3</sup> Represents the sum of Este (1,700 af), Oeste (1,500 af), Alto (3,000 af) and Baja (300 af from Kane Wash).

<sup>4</sup> Inter subarea subsurface flows do not accrue to the total basin water supply.

<sup>5</sup> Estimated from reported flows at USGS gaging station, Mojave River at Barstow.

<sup>6</sup> Estimated by Bookman-Edmonston.

<sup>7</sup> For purposes of this Table, the current year is 1990.

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EXHIBIT D  
  
TIME SCHEDULES





1 Production Allowance, Watermaster shall notify all Parties as to  
2 its recommendation not later than February 1, shall hold a public  
3 hearing thereon not later than March 1, and shall submit any such  
4 recommendation, which may be revised pursuant to the public  
5 hearing, to the Court not later than April 1.

6 5. Payment of Administrative Assessments and Biological  
7 Resource Assessments. Each Producer shall submit quarterly along  
8 with the Production report required by Paragraph 24 (p) an  
9 Administrative Assessment payment in an amount equal to the current  
10 Year Administrative Assessment Rate multiplied times the acre-feet  
11 of water Produced during the quarter and a Biological Resource  
12 Assessment payment in an amount equal to the current Year  
13 Biological Resource Assessment Rate multiplied times the acre-feet  
14 of water Produced during the quarter.

15 6. Payment of Replacement Water Assessments and Makeup Water  
16 Assessments. Replacement Water Assessments and Makeup Water  
17 Assessments for the prior Year shall be due and payable on July 1.

18 7. Delinquency of Assessments. Any assessment payable  
19 pursuant to this Judgment shall be deemed delinquent: i) if paid in  
20 Person, if not paid within five (5) days of the date due; ii) if  
21 paid by electronic funds transfer, if not paid within three (3)  
22 banking days of the date due; or iii) if paid by any other means,  
23 if not paid within ten (10) days of the date due. "Payment" shall  
24 occur when good and sufficient funds have been received by the  
25 Watermaster. Any assessment shall also be deemed delinquent in the  
26 event that any attempted payment is by funds that are not good and  
27 sufficient.

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EXHIBIT E

LIST OF PRODUCERS AND THEIR DESIGNEES

EXHIBIT E

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KEMP, ROBERT & ROSE  
KEMPER CAMPBELL RANCH  
KIEL, MARY  
KIM, JOON HO  
KING, GENEVIEVE E  
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LAKE WAIKIKI  
LAKE WAINANI OWNERS ASSOCIATION  
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LAWRENCE, WILLIAM W  
LAWSON, ERNEST & BARBARA  
LEE, DOO HWAN  
LEE, MOON & OKBEA  
LEE, SEPOONG ETAL & WOO POONG  
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EXHIBIT F  
TRANSFERS OF BASE ANNUAL PRODUCTION RIGHTS.

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EXHIBIT F  
TRANSFERS OF  
BASE ANNUAL PRODUCTION RIGHTS

1. Transferability. Any Base Annual Production Right, including any Carryover Right (Right) or any portion thereof may be sold, assigned, transferred, licensed or leased subject to the rules set forth in this Exhibit "F".

2. Consumptive Use Adjustments. A transferred Right shall be adjusted so as not to cause an increased Consumptive Use of water. For either inter Subarea or intra Subarea transfers, if the transferee's Consumptive Use of water Produced under the transferred Right would be at a higher rate than that of transferor, the transferred Right shall be reduced by Watermaster to a level that equalizes the Consumptive Use to that of transferor. Any such adjustments by Watermaster shall be made using the following Consumptive Use rates. If a transfer would cause the same or a decreased Consumptive Use, no adjustment shall be made.

Type of Water Use	Consumptive Use Rate
Municipal	50%
Irrigation	50%
Industrial	case by case
Lakes or Aquaculture	surface acres x 7 ft.

For mixed or sequential uses of water excluding direct reuse of municipal wastewater, the total acre-feet of Consumptive Use shall be the sum of Consumptive Uses for each use.

1           3.    Notice to Watermaster. No transfer shall become operable  
2 until the Parties to the transfer have jointly notified Watermaster  
3 of the terms and conditions of the transfer, the price to be paid  
4 by the transferee, the name of the Responsible Party and the name  
5 of the Person who will pay any applicable Assessments. Intra-  
6 Subarea transfers shall not require Watermaster authorization after  
7 giving notice. No inter-Subarea transfer shall become operable  
8 until authorized by Watermaster after giving notice. Watermaster  
9 shall authorize such transfers in the order of the date of notice,  
10 provided that funds are available as set forth in Paragraph 4 of  
11 this Exhibit "F".

12           4.    Inter Subarea Transfers of Rights. A Party's Right in a  
13 (Source) Subarea may be transferred (by lease only) to a Party in  
14 another (Use) Subarea provided that in any Year the resulting  
15 unconsumed water in the Source Subarea due to all such transfers  
16 shall not be greater than the Replacement Water requirement of the  
17 Source Subarea in the preceding Year. Watermaster shall replace  
18 the resulting Consumptive Use in the Use Subarea that is  
19 attributable to the transfer, utilizing Replacement Water  
20 Assessments from the Source Subarea.

21           5.    Transfers to Meet Replacement Water or Makeup Water  
22 Obligations. Watermaster may use Assessment proceeds to purchase  
23 or lease Rights in a Subarea in order to obtain water to meet an  
24 Obligation. The water so obtained shall be equal to the  
25 Consumptive Use portion of the transferred and unproduced Rights.  
26 No such purchases of leases of Rights in the Harper Lake Basin may  
27 be used to satisfy Obligations in other parts of the Centro  
28 Subarea.

1           6.    Inter Subarea Transfers of Water.  Water Produced in one  
2 (source) Subarea and exported to another Subarea for use or  
3 disposal shall bear a Replacement Water Obligation equal to the sum  
4 of the Production in excess of the Producer's share of the Free  
5 Production Allowance in the source Subarea plus the amount of water  
6 exported that would normally have been returned to the source  
7 Subarea.  Such exported water shall be credited to the appropriate  
8 Subarea Obligation unless it has been purchased or leased as  
9 Replacement Water pursuant to a transfer agreement.

10           7.    Verde Ranch Producers.  Together the Spring Valley Lake  
11 Country Club ("the Country Club"), the Spring Valley Lake  
12 Association ("the Association"), the California Department of Fish  
13 and Game (DFG) Mojave Narrows Regional Park ("the Park") the Kemper  
14 Campbell Ranch ("the Ranch") comprise a group herein called the  
15 Verde Ranch Producers.  Each Verde Ranch Producer has the ability  
16 physically both to Produce Groundwater and to Produce water that  
17 originated as tailwater flowing from the DFG Mojave River Fish  
18 Hatchery.  DFG Producer Groundwater to supply the Hatchery, and  
19 Hatchery tailwater can be discharged in part or entirely to the  
20 Mojave River or in part or entirely to a lined channel that conveys  
21 tailwater to points where the Verde Ranch Producers can Produce it.  
22 The present flow regimen is as follows:  Hatchery Production flows  
23 through the Hatchery and is then discharged to the River and/or the  
24 lined channel.  Water discharged to the lined channel flows to a  
25 Country Club lake.  The Country Club Produces Groundwater that is  
26 discharged to the Country Club lake.  The Country Club property is  
27 irrigated by pumping from the Country Club lake.  Water overflowing  
28 from the Country Club lake flows through a lined channel and

1 through other Country Club lakes, and finally is discharged to  
2 Spring Valley Lake. The Association Produces Groundwater that is  
3 discharged to Spring Valley Lake. Water overflowing from Spring  
4 Valley Lake flows to lakes in the Park. The Park Produces  
5 Groundwater that is discharged to the lakes in the Park. The Park  
6 also Produces Groundwater that is used directly for irrigation of  
7 the Park. The Park is also irrigated by pumping from the lakes in  
8 the Park. Water overflowing from the lakes in the Park is  
9 discharged to the Mojave River. Some water from the lakes in the  
10 Park also flows to a lake on the Ranch. The Ranch also Produces  
11 Groundwater. The Ranch is irrigated from the lake on the Ranch.  
12 No water flows on the surface from the Ranch property to the Mojave  
13 River.

14 In order to continue the present arrangements among the  
15 Hatchery and the Verde Ranch Producers while assuring that they  
16 participate fairly in the Physical Solution the following rules  
17 shall apply:

18 a. Total Production by the Country Club will be  
19 calculated as the sum of Country Club Groundwater Production plus  
20 inflow of Hatchery tailwater minus outflow to Spring Valley Lake.  
21 The Country Club shall monitor and report to Watermaster the  
22 amounts of such Groundwater Production, inflow and outflow.

23 b. Total Production by the Association will be  
24 calculated as the sum of Association Groundwater Production plus  
25 inflow from the Country Club minus outflow to the Park. The  
26 Association shall monitor and report to Watermaster the amounts of  
27 such Groundwater Production, inflow and outflow.

28

1           c.    Total Production by the Park will be calculated as  
2 the sum of Park Groundwater Production plus inflow from the  
3 Association minus outflow to the Ranch minus outflow to the Mojave  
4 River. The Park shall monitor and report to Watermaster as to such  
5 Groundwater Production, inflow and outflows.

6           d.    Total Production by the Ranch will be calculated as  
7 the sum of Ranch Groundwater Production plus inflow from the Park.  
8 The Ranch shall monitor and report to Watermaster the amounts of  
9 such Groundwater Production and inflow.

10          e.    Hatchery Production up to 10,678 acre-feet per Year  
11 will be permitted free of any Assessments against the Hatchery.  
12 The Hatchery shall monitor and report to Watermaster its  
13 Groundwater Production and the amounts of tailwater discharged to  
14 the River and to the artificial channel. In any Year the Hatchery  
15 may Produce more than 10,678 acre-feet free of any Assessments  
16 against the Hatchery, provided such Production in excess of 10,678  
17 acre-feet is reported as Groundwater Production by one or more of  
18 the Verde Ranch Producers in the same Year pursuant to operating  
19 agreements by and between the Hatchery and such Producer(s) filed  
20 with the Watermaster. The operating agreement shall specify the  
21 responsibility for payment of assessments. In the operating  
22 agreement, the Verde Ranch Producers may elect to have assessments  
23 be based on the aggregate Production of the Verde Ranch Producers,  
24 and may freely transfer Base Annual Production Rights internally,  
25 provided that the aggregate consumptive use of the Verde Ranch  
26 Producers shall not be increased. In the absence of such operating  
27 agreements, or if the operating agreements do not otherwise  
28 allocate responsibility for payment of Assessments, the Hatchery

1 shall be liable for Administrative, Replacement Water and  
2 Biological Resource Assessments on the amount of water Produced by  
3 the Hatchery in excess of 10,678 acre-feet in any Year. In the  
4 event that Verde Ranch Producer who is allocated responsibility for  
5 payment of Assessments pursuant to an operating agreement is  
6 delinquent in making any such payment, the Hatchery shall not be  
7 liable therefor.

8 f. In any Year, if the total discharge to the River  
9 from the Hatchery and the Verde Ranch Producers exceeds the  
10 Groundwater Production by the Hatchery, such excess discharge shall  
11 be subject to Administrative, Replacement Water and, except for the  
12 Park, Biological Resource Assessments. Such Assessments shall be  
13 levied against individual Verde Ranch Producers in proportion to  
14 the extent that outflow from each Producer exceeds inflow to that  
15 Producer.

16 g. The Hatchery and the Verde Ranch Producers shall  
17 install all stage recorders, meters or other measuring devices  
18 necessary to determine inflows, outflows and Production that they  
19 are responsible for monitoring and reporting to Watermaster. Such  
20 stage recorders, meters or other measuring devices shall be  
21 installed, calibrated and operated in manner satisfactory to  
22 Watermaster.

23 h. Any change in the flow regimen described above will  
24 be subject to the same general rules set forth in this Paragraph 7.  
25 Any such change shall be reported to Watermaster in advance.

26 8. Harper Lake Basin. No Producer in the Harper Lake Basin  
27 may transfer any Base Annual Production Right or any portion  
28 thereof to Producers outside of Harper Lake Basin except by

1 physically conveying the water in compliance with the rules set  
2 forth in this Exhibit "F".

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EXHIBIT G

SUBAREA OBLIGATIONS



1 e. Alto Subarea Producers--an average Annual combined  
2 Subsurface Flow and Base Flow of 23,000 acre-feet per Year to the  
3 Transition Zone. For the purposes of Paragraph 6 of this Exhibit  
4 G, the Subsurface Flow component shall be deemed to be 2,000 acre-  
5 feet per Year. In any Year Alto Subarea Producers shall have an  
6 obligation to provide to the Transition Zone a minimum combined  
7 Subsurface Flow and Base Flow as follows:

8 i. If the accounting pursuant to Paragraph 5, below,  
9 reflects a net cumulative credit at the beginning of the Year,  
10 the combined minimum flow obligation shall be 18,400 acre-feet  
11 minus any net cumulative credit, but shall be not less than  
12 15,000 acre-feet.

13 ii. If the accounting pursuant to Paragraph 5, below,  
14 does not reflect a net cumulative credit at the beginning of  
15 the Year, the combined minimum flow obligation shall be 18,400  
16 acre-feet plus one-third of any net cumulative debit plus any  
17 additional amount of water required to reduce the net  
18 cumulative debit to 23,000 acre-feet.

19 2. Obligation for Transition Zone Replacement Water.

20 a. Until the Court approves Groundwater levels to be  
21 established and maintained pursuant to Subparagraph 2b of this  
22 Exhibit, Watermaster shall provide Replacement Water in the  
23 Transition Zone equal to Production in the Transition Zone that is  
24 in excess of the Transition Zone Producers' share of the Alto  
25 Subarea Free Production Allowance for that Year. All such  
26 Replacement Water shall be provided as soon as practicable during  
27 the next ensuing Year.  
28

1           b. As soon as is practicable, the MWA shall establish  
2 key wells to be used to monitor Groundwater levels in the  
3 Transition Zone and, subject to approval by the Court, Watermaster  
4 shall establish minimum water levels to be maintained in the key  
5 wells.

6           c. After water level elevations have been established  
7 pursuant to Subparagraph 2b of this Exhibit, Watermaster shall  
8 provide Replacement Water in the Transition Zone as necessary to  
9 maintain the minimum water levels. Water purchased with  
10 Replacement Water Assessments paid by Producers in the Transition  
11 Zone in excess of the quantity of water needed to maintain said  
12 water levels shall be provided elsewhere in the Alto Subarea.

13           3. Other Water. "Other Water" that may be credited to a  
14 Subarea Obligation may include water conveyed and discharged across  
15 a boundary or Free Production Allowance water that is not Produced.  
16 Water other than Base Flow, Subsurface Flow or Storm Flow that is  
17 conveyed and discharged across a boundary between Subareas other  
18 than pursuant to a transfer agreement, shall be credited or  
19 debited, as appropriate, to the pertinent Subarea Obligation during  
20 the Year in which it is so conveyed and discharged. Any portion of  
21 the Subarea's Free Production Allowance that is allowed to remain  
22 unproduced in a Subarea pursuant to transfer agreements in order to  
23 satisfy a Subarea Obligation shall be credited to the pertinent  
24 Subarea Obligation in accordance with the terms of the transfer  
25 agreements.

26           4. Makeup Water. Assessments for Makeup Water shall be paid  
27 in accordance with the time schedule set forth in Exhibit D.  
28

1 Makeup Water shall be credited to the Subarea Obligation at the end  
2 of the Year in which the Makeup Water Assessment is paid.

3 5. Accounting. Watermaster shall Annually not later than  
4 February 1 cause to be prepared a report of the status of each  
5 Subarea Obligation as of the end of the prior Year. The report  
6 shall set forth at least the following information for each Subarea  
7 Obligation:

8 a. The cumulative total of the average Annual Subarea  
9 Obligations since the Judgment was entered as of the beginning of  
10 the prior Year;

11 b. The cumulative total of all water credited to the  
12 Subarea Obligation since the Judgment was entered as of the  
13 beginning of the prior Year;

14 c. The net cumulative credit or debit [the difference  
15 between (a) and (b)] as of the beginning of the prior Year;

16 d. The amounts of water credited to the Subarea  
17 Obligation during the prior Year including, as appropriate, Base  
18 Flow, Subsurface Flow, Other Water and Makeup Water;

19 e. The cumulative total of the average Annual Subarea  
20 Obligations as of the end of the prior Year;

21 f. The cumulative total of all water credited to the  
22 Subarea Obligation as of the end of the prior Year;

23 g. The net cumulative credit or debit as of the end of  
24 the prior Year;

25 h. Any Makeup Water Obligation;

26 i. The Minimum Subarea Obligation for the current Year.

27 6. Subsurface Flow Assumptions. Some Subarea Obligations  
28 are expressed as average Annual or minimum Annual Subsurface Flow.

1 In all cases the Subsurface Flow obligations have been established  
2 initially at amounts equal to the estimated historical average  
3 Subsurface Flow across Subarea boundaries. Not later than two  
4 Years following entry of this Judgment MWA shall begin to install  
5 monitoring wells to be used to obtain data to enable improved  
6 estimates of Subsurface Flow at each Subarea boundary where there  
7 is a Subsurface Flow obligation and to develop methodology for  
8 future determinations of actual Subsurface Flow. Not later than  
9 ten years following entry of this Judgment Watermaster shall  
10 prepare a report setting forth the results of the monitoring  
11 program and the future methodology. Following opportunity for  
12 review of Watermaster's report by all Parties, Watermaster shall  
13 prepare a recommendation to the Court as to the likely accuracy of  
14 the estimated historical Subsurface Flows and any revision of  
15 Subarea Obligations that may be indicated. Pending Watermaster's  
16 report to the Court, Subsurface Flows shall be assumed to be equal  
17 to the Subsurface Flow obligations for purposed of accounting for  
18 compliance therewith.

19 7. Example Calculation. Table G-1 sets forth an example of  
20 Subarea Obligation accounting procedures using hypothetical flows.  
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TABLE G-1  
 HYPOTHETICAL EXAMPLE  
 ACCOUNTING FOR COMPLIANCE WITH SUBAREA OBLIGATIONS

OBLIGATION OF SUBAREA A TO SUBAREA B

AVERAGE ANNUAL: 23,000 AFA (21,000 AFA BASEFLOW + 2,000 AFA SUBSURFACE FLOW)

MINIMUM ANNUAL: 18,400 AFA + 1/3 OF ANY NET CUMULATIVE DEBIT; OR 18,400 AFA - ANY NET CUMULATIVE CREDIT, BUT NOT LESS THAN 15,000 AFA

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF
<b>STATUS AT BEGINNING OF YEAR</b>										
CUMULATIVE OBLIGATION	0	23,000	46,000	69,000	92,000	115,000	138,000	161,000	184,000	207,000
CUMULATIVE FLOW	0	17,000	32,600	50,000	69,067	87,067	107,111	139,978	168,378	198,978
<b>NET CUMULATIVE CREDIT (DEBIT)</b>										
	0	(6,000)	(13,400)	(18,200)	(22,933)	(27,933)	(30,889)	(21,022)	(15,622)	(8,022)
<b>FLOW DURING THE YEAR (HYPOTHETICAL)</b>										
BASE FLOW	8,000	5,000	4,000	4,000	2,000	2,000	15,000	18,000	20,000	23,000
SUBSURFACE FLOW	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
OTHER WATER	7,000	7,200	7,400	7,600	7800	8,000	8,200	8,400	8,600	8800
MAKEUP WATER PURCHASED	0	1,400	4,800	4,667	6,200	8,044	7,667	0	0	0
<b>TOTAL FLOW</b>										
	17,000	15,600	18,200	18,267	18,000	20,044	32,867	28,400	30,600	33,800
<b>MINIMUM OBLIGATION DURING THE YEAR</b>										
	18,400	20,400	22,867	24,467	26,044	27,711	28,696	25,407	23,607	21,074
<b>MAKEUP OBLIGATION INCURRED</b>										
	1,400	4,800	4,667	6,200	8,044	7,667	0	0	0	0
<b>STATUS AT END OF YEAR</b>										
CUMULATIVE OBLIGATION	23,000	46,000	69,000	92,000	115,000	138,000	161,000	184,000	207,000	230,000
CUMULATIVE FLOW	17,000	32,600	50,000	69,067	87,067	107,111	139,978	168,378	198,978	232,778
<b>NET CUMULATIVE CREDIT (DEBIT)</b>										
	(6,000)	(13,400)	(18,200)	(22,933)	(27,933)	(30,889)	(21,022)	(15,622)	(8,022)	2,778
<b>FOLLOWING YEAR MINIMUM OBLIGATION</b>										
18,400 + 1/3 OF NET CUM. DEBIT	20,400	22,867	24,467	26,044	27,711	28,696	25,407	23,607	21,074	0
ADDITIONAL TO REDUCE DEBIT TO 23,000	0	0	0	0	0	0	0	0	0	0
18,400 - CUM. CREDIT, BUT NOT 15,000	0	0	0	0	0	0	0	0	0	15,622
<b>MINIMUM OBLIGATION</b>										
	20,400	22,867	24,467	26,044	27,711	28,696	25,407	23,607	21,074	15,622

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**EXHIBIT H**

**BIOLOGICAL RESOURCE MITIGATION**





1 Allowance, shall compare the Free Production Allowance with the  
2 estimated Production Safe Yield. In the event the Free Production  
3 Allowance exceeds the estimated Production Safe Yield by five  
4 percent or more, Watermaster shall recommend a reduction of the  
5 Free Production Allowance equal to a full five percent of the  
6 aggregate Subarea Base Annual Production. In considering whether  
7 to increase or decrease the Free Production Allowance in a Subarea,  
8 Watermaster shall, among other factors, take into consideration for  
9 the areas shown on Figure H-1 the Consumptive Use of water by  
10 riparian habitat, the protection of public trust resources,  
11 including the species listed in Table H-1 and the riparian habitat  
12 areas shown on Figure H-1, and whether an increase would be  
13 detrimental to the protection of public trust resources.

14 b. If, pursuant to Paragraph 27, Watermaster buys or  
15 leases Free Production Allowance in the Baja Subarea below the  
16 Calico-Newberry Fault to satisfy the need for Replacement Water,  
17 priority shall be given to purchases or leases that will result in  
18 reducing Production in or near the area described in Subparagraph  
19 1(c) of this Exhibit.

20 c. Pursuant to Paragraph 2 of Exhibit "G", Watermaster  
21 shall purchase Replacement Water to maintain Groundwater levels in  
22 the Transition Zone.

23 3. Additional Protection Pursuant to Trust Fund Established  
24 by Watermaster Using the Proceeds of Biological Resource  
25 Assessments.

26 a. Watermaster shall establish a Biological Resources  
27 Trust Fund account for the benefit of the riparian habitat areas  
28 shown on Figure H-1 and the species listed on Table H-1. To

1 establish and maintain the Trust Fund Watermaster shall levy  
2 against each acre-foot of Production within the Basin Area, other  
3 than Production by the California Department of Fish and Game  
4 (DFG), a Biological Resource Assessment of fifty cents (\$0.50)  
5 (1993 dollars) to be collected at the same time and in the same  
6 manner as the Administrative Assessment, except that no Biological  
7 Resources Assessment shall be levied whenever the Trust Fund  
8 account balance exceeds \$1,000,000 (1993 dollars).

9           b. Watermaster shall make funds held in the Biological  
10 Resources Trust Fund available to DFG only in the event that  
11 Groundwater levels are not maintained as set forth in Table H-2.  
12 Watermaster shall take action to acknowledge any proposed  
13 expenditure from the Biological Resources Trust Fund by DFG. Such  
14 Watermaster action shall be subject to the review procedures set  
15 forth in Paragraph 36 of the Judgment, provided that any motion  
16 made pursuant thereto and any Court disapproval of such Watermaster  
17 action and proposed DFG expenditure may be based only: 1) on the  
18 ground that the Groundwater levels set forth in Table H-2 are being  
19 maintained; and/or 2) the ground that the proposed expenditure is  
20 not for any of the purposes set forth in Subparagraphs 3.b.(i),  
21 (ii), or (iii) below in this Exhibit. The Biological Resources  
22 Trust Fund may be used only for the following purposes and only in  
23 the three areas identified on Figure H-1:

24           i. not to exceed \$100,000 for the preparation by DFG of  
25 a DFG habitat water supply management plan, which plan shall  
26 include the water needs of the species listed in Table H-1 and  
27 the riparian habitat areas shown on Figure H-1.  
28

1           ii. the purchase or lease by DFG of Supplemental Water  
2 or the lease or purchase of DFG of Base Annual Production  
3 Rights to be used to meet riparian habitat water needs of the  
4 species listed in Table H-1 and the riparian habitat areas  
5 shown on Figure H-1.

6           iii. the construction, repair and replacement of wells or  
7 other facilities identified in the plan prepared pursuant to  
8 Subparagraph (i), above, and/or any other measures necessary  
9 to implement the plan.

10 DFG shall not prepare or make any expenditure from the trust fund  
11 for the payment of administrative overhead or staff of DFG.

12           4. DFG agrees that absent substantial changed circumstances,  
13 DFG shall not seek to modify the provisions of this Judgment in any  
14 way to add to or change the above-stated measures to protect the  
15 referenced species or habitat. Nothing stated in this Judgment or  
16 in this Exhibit "H" is intended nor shall be deemed to relieve any  
17 Party hereto from any obligation or obligations not specifically  
18 referenced in this Exhibit H. Nothing in this Judgment or in this  
19 Exhibit H is intended or shall be construed to be a waiver by the  
20 State or any of its departments or agencies, including DFG, of its  
21 rights and obligations under the common law, the public trust  
22 doctrine, the constitution, statutes and regulations to preserve,  
23 protect or enhance the natural resources of the State including  
24 rare, threatened or endangered species or species of concern.



TABLE H-1

LIST OF SPECIES  
(CONT'D)

SPECIES	ALTO			CENTRO		BAJA		
	Forks Dam to Upper Narrows	Upper Narrows to Lower Narrows	Lower Narrows to Helendale	Helendale to Hodge	Hodge to Barstow	Barstow to Harvard Road	Harvard Road to Mannix Wash	Afton Canyon
Yellow Warbler	9							
Yellow-breasted Chat	8	8			8	8		
Summer Tanager	8	8						8
Pale Big Eared Bat	8							
Mohave Ground Squirrel	4, 6		4, 6	4, 6				
Mohave Vole			6	6				
Nelson's Bighorn Sheep					10	10		10
TOTAL NUMBER OF SPECIES = 30								
TOTAL NUMBER OF SPECIES IN EACH AREA:	25	11	7	8	7	8	3	5

- 1 = Federally Endangered
- 2 = Federally Threatened
- 3 = State Endangered
- 4 = State Threatened
- 5 = Federal Category: 1
- 6 = Federal Category: 2
- 7 = Federal Category: 3b
- 8 = State: Special Concern
- 9 = State: Sensitive
- 10 = State: Fully Protected

**TABLE H-2**

**RIPARIAN HABITAT MONITORING WELL  
WATER LEVEL CRITERIA**

<b>ZONE</b>	<b>WELL NUMBER</b>	<b>MAXIMUM DEPTH BELOW GROUND</b>
Victorville/Alto	H1-1	Seven (7) Feet
Victorville/Alto	H1-2	Seven (7) Feet
Lower Narrows/Transition	H2-1	Ten (10) Feet
Harvard/Eastern Baja Riparian Forest Habitat	H3-1	Seven (7) Feet
Harvard/Eastern Baja Surface Water Habitat	H3-2	Plus One (1) Foot (1705 Ft msl)*

- \* Surface Water Habitat water surface elevation of 1705 ft. msl is approximate pending ground elevation survey.

# FIGURE H-1 VICTORVILLE - ALTO RIPARIAN ZONE

## LEGEND



Water Table Monitoring well

H-2



Riparian Forest Habitat Area

## SCALE





# FIGURE H-1: LOWER NARROWS TRANSITION RIPARIAN ZONE

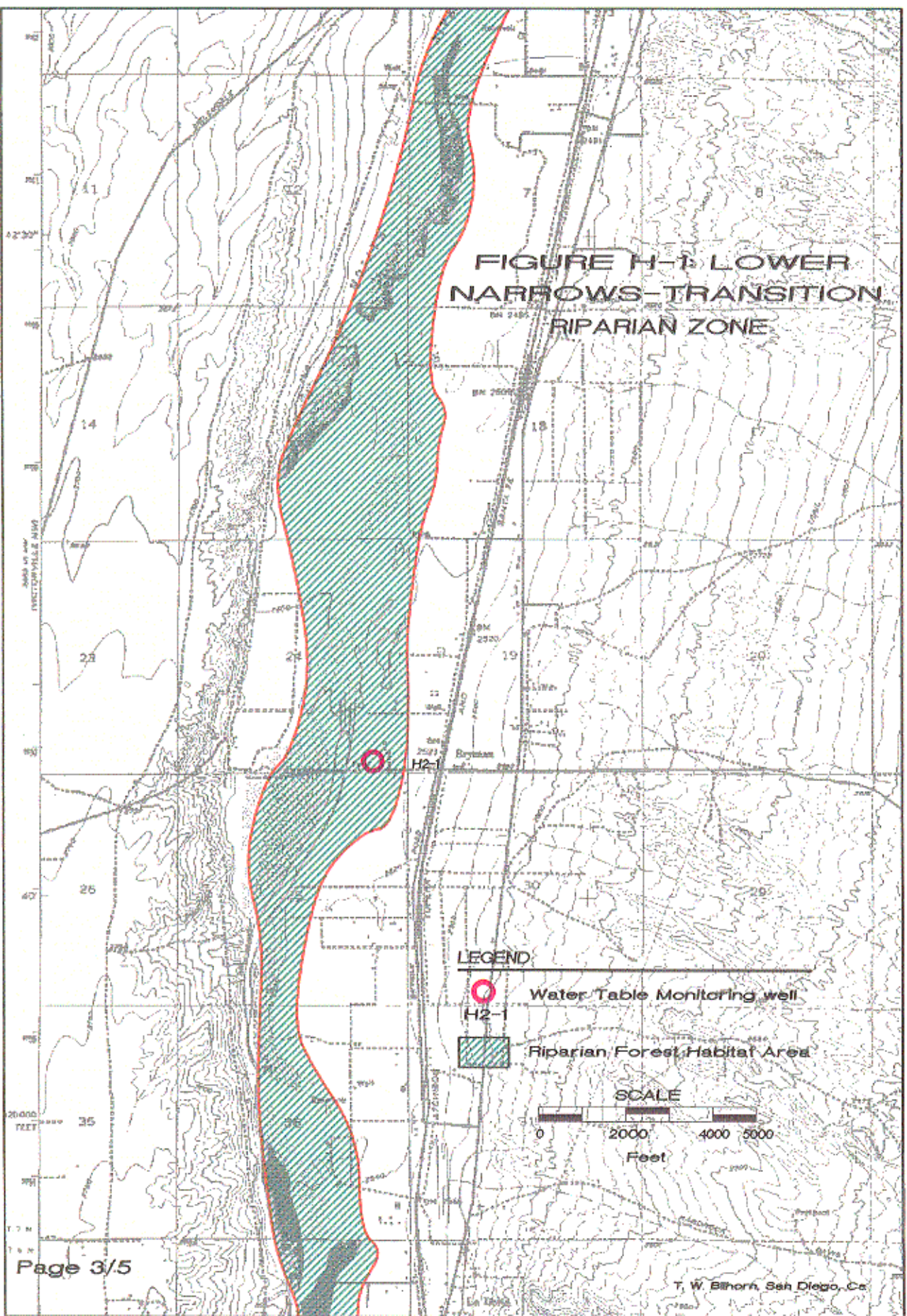
## LEGEND

-  Water Table Monitoring well  
H1-1
-  Riparian Forest Habitat Area



## SCALE



**FIGURE H-1: LOWER  
NARROWS-TRANSITION  
RIPARIAN ZONE**



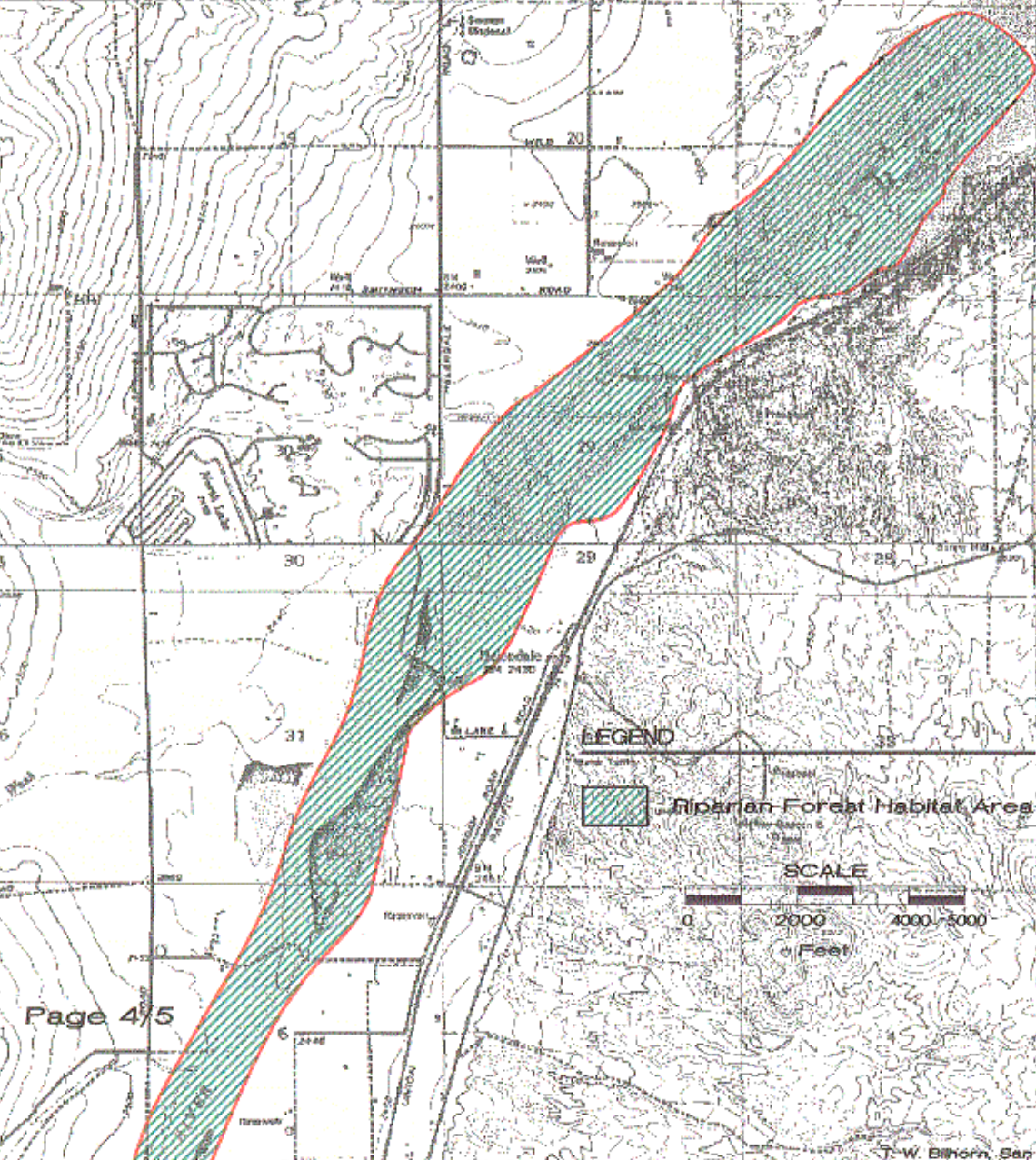
**LEGEND**

-  Water Table Monitoring well  
H2-1
-  Riparian Forest Habitat Area

**SCALE**



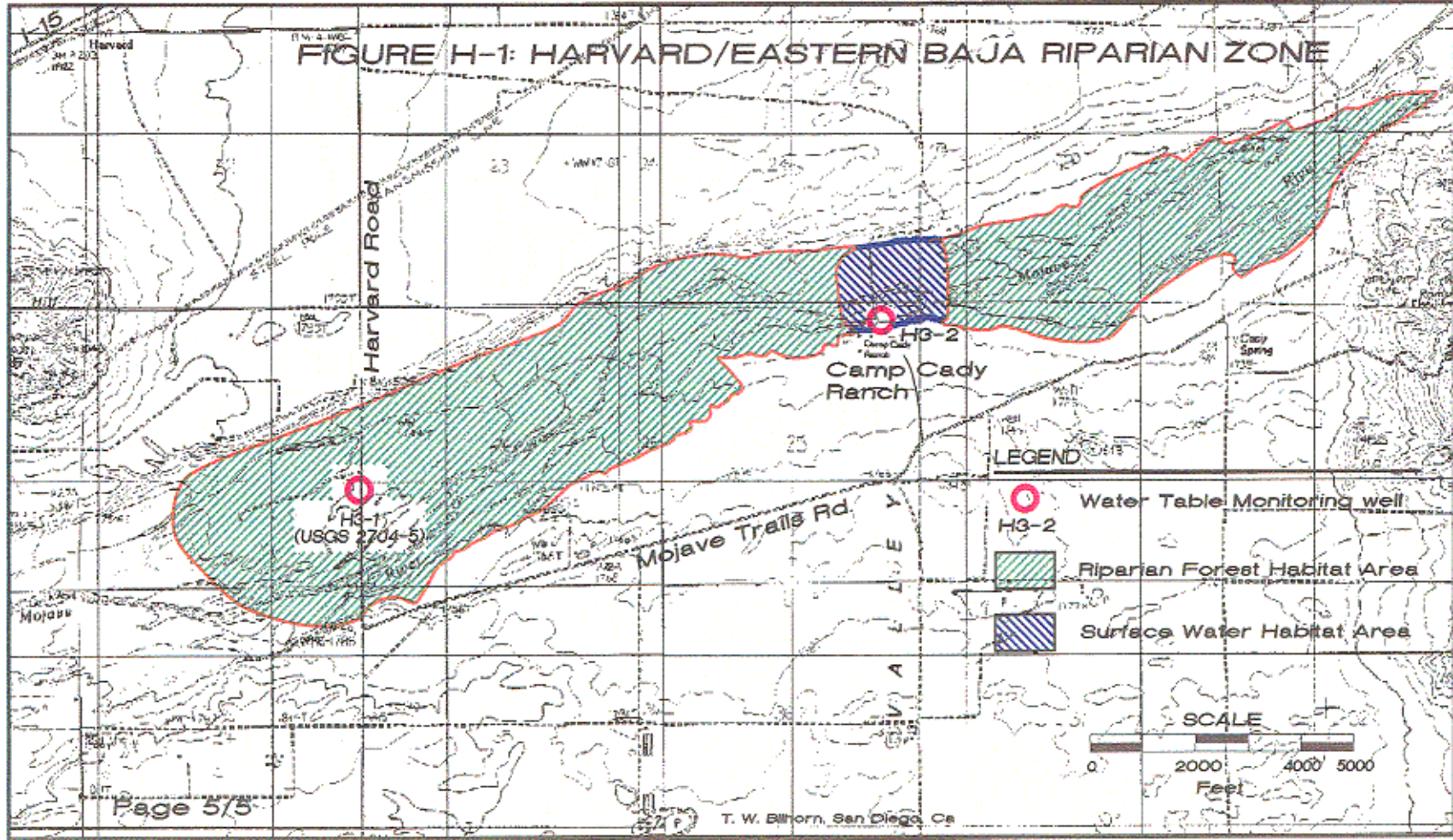
# FIGURE HI TRANSITION RIPARIAN ZONE




**LEGEND**  
Riparian Forest Habitat Area

**SCALE**  
0 2000 4000 6000  
Feet


FIGURE H-1: HARVARD/EASTERN BAJA RIPARIAN ZONE



LEGEND

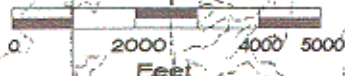
 Water Table Monitoring well

H3-2

 Riparian Forest Habitat Area

 Surface Water Habitat Area

SCALE



LEGEND

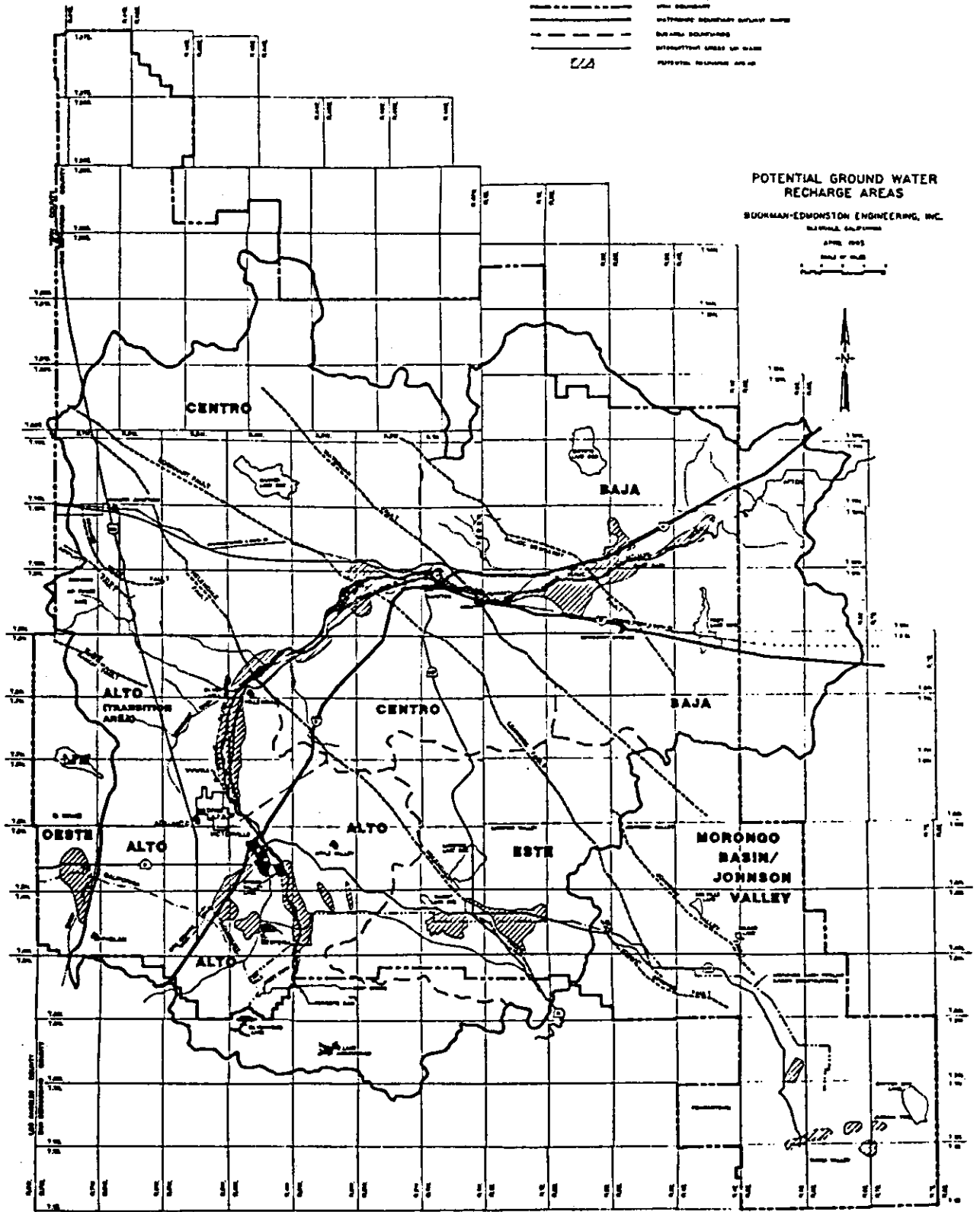
- STATE BOUNDARY
- INTERNATIONAL BOUNDARY
- COUNTY BOUNDARY
- DISTRICT/TRACT BOUNDARY
- POTENTIAL RECHARGE AREA

POTENTIAL GROUND WATER RECHARGE AREAS

BOOKMAN-EDMONSTON ENGINEERING, INC.  
NATIONAL CITY, CALIFORNIA

APRIL 1995

SCALE OF 1:50,000



MOJAVE WATER AGENCY

REGIONAL WATER MANAGEMENT PLAN



# H

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## Appendix H - MWA's Delta Reliance Assessment

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# Appendix A

## MWA Delta Reliance

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This Appendix provides the Delta Reliance assessment for the Mojave Water Agency (MWA) and the retail water service agencies located within MWA's service area boundary. These retail agencies in MWA's service area boundary covered by this assessment include: Liberty Utilities – Apple Valley Water Company, Bighorn-Desert View Water Agency, City of Adelanto Water District, San Bernardino County Service Area 64, San Bernardino County Service Area 70J, Golden State Water Company – Barstow System, Helendale Community Services District, Hesperia Water District, Hi-Desert Water District, Joshua Basin Water District, Phelan Pinon Hills Community Services District, and Victorville Water District. These retail agencies are subject to the minimum threshold requirements of the Urban Water Management Planning Act (UWMP Act) and work with MWA on managing regional water supplies. Additional entities that are not currently subject to the UWMP Act but may be subject to the UWMP Act in the future and that rely upon water supplies derived from MWA's and the retail agencies' management are also considered in this assessment. Last, this assessment is consistent with all applicable water management activities within the MWA service area boundary including the Mojave Basin Area Adjudication, the Warren Valley Basin Judgment, and the Ames/Reche Groundwater Storage and Recovery Program Management Agreement.

### A.1 Delta Reform Act and Certification of Consistency

---

The Delta Reform Act of 2009 required state and local agencies to prepare a written certification of consistency with Delta Plan policies before initiating a covered action in the Delta.<sup>66</sup> The written certification of consistency must be submitted to the Delta Stewardship Council and include detailed findings as to whether the covered action is consistent with applicable Delta Plan policies.<sup>67</sup> The submitted certification of consistency may be appealed by any person and the Delta Stewardship Council may grant the appeal to address contested issues.<sup>68</sup> In short, water suppliers that anticipate participating in a proposed covered action must comply with the requirements of the Delta Reform Act.

Proposed covered actions may include a conveyance facility or a new diversion that involves transferring water through, exporting water from, or using water in the Delta. For urban purveyors that may participate in a proposed covered action, should provide information in their Urban Water Management Plans (UWMP) that can be used to demonstrate consistency with the Delta Plan. Specifically, the urban purveyors need to demonstrate consistency with Delta Plan Policy WR P1 –

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<sup>66</sup> California Water Code section 85057.5.

<sup>67</sup> California Water Code section 85225.

<sup>68</sup> California Water Code section 85225.10-85225.25.



Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (WR P1).<sup>69</sup> WR P1 subsection (a) states that:

Water shall not be exported from, transferred through, or used in the Delta if all of the following apply:

- (1) One or more water suppliers that would receive water as a result of the export, transfer, or use have failed to adequately contribute to reduced reliance on the Delta and improved regional self-reliance consistent with all of the requirements listed in paragraph (1) of subsection (c);
- (2) That failure has significantly caused the need for the export, transfer, or use; and
- (3) The export, transfer, or use would have a significant adverse environmental impact in the Delta.

WR P1 subsection (c)(1) further defines what adequately contributing to reduced reliance on the Delta means in terms of (a)(1) above. WR P1 subsection (c)(1) states:

Water suppliers that have done all the following are contributing to reduced reliance on the Delta and improved regional self-reliance and are therefore consistent with this policy:

- (A) Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the California Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8;
- (B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and
- (C) Included in the Plan, commencing with 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance. The expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used, from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code section 1011(a).

The analysis in this Appendix includes all of the elements described in WR P1(c)(1) that need to be included in a water supplier's UWMP to support a certification of consistency for a future proposed covered action.

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<sup>69</sup> Cal. Code Regs., tit. 23 section 5003.

## A.2 Expected Outcomes for Reduced Delta Reliance and Regional Self Sufficiency

The expected outcomes for this Delta reliance and improved regional self-reliance assessment were developed using guidance described in Appendix C of DWR’s Urban Water Management Plan Guidebook 2020 issued in March 2021 (Guidebook 2020). The data used in this assessment represent the total regional efforts of MWA and the retail agencies and were developed as part of a region-wide coordination process. Table A-1 shows MWA’s expected outcomes for reduced Delta reliance.

*Table A-1: Expected Outcomes for Reduced Reliance on the Delta*

Year	2010	2015	2020	2025	2030	2035	2040	2045
Total Water Supplies from the Delta Watershed	34.2%	34.2%	31.9%	28.7%	26.2%	24.4%	22.9%	22.2%
Change in Water Supplies from the Delta Watershed		-0.1%	-2.4%	-5.6%	-8.0%	-9.8%	-11.4%	-12.1%

The methodology for demonstrating reduced reliance on the Delta is consistent with DWR’s Guidebook 2020. MWA calculated its expected outcomes for reduced Delta reliance by measuring its current and anticipated water use against a baseline condition. MWA chose 2010 normal water year as its baseline. Data for the 2010 baseline were taken from relevant regional planning documents. MWA then assessed its Delta Reliance against the 2010 baseline for years 2015 through 2045.

The analysis uses normal water year demands to assess the supplies that would be used in the future. In addition, because WR P1 considers water use efficiency savings as a source of supply, the UWMP Act 20% water conservation mandates and the rules governing quantification help support water use efficiency quantification in the MWA service area. Table A-2 shows the MWA service area demands without water use efficiency and the reported water use efficiency.

*Table A-2: Demands Without Water Use Efficiency*

Total Service Area Water Demands (Acre-Feet)	2010	2015	2020	2025	2030	2035	2040	2045
Water Demands with Water Use Efficiency	145,066	138,009	129,595	130,043	134,326	136,679	139,045	141,772
Reported Water Use Efficiency	-	17,735	33,701	46,803	54,025	59,962	64,920	68,828
Water Demands without Water Use Efficiency	145,066	155,744	163,296	176,846	188,351	196,641	203,965	210,600

MWA must also report the expected outcomes for measurable improvement in regional self-reliance. Table A-3 shows the expected outcomes for supplies contributing to regional self-reliance.

*Table A-3: Supplies Contributing to Regional Self-Reliance*

<b>Water Supplies Contributing to Regional Self-Reliance</b>	2010	2015	2020	2025	2030	2035	2040	2045
Water Use Efficiency	-	17,735	33,701	46,803	54,025	59,962	64,920	68,828
Water Recycling	62,000	47,825	52,536	47,495	49,699	50,930	52,172	53,559
Conjunctive Use Projects	54,045	57,349	57,349	57,349	57,349	57,349	57,349	57,349
<b>Water Supplies Contributing to Regional Self-Reliance</b>	<b>116,045</b>	<b>122,909</b>	<b>143,586</b>	<b>151,647</b>	<b>161,073</b>	<b>168,241</b>	<b>174,441</b>	<b>179,736</b>
<b>Service Area Water Demands without Water Use Efficiency</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>
Service Area Water Demands without Water Use Efficiency	145,066	155,744	163,296	176,846	188,351	196,641	203,965	210,600
<b>Change in Regional Self Reliance (Acre-Feet)</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>
Water Supplies Contributing to Regional Self-Reliance	116,045	122,909	143,586	151,647	161,073	168,241	174,441	179,736
<b>Change in Water Supplies Contributing to Regional Self-Reliance</b>		6,864	27,541	35,602	45,028	52,196	58,396	63,691
<b>Percent Change in Regional Self Reliance</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>
Water Supplies Contributing to Regional Self-Reliance	80.0%	78.9%	87.9%	85.8%	85.5%	85.6%	85.5%	85.3%
<b>Change in Water Supplies Contributing to Regional Self-Reliance</b>		-1.1%	7.9%	5.8%	5.5%	5.6%	5.5%	5.4%

The data presented in this section demonstrate the expected outcomes for reduced Delta reliance and regional self-sufficiency. The information contained in this Appendix is also intended to be an addendum to MWA's 2015 UWMP consistent with WR P1 subsection (c)(1)(C) as well as an addendum to participating retail agencies as desired. The information has been noticed and presented in accordance with applicable law.





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# Appendix I - Notification to Agencies and Public

VWD notified San Bernardino County, the county in which VWD provides water services, of the preparation of the VWD's 2020 UWMP and WSCP 60 days prior to the public hearing via phone call on April 15<sup>th</sup>, 2021. A letter of notification was also sent to San Bernardino County after on April 22<sup>nd</sup>, 2021. As a courtesy, nearby cities and water agencies were also sent notification letters. Documentation of these notifications are provided below.

# San Bernardino County 60-Day Notification

**From:** Arnold Villarreal <AVillarreal@victorvilleca.gov>  
**Sent:** Tuesday, June 1, 2021 2:05 PM  
**To:** Kaylie Tavenner; Laine Carlson  
**Subject:** Fwd: Need Confirmation Response

FYI

Sent from my iPhone

Begin forwarded message:

**From:** "Samaras, Steve" <[ssamaras@sdd.sbcounty.gov](mailto:ssamaras@sdd.sbcounty.gov)>  
**Date:** June 1, 2021 at 1:56:53 PM PDT  
**To:** Arnold Villarreal <[AVillarreal@victorvilleca.gov](mailto:AVillarreal@victorvilleca.gov)>  
**Subject:** RE: Need Confirmation Response

[EXTERNAL EMAIL]: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon Arnold,

Yes, our conversation on April 15, 2021 should be considered your 60 day notice to the County on your update.

Thanks,



## Steve Samaras

Department of Public Works, Special Districts,  
Water and Sanitation Division  
*Division Manager*

Phone: 760.962.1530 | Fax: 760.955.9685  
[www.CountyWaterWise.org](http://www.CountyWaterWise.org)

*Our job is to create a county in which  
those who reside and invest can prosper  
and achieve well-being.*

**CONFIDENTIALITY NOTICE:** This communication contains legal privileged and confidential information sent solely for the use of the intended recipient. If you are not the intended recipient of this communication you are not authorized to use it in any manner, except to immediately destroy it and notify the sender.

*Thought for the week – Why didn't Noah just swat those two mosquitoes?*



---

**From:** Arnold Villarreal <[AVillarreal@victorvilleca.gov](mailto:AVillarreal@victorvilleca.gov)>  
**Sent:** Tuesday, June 1, 2021 10:05 AM  
**To:** Samaras, Steve <[ssamaras@sdd.sbcounty.gov](mailto:ssamaras@sdd.sbcounty.gov)>  
**Subject:** FW: Need Confirmation Response

**CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you can confirm the sender and know the content is safe.**

Good morning Steve,

We are working on finalizing our UWMP and I sent you this email below, while you were out on vacation. I imagine you are probably still going through your emails, but I wanted to see if you may confirm this for the record.

Thank you,

Arnold

---

**From:** Arnold Villarreal  
**Sent:** Wednesday, May 26, 2021 4:45 PM  
**To:** Steve Samaras <[ssamaras@sdd.sbcounty.gov](mailto:ssamaras@sdd.sbcounty.gov)>  
**Subject:** Need Confirmation Response

Good afternoon Steve,

Please disregard the previous email and respond to this one.

Please consider our phone conversation on April 15<sup>th</sup> about VWD's 2020 UWMP update the 60-day notice to the county that VWD is considering changes to the UWMP. We later sent a formal letter to the County on April 22, 2021, following this phone conversation.

Thank you,





April 22, 2021

David Wert, Public Information Officer  
County of San Bernardino

Subject: Notice of Preparation of the 2020 Victorville Water District Urban Water Management Plan (UWMP)

Dear Mr Wert:

Notice is here by given that the Victorville Water District (District) is in the process of preparing and updating its 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act and the Water Conservation Act of 2009, commonly referred to as SBX7-7. An update of Victorville's UWMP is required every five (5) years.

Water Code section 10621(b) requires an urban water supplier updating its UWMP and WSCP to notify cities and counties within its service area, which the supplier provides water supplies that the urban water supplier will be reviewing the plan or considering amendments or changes to the plan, of the update at least sixty (60) days prior to holding a public hearing. This letter serves as the District's notice that it is preparing and updating its 2020 UWMP and WSCP, to be adopted before the July 1, 2021 deadline.

A copy of the District's draft 2020 UWMP and WSCP will be available for review on the District's website in June of 2021, and the District will subsequently hold a noticed public hearing on the 2020 UWMP and WSCP in advance of its proposed adoption at the Victoreville City Council Chambers, 14343 Civic Drive, Victorville, CA 92392. The District invites you to submit comments and consult with the District regarding its 2020 UWMP and WSCP.

The District's website (<https://www.victorvilleca.gov/>) will give updates on the 2020 UWMP. If you have any questions, comments, or input regarding the District's UWMP, please contact Arnold Villarreal via email at [AVillarreal@victorvilleca.gov](mailto:AVillarreal@victorvilleca.gov).

Sincerely,

*Arnold Villarreal*

Arnold Villarreal  
Water Supply Supervisor

CITY OF

VICTORVILLE



760-955-5000  
FAX 760-269-0047

14343 Civic Drive  
P.O. Box 5001  
Victorville, CA 92393-5001

April 29, 2021

Jesse Flores, City Manager  
City of Adelanto  
Delivered Via Email

Subject: Notice of Preparation of the 2020 Victorville Water District Urban Water Management Plan (UWMP)

Dear Mr. Flores:

Notice is hereby given that the Victorville Water District (District) is in the process of preparing and updating its 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act and the Water Conservation Act of 2009, commonly referred to as SBX7-7. An update of Victorville's UWMP is required every five (5) years.

A copy of the District's draft 2020 UWMP and WSCP will be available for review on the District's website in early June of 2021, and the District will subsequently hold a noticed public hearing on the 2020 UWMP and WSCP in advance of its proposed adoption in June 2021 prior to the July 1, 2021 deadline. The District invites you to submit comments and consult with the District regarding its 2020 UWMP and WSCP.

The District's website (<https://www.victorvilleca.gov/>) will give updates on the 2020 UWMP. If you have any questions, comments, or input regarding the District's UWMP, please contact Arnold Villarreal via email at [AVillarreal@victorvilleca.gov](mailto:AVillarreal@victorvilleca.gov).

Sincerely,

*Arnold Villarreal*

Arnold Villarreal  
Water Supply Supervisor

CITY OF

VICTORVILLE



760-955-5000  
FAX 760-269-0047

14343 Civic Drive  
P.O. Box 5001  
Victorville, CA 92393-5001

April 29, 2021

Andrea Flores, City Clerk  
City of Barstow  
Delivered Via Email

Subject: Notice of Preparation of the 2020 Victorville Water District Urban Water Management Plan (UWMP)

Dear Dr. Hart:

Notice is hereby given that the Victorville Water District (District) is in the process of preparing and updating its 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act and the Water Conservation Act of 2009, commonly referred to as SBX7-7. An update of Victorville's UWMP is required every five (5) years.

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Sincerely,

*Arnold Villarreal*

Arnold Villarreal  
Water Supply Supervisor

CITY OF

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P.O. Box 5001  
Victorville, CA 92393-5001

April 29, 2021

David Burkett, Project Construction Manager  
City of Hesperia  
Delivered Via Email

Subject: Notice of Preparation of the 2020 Victorville Water District Urban Water Management Plan (UWMP)

Dear Mr. Burkett:

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Arnold Villarreal  
Water Supply Supervisor

CITY OF

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Victorville, CA 92393-5001

April 29, 2021

Kathy Cortner, General Manager  
Mojave Water Agency  
Delivered Via Email

Subject: Notice of Preparation of the 2020 Victorville Water District Urban Water Management Plan (UWMP)

Dear Ms. Cortner:

Notice is hereby given that the Victorville Water District (District) is in the process of preparing and updating its 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act and the Water Conservation Act of 2009, commonly referred to as SBX7-7. An update of Victorville's UWMP is required every five (5) years.

The District has been coordinating with Mojave Water Agency (MWA) throughout development of MWA's 2020 UWMP and will incorporate relevant information from the MWA 2020 UWMP for consistency.

A copy of the District's draft 2020 UWMP and WSCP will be available for review on the District's website in early June of 2021, and the District will subsequently hold a noticed public hearing on the 2020 UWMP and WSCP in advance of its proposed adoption in June 2021 prior to the July 1, 2021 deadline. The District invites you to submit comments and consult with the District regarding its 2020 UWMP and WSCP.

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Sincerely,

*Arnold Villarreal*

Arnold Villarreal  
Water Supply Supervisor

CITY OF

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14343 Civic Drive  
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Victorville, CA 92393-5001

April 29, 2021

Doug Robertson, Town Manager  
Town of Apple Valley  
Delivered Via Email

Subject: Notice of Preparation of the 2020 Victorville Water District Urban Water Management Plan (UWMP)

Dear Mr. Robertson:

Notice is hereby given that the Victorville Water District (District) is in the process of preparing and updating its 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act and the Water Conservation Act of 2009, commonly referred to as SBX7-7. An update of Victorville's UWMP is required every five (5) years.

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Water Supply Supervisor

CITY OF

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14343 Civic Drive  
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Victorville, CA 92393-5001

April 29, 2021

Darron Poulsen, General Manager  
Victor Valley Wastewater Reclamation Authority  
Delivered Via Email

Subject: Notice of Preparation of the 2020 Victorville Water District Urban Water Management Plan (UWMP)

Dear Mr. Poulsen:

Notice is hereby given that the Victorville Water District (District) is in the process of preparing and updating its 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in compliance with the Urban Water Management Planning Act and the Water Conservation Act of 2009, commonly referred to as SBX7-7. An update of Victorville's UWMP is required every five (5) years.

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Sincerely,

*Arnold Villarreal*

Arnold Villarreal  
Water Supply Supervisor



May 27, 2021

Jesse Flores, City Manager  
City of Adelanto  
Delivered Via Email

Subject: Notice of Availability and Hearing for the 2020 Victorville Water District Urban Water Management Plan (UWMP)

Dear Mr. Flores:

Victorville Water District (District) has updated its Urban Water Management Plan (UWMP) for 2020 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified of the District's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

UWMPs are intended to ensure prudent levels of water supply planning in the land use entitlement process and incorporate water use efficiency and evaluation of dry year conditions into this planning. The UWMP's content includes a water supply summary, a forecast of future demands, a supply versus demand strategy, including dry year scenarios, elements addressing water use efficiency, and a Water Shortage Contingency Plan.

A copy of the plan will be placed on the District's website at [www.victorvilleca.gov/government/legally-required-postings](http://www.victorvilleca.gov/government/legally-required-postings) no later than Tuesday June 1, 2021 and the hearing will be held on Tuesday, June 15, 2021 at 6 p.m. at the Victorville City Council Chambers, 14343 Civic Drive, Victorville, Ca 92392.

The District encourages public input in this plan update. If you have any questions or comments, please contact Arnold Villarreal via email at [AVillarreal@victorvilleca.gov](mailto:AVillarreal@victorvilleca.gov).

Sincerely,

*Arnold Villarreal*

Arnold Villarreal  
Water Supply Supervisor





May 27, 2021

Andrea Flores, City Clerk  
City of Barstow  
Delivered Via Email

Subject: Notice of Availability and Hearing for the 2020 Victorville Water District Urban Water Management Plan (UWMP)

Dear Andrea Flores:

Victorville Water District (District) has updated its Urban Water Management Plan (UWMP) for 2020 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified of the District's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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Arnold Villarreal  
Water Supply Supervisor

CITY OF

VICTORVILLE



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Victorville, CA 92393-5001

May 27, 2021

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City of Hesperia  
Delivered Via Email

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Water Supply Supervisor

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May 27, 2021

David Wert, Public Information Officer  
County of San Bernardino  
Delivered Via Email

Subject: Notice of Availability and Hearing for the 2020 Victorville Water District Urban Water Management Plan (UWMP)

Dear Mr. Wert:

Victorville Water District (District) has updated its Urban Water Management Plan (UWMP) for 2020 as required by the California Water Code (CWC), which requires an update at least every five years. You were notified of the District's intent to update its UWMP; this letter is providing notice to interested counties, cities, water suppliers, and other organizations that the draft update is ready for public review and a hearing has been scheduled.

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May 27, 2021

Kathy Cortner, General Manager  
Mojave Water Agency  
Delivered Via Email

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Sincerely,

*Arnold Villarreal*

Arnold Villarreal  
Water Supply Supervisor

CITY OF

VICTORVILLE



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May 27, 2021

Doug Robertson, Town Manager  
Town of Apple Valley  
Delivered Via Email

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*Arnold Villarreal*

Arnold Villarreal  
Water Supply Supervisor



May 27, 2021

Darron Poulsen, General Manager  
Victor Valley Wastewater Reclamation Authority  
Delivered Via Email

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Sincerely,

*Arnold Villarreal*

Arnold Villarreal  
Water Supply Supervisor



# J

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## Appendix J - Resolution of UWMP Adoption



**VICTORVILLE WATER DISTRICT  
RESOLUTION NO. VWD 21-006**

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE VICTORVILLE  
WATER DISTRICT ADOPTING THE VICTORVILLE WATER DISTRICT 2020  
URBAN WATER MANAGEMENT PLAN (UWMP)**

**WHEREAS**, the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 *et seq.* known as the Urban Water Management Planning Act 1983); and

**WHEREAS**, the Urban Water Management Planning Act and its subsequent amendments mandate that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually, must prepare and update an Urban Water Management Plan (“**UWMP**”) every five years, the primary objective of which is to plan for adequate supply, efficient use, and conservation of water; and

**WHEREAS**, the Victorville Water District (the “**District**”) is an urban supplier of water to over 36,000 customers and a population of over 127,000; and

**WHEREAS**, the UWMP must be adopted after public review and hearing, and must be filed with the California Department of Water Resources by July 1, 2021; and

**WHEREAS**, the District has therefore prepared and circulated for public review a draft of the 2020 UWMP, and a properly noticed public hearing regarding said 2020 UWMP was held by the District on June 15, 2021.

**NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE VICTORVILLE WATER DISTRICT DOES HEREBY RESOLVE AS FOLLOWS:**

**Section 1. Recitals**

The above Recitals are true and correct and incorporated as an operative part of this Resolution.

**Section 2. Adoption of the 2020 Urban Water Management Plan**

The Victorville Water District 2020 Urban Water Management Plan is hereby adopted and ordered filed with the Secretary of the District, and the District General Manager, or his/her designee (“**General Manager**”), is hereby authorized and directed to file the 2020 UWMP with the California Department of Water Resources by July 1, 2021.

**Section 3. Further Authorizations**

The General Manager is hereby authorized to implement the water conservation programs outlined in the 2020 UWMP, to carry out effective and equitable water conservation programs. In the event of a water shortage, the General Manager is hereby authorized to promulgate a

drought management plan as provided for in the Water Shortage Contingency Plan (Section 8) of the UWMP.

**Section 4. Compliance with Law; Severability**

If any section, subsection, clause or phrase in this Resolution is for any reason held invalid, the validity of the remainder of this Resolution shall not be affected thereby.

**Section 5. Certification**

The District Secretary shall certify to the passage and adoption of this Resolution; shall enter the same in the book of original Resolutions of the District; and shall make a minute of passage and adoption thereof in the records of the proceedings of the District, in the minutes of the meeting at which this Resolution is passed and adopted.

**Section 6. Effective Date**

This Resolution shall take effect immediately upon its adoption.

Resolution No. VWD 21-006

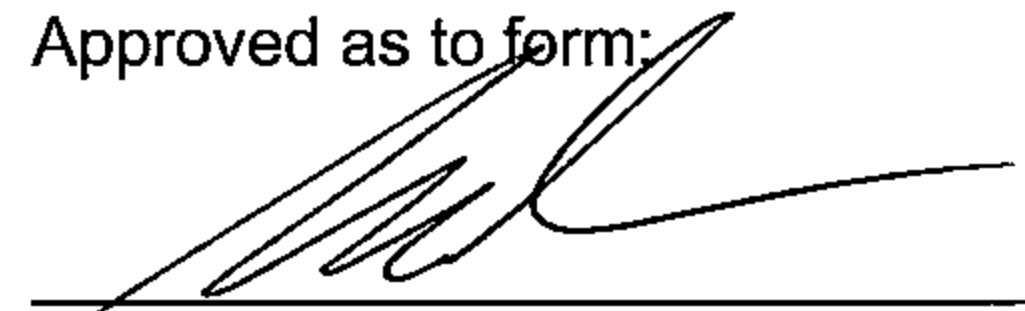
PASSED, APPROVED AND ADOPTED this 15<sup>th</sup> day of JUNE 2021.

  
\_\_\_\_\_  
Debra Jones, Chairman of the Board

Attest:

  
\_\_\_\_\_  
Charlene Robinson, Board Secretary

Approved as to form:

  
\_\_\_\_\_  
Legal Counsel

I, Charlene Robinson, City Clerk of the City of Victorville and ex-officio Clerk to the Victorville Water District of said City, do hereby certify that the foregoing is a true and correct copy of Resolution No. VWD 21-006 and was adopted at a meeting held on the 15<sup>th</sup> day of June 2021, by the following roll call vote, to wit:

AYES: Board Members Jones, Becerra, Gomez and Irving

NOES: None

ABSENT: None

ABSTAIN: None