



San Bernardino Special Districts Department

CSA 64 – SPRING VALLEY LAKE

URBAN WATER MANAGEMENT PLAN



Engineering Resources of Southern California, Inc.

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Contents

List of Figures	vi
Acronyms and Abbreviations	vii
Chapter 1 Introduction and Overview	1
1.1 Background and Purpose	1
1.2 Urban Water Management Planning and the California Water Code	2
1.2.1 Urban Water Management Planning Act of 1983	2
1.2.2 Applicable Changes to the Water Code since 2010 UWMPs	3
1.2.3 Water Conservation Act of 2009 (SB X7-7)	3
1.3 Urban Water Management Plans in Relation to Other Planning Efforts	3
1.4 UWMP Organization	4
Chapter 2 Plan Preparation	5
2.1 Basis for Preparing the Plan	5
2.1.1 Public Water Systems	5
2.1.2 Agencies Serving Multiple Service Areas / Public Water Systems	5
2.2 Regional Planning	5
2.3 Individual or Regional Planning and Compliance	6
2.4 Fiscal or Calendar Year and Units of Measure	6
2.5 Coordination and Outreach	7
2.5.1 Wholesale and Retail Coordination	7
2.5.2 Coordination with Other Agencies and the Community	8
Chapter 3 System Description	9
3.1 General Description	9
3.2 CSA 64 Service Area	13
3.2.1 Water Facilities	13
3.2.2 Transmission and Distribution Pipeline	14
3.2.3 Storage Facilities	14
3.2.4 Supply Facilities	14
3.3 Service Area Climate	15
3.4 Service Area Population and Demographics	16
3.4.1 Population Growth	16

3.4.2 Other Demographic Factors.....	17
Chapter 4 System Water Use CSA 64.....	17
4.1 Recycled Versus Portable and Raw Water Demand	17
4.2 Water Uses by Sector	17
4.2.1 Future Demands.....	19
4.3 Distribution System Water Losses	21
4.4 Water Savings from Codes, Standards, Ordinances, or Transportation and Land Use Plans	22
4.5 Water Use for Lower Income Households	22
Chapter 5 Baseline and Targets	24
5.2 Updating Calculations from 2010 UWMP	24
5.3 Baseline Period.....	24
5.4 Service Area Population	25
5.5 Gross Water Use	27
5.6 Baseline Daily Per Capita Water use	32
5.7 2015 and 2020 Targets.....	34
5.8 Compliance with 2015 Daily per Capita Water Use Target	35
Chapter 6 System Supplies.....	37
6.1 Purchased or Imported Water	37
6.2 Groundwater	38
6.2.1 Mojave River Groundwater Basin Description	38
6.2.2 Groundwater Management	43
6.2.3 Overdraft Conditions	45
6.2.4 Historical Groundwater Pumping	45
6.2.5 Groundwater Banking.....	46
6.2.6 CSA 64 Groundwater Wells.....	47
6.3 Surface Water	48
6.4 Stormwater	48
6.5 Wastewater and Recycled Water	48
6.6 Actions to Encourage and Optimize Future Recycled Water Use.....	53
6.7 Desalinated Water Options.....	54

6.8 Exchanges or Transfers	55
6.8.1 Exchanges.....	56
6.8.2 Transfers.....	56
6.8.3 Emergency Interties	56
6.9 Future Water Projects.....	56
6.10 Summary of Existing and Planned Sources of Water.....	57
Chapter 7 Water Supply Reliability Assessment.....	58
7.1 Constraints on Water Sources	58
7.2 Reliability by Type of Year	60
7.3 Supply and Demand Assessment	61
7.3.1 Average Water Year	61
7.3.2 Single Dry Water Year	62
7.3.3 Multiple Dry Water Years	62
7.4 Regional Supply Reliability	64
Chapter 8 Water Storage Contingency Planning	65
8.1 Stages of Action	65
8.2 Prohibitions on End Users.....	67
8.3 Penalties, Charges, Other Enforcement of Prohibitions.....	69
8.3.1 Customer Variances to Penalties and Charges	70
8.3.2 Customer Citation Appeal Process	71
8.4 Consumption Reduction Methods by Agencies.....	71
8.5 Determining Reductions	73
8.6 Revenue and Expenditure Impacts	73
8.6.1 Drought Rate Structures, Surcharges	74
8.6.2 Use of Financial Reserves.....	74
8.6.3 Other Measures	74
8.7 Resolution or Ordinance	74
8.8 Catastrophic Supply Interruption.....	74
8.9 Minimum Supply Next Three Years	75
Chapter 9 Demand Management Measures	77

BMP 1: Water Survey Programs for Single-Family and Multiple-Family Residential Customers	78
BMP 2: Residential Plumbing Retrofit	78
BMP 3: System Water Audits, Leak Detection and Repair	78
BMP 4: Metering with Commodity Rates for all New Connections and Retrofit of Existing	79
BMP 5: Large Landscape Conservation Programs and Incentives	79
BMP 6: High-Efficiency Washing Machine Rebate Program.....	79
BMP 7: Public Information Program	80
BMP 8: School Education Programs.....	80
BMP 9: Conservation Programs for Commercial, Industrial and Institutional (CII) Accounts	80
BMP 10: Wholesale Agency Assistance Programs.....	81
BMP 11: Conservation Pricing.....	81
BMP 12: Conservation Coordinator	81
BMP 13: Water Waste Prohibition	81
BMP 14: Residential Toilet Replacement Program.....	82
9.2 Implementation over the Past Five Years.....	82
9.3 Planned Implementation to Achieve Water Use Targets	82
Chapter 10 Plan Adoption, Submittal, and Implementation	83
10.1 Notice of Public Hearing	83
10.2 Public Hearing and Adoption	84
10.3 Plan Submittal	84
10.4 Public Availability	85
References	86
List of Appendices	87
Appendix A – Water Conservation Act	88
Appendix B – UWMP Checklist	89
Appendix C – Public Outreach Materials	90
Appendix D – Mojave Water Agency Population Forecast by Beacon Economics.....	91
Appendix E – AWWA Water Audit Software Results.....	92
Appendix F – SB X7-7 Verification Tables	93
Appendix G – Mojave Basin Area Judgement (1996)	94

Appendix H – Ordinance No. SD 15-04 (Water Conservation Program)	95
Appendix I – CSA 64 Consumer Confidence Report (2014 & 2015)	96

List of Figures

Figure 3-1 – Regional Vicinity Map.....	10
Figure 3-2 – Study Area Map.....	11
Figure 3-3 – Land Use Map.....	12
Figure 6-1 –Mojave Groundwater Basin and Subbasins.....	42
Figure 6-2 – Mojave Groundwater Basin Aquifers.....	43

Acronyms and Abbreviations

Act	Urban Water Management Planning Act
AFY	acre-feet per year
AF	acre-feet
AWAC	Alliance for Water Awareness and Conservation
BAP	Base Annual Production
CVP	Central Valley Project
CWC	California Water Code
DOF	Department of Finance
DWR	California Department of Water Resources
FPA	Free Production Allowance
GPCD	Gallons per Capita per Day
gpf	gallons per flush
GWMP	Groundwater Management Plan
HET	High Efficiency Toilet
ILI	Infrastructure Leakage Index
IRWM	Integrated Regional Water Management
MAF	million acre-feet
MF	multi-family
mgd	million gallons per day
MWA	Mojave Water Agency
PSY	Production Safe Yield
PWS	Public Water System
R3	Regional Recharge and Recovery Project
RHNA	Regional Housing Needs Allocation
RWMP	Recycled Water Master Plan
RWWTP	Regional Wastewater Treatment Plant
SB X7-7	CA Senate Bill X7-7 (Water Conservation Act of 2009)
SF	single-family
SIC	Smart Irrigation Controllers
SWP	State Water Project

USGS	US Geologic Survey
UWMP	Urban Water Management Plan
UWS	Urban Water Supplier
VVCWD	Victor Valley County Water District
VVWRA	Victor Valley Wastewater Reclamation Authority
WWMP	Wastewater Master Plan
WWTP	Wastewater Treatment Plant

Chapter 1 Introduction and Overview

This document presents the 2015 Urban Water Management Plan (UWMP or Plan) for the San Bernardino County Service Area 64 (CSA 64) service area. The San Bernardino Board of Supervisors is the governing agency for CSA 64. This chapter describes the general purpose and extents of this Plan.

1.1 Background and Purpose

The State Legislature enacted in 1983, and has subsequently amended over time, the Urban Water Management Planning Act (Act). The Act requires Urban Water Suppliers (providing water for municipal purposes, directly or indirectly, to more than 3,000 customers or supplying more than 3,000 acre-feet annually) to prepare or update an UWMP once every five years. CSA 64 supplies more than 2,000 acre-feet annually to nearly 3,800 customer connections. Based on the service area population being over 3,000, CSA 64 is required to prepare an update to the 2010 UWMP.

The purpose of this 2015 UWMP is to include the requirements of the Delta Legislation of 2009. Senate Bill 7 (SBx7-7), also known as the Water Conservation Act, is recent legislation that is required to be included with the 2015 UWMP, which specially mandates that a water agency outline water use reduction targets and procedures for achieving those targets. It is a demand-side solution aimed at reducing overall water demands within California, which could directly result in improvements to the reliability of the State Water Project. Appendix A includes a copy of the Water Conservation Act.

The 2015 UWMP was prepared in accordance with state requirements. The State Department of Water Resources (DWR) published the Guidebook/2015 Urban Water Management Plans for Urban Water Suppliers final March 2016, which includes a checklist to assist DWR staff in reviewing UWMPs. Appendix B includes a completed checklist for the 2015 UWMP.

The 2015 UWMP will serve as:

- Source documentation for Water Supply Assessments and Written Verifications
- Guidance document for water conservation
- Documentation of policy decisions and selection of water use reduction methodologies
- A long range planning document for water supply
- A database for development of regional water plans and General Plans
- A component to Integrated Regional Water Management Plans

In addition to the Water Conservation Act, the Urban Water Management Planning Act has undergone other legislative amendments. Recent and prior amendments are summarized as follows:

- Establish baseline water demands, identify water use reduction goals, and identify water conservation programs and achieving the goals.

- Describe status of current water conservation.
- Include the additional requirements pursuant to Senate Bills 610 and 221 for the purpose of providing the additional information needed during CEQA and Tentative Map process for the Water Supply Assessments and Written Verification.
- Identify and outline the water shortage contingency plan and stages of action triggered by varying levels of water shortage.
- Allow an agency, as signatory to the Memorandum of Understanding (MOU) regarding urban water conservation in California, to satisfy some of the Act's requirements for demand management measures by submitting its most recent California Urban Water Conservation Council (CUWCC) Best Management Practices (BMP) annual report.
- Allow utilities to recover, through utility rates, the cost incurred in preparing the plan and implementing best management practices.
- Evaluate water recycling and other water management alternatives.
- Coordinate with water agencies that share the same supply source and "encourage the active involvement of diverse social, cultural and economic elements of the population" throughout the preparation of the Plans (Section 10642).

Development and completion of this Plan supports the goal of CSA 64 to provide a safe and reliable water supply to meet existing and future needs of its customers. CSA 64 supplies must meet current water quality regulations and address pending water quality regulations to assure its availability in the future. As will be described in this document, the Plan successfully achieves CSA 64 goal based on conservative water supply and demand assumptions over the next twenty (20) years in combination with conservation of non-essential demand during certain dry years.

1.2 Urban Water Management Planning and the California Water Code

The UWMP Act has been amended over the years, thereby amending the requirements of the California Water Code (CWC) pertaining to UWMPs. The following sections summarize requirements for the CWC applicable to UWMPs.

1.2.1 Urban Water Management Planning Act of 1983

The UWMP Act requires water agencies to develop UWMPs that provide a framework for long term water planning and inform the public of a supplier's plans for long-term resource planning that ensures adequate water supplies for existing and future demands.

This part for the CWC requires urban water suppliers to report, describe, and evaluate:

- Water deliveries and uses;
- Water supply sources;
- Efficient water uses;
- Demand management measures; and
- Water shortage contingency planning

A checklist to ensure compliance of the Plan with the Act requirements is provided in Appendix B.

1.2.2 Applicable Changes to the Water Code since 2010 UWMPs

A summary of the changes of the CWC applicable to UWMPs is provided below:

- Demand Management Measures (CWC Section 10631 (f) (1) and (2) Assembly Bill 2067, 2014)
- Submittal Date (CWC Section 10621 (d) Assembly Bill 2067, 2014)
- Electronic Submittal (CWC Section 10644 (a) (2) Senate Bill 1420, 2014)
- Standardized Forms (CWC Section 10644 (a) (2) Senate Bill 1420, 2014)
- Water Loss (CWC Section 10631 (e) (1) (J) and (e) (3) (A) and (B) Senate Bill 1420, 2014)
- Estimating Future Water Savings (CWC Section 10631.2 (a) and (b) Senate Bill 1036, 2014)
- Defining Water Features (CWC Section 10632 (b) Assembly Bill 2409, 2010)

CSA 64 will address the latest changes to the Water Code because CSA 64 is modifying their 2010 version of the UWMP. The 2010 Urban Water Management Plan for CSA 64 is being updated to reflect the most recent requirements.

1.2.3 Water Conservation Act of 2009 (SB X7-7)

The Water Conservation Act of 2009 required retail urban water suppliers to report in their UWMPs, their Base Daily per Capita Water Use (Baseline GPCD), 2015 Interim Urban Water Use Target, 2020 Urban Water Use Target, and Compliance Daily per Capita Water Use. These terms are defined in Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use, DWR 2011 (Methodologies) consistent with SB X7-7 requirements.

Beginning in 2016, retail water suppliers are required to comply with the water conservation requirements in SB X7-7 in order to be eligible for State water grants or loans. Retail water agencies are required to set targets and track progress toward decreasing daily per capita urban water use in their service area, which will assist the State in meeting its 20 percent reduction goal by 2020.

Compliance with SB X7-7 and progress toward 20 percent reduction goals are documented in Chapter 5.

1.3 Urban Water Management Plans in Relation to Other Planning Efforts

Information within this UWMP is a reflection of the most recent planning efforts by CSA 64, as well as planning efforts related to CSA 64. CSA 64 follows San Bernardino County's and the City of Victorville's general plan that guides land use activities.

This plan was also developed in coordination with the Mojave Water Agency (MWA), a regional water provider and wholesale water supplier to CSA 64. As the regional water supplier, MWA has a wholesale agency UWMP, and in 2014 updated its Integrated Regional Water Management Plan for the Mojave Region. Additional information pertaining to MWA, the Regional Water Management Group, and CSA 64's combined efforts may be found in the 2014 Mojave Integrated Regional Water Management Plan. CSA 64 coordinated with MWA to develop water supply and demand projections utilized in this document.

1.4 UWMP Organization

The UWMP is organized according to the Chapters and Sections recommended in DWR's 2015 Guidebook for Urban Water Suppliers (Guidebook). See Table of Contents for complete layout. In addition, Appendix B provides a checklist of CWC requirements and the corresponding section in this UWMP.

Chapter 2 Plan Preparation

This chapter provides information on CSA 64 basis for preparing a 2015 UWMP and the process for developing the Plan, including efforts in coordination and outreach.

2.1 Basis for Preparing the Plan

Water Code Section 10617 defines an Urban Water Supplier (UWS) as any supplier that provides water for municipal purposes, either directly or indirectly, to more than 3,000 service connections or supplies more than 3,000 acre-feet (AF) of water annually. As of 2015, CSA 64 delivers water to approximately 3,800 service connections, therefore CSA 64 is required to prepare and adopt an UWMP and this Plan has been prepared to meet that requirement. CSA 64 has completed the 2010 version of the Urban Water Management Plan and this 2015 version is an update to that plan.

2.1.1 Public Water Systems

CSA 64 is a Public Water System (PWS) as defined in California Health and Safety Code Section 116275, meaning that it provides water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. Table 2-1 summarizes the Public Water System in CSA 64.

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
3610121	CSA 64	3,811	2,466
TOTAL		3,811	2,466
NOTES: Data gathered from Production, Consumption, and Connection information provided by the San Bernardino County Special Districts Department.			

2.1.2 Agencies Serving Multiple Service Areas / Public Water Systems

This section is not applicable to CSA 64. Only one PWS exists within the service area.

2.2 Regional Planning

CSA 64 cooperates with the MWA managing the region's water resources. CSA 64 consulted MWA's 2015 UWMP while preparing this UWMP, and coordinated with MWA in the development of water demand projections that are included in this 2015 UWMP. CSA 64 is

located within the Mojave Integrated Regional Water Management (IRWM) Region and participated in the development of the 2014 update to the Mojave IRWM Plan.

2.3 Individual or Regional Planning and Compliance

This UWMP has been developed as an Individual UWMP, and is intended to address the requirements of the CWC for CSA 64 only. CSA 64 is a member of the MWA RUWMP and additional information can be found in the 2014 Mojave Region Integrated Regional Water Management Plan that was completed by Kennedy/Jenks Consultants in June of 2014.

Table 2-2: Plan Identification		
Select Only One	Type of Plan	Name of RUWMP or Regional Alliance <i>if applicable</i> <i>drop down list</i>
<input checked="" type="checkbox"/>	Individual UWMP	
	<input checked="" type="checkbox"/> Water Supplier is also a member of a RUWMP	Other
	<input type="checkbox"/> Water Supplier is also a member of a Regional Alliance	
<input type="checkbox"/>	Regional Urban Water Management Plan (RUWMP)	
NOTES: CSA 64 is part of the Integrated Regional Water Management Plan for the Mojave Water Agency.		

2.4 Fiscal or Calendar Year and Units of Measure

Table 2-3 provides a summary of the units of measure used for this Plan. CSA 64 records and operates all water delivery and measurement data using the calendar year. All information presented in this UWMP will also be in calendar years, except where noted (see Table 2-3). Water supplies are presented in units of acre-feet, except where discussing per capita use (gallons per capita per day or GPCD) and climate data (inches of evapotranspiration and precipitation).

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
<input type="checkbox"/>	Agency is a wholesaler
<input checked="" type="checkbox"/>	Agency is a retailer
Fiscal or Calendar Year (select one)	
<input checked="" type="checkbox"/>	UWMP Tables Are in Calendar Years
<input type="checkbox"/>	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES: CSA 64 is a water retailer. Tables will be in calendar years. Water measurement will be conducted in Acre Feet.	

The annual water production and consumption data has been recorded in Acre Feet for CSA 64 and all tables included in this UWMP document will be in Acre Feet.

2.5 Coordination and Outreach

CSA 64 has made efforts to coordinate with the region's wholesale water supplier (MWA), and the surrounding communities. The City of Hesperia to the south, the City of Victorville to the north and west, and the Town of Apple Valley to the east. The surrounding communities are also part of MWA's RUWMP because they rely on the groundwater that MWA monitors.

2.5.1 Wholesale and Retail Coordination

Mojave Water Agency is the region's wholesale water provider. MWA has provided CSA 64 with water demand projections for use in its 2015 UWMP. MWA data was used to determine the possible production and consumption information for the next twenty five (25) years.

Table 2-4 Retail: Water Supplier Information Exchange
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
Wholesale Water Supplier Name <i>(Add additional rows as needed)</i>
Mojave Water Agency
NOTES: Mojave Water Agency monitors the groundwater levels found in the aquifer.

2.5.2 Coordination with Other Agencies and the Community

CSA 64 has and continues to actively encourage community participation in its on-going water management activities and specific water related projects. CSA 64 public participation programs include mailings, public meetings, and web-based communication. CSA 64 water conservation program involves a variety of public awareness programs. The San Bernardino Board of Supervisors governs CSA 64 and has regularly scheduled meetings that include public comment on water issues. A completed draft of this report will be sent over to the Mojave Water Agency, and posted to CSA 64's website in order for the neighboring retail water purveyors of Apply Valley Ranchos Water Company, Victorville Water District and the City of Hesperia to be included in planning coordination.

Chapter 3 System Description

This chapter includes a description of the CSA 64 service area and climate, CSA 64's organizational structure and history, and population and demographics.

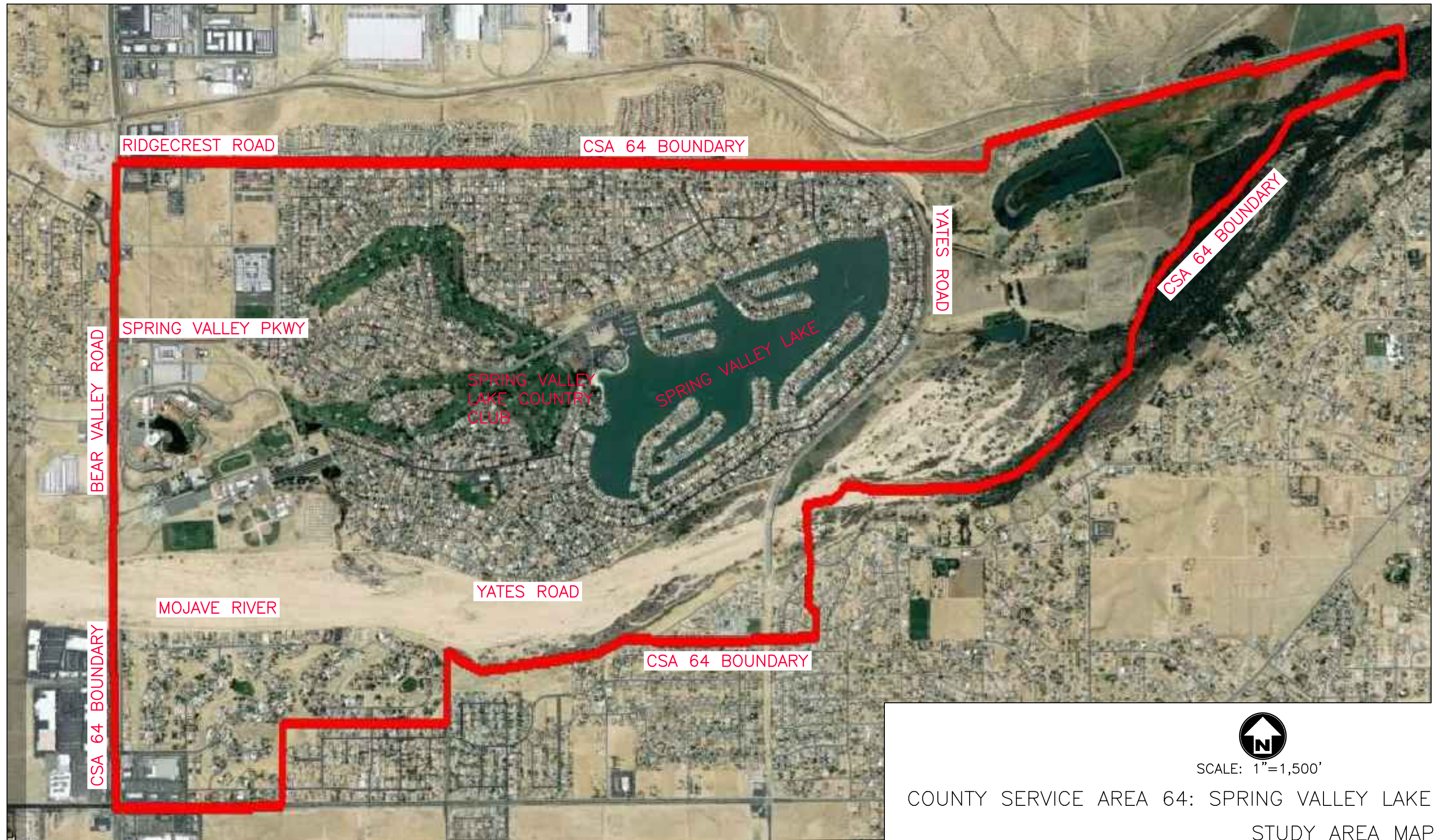
3.1 General Description

County Service Area 64 Spring Valley Lake (CSA 64) is located in the Victor Valley High Desert Region of San Bernardino County and is located south of the City of Victorville, and consists of residential, commercial, retail, schools and recreational uses including a golf course, Spring Valley Lake and equestrian uses. CSA 64 service area covers approximately four (4) square miles and is situated in unincorporated area of San Bernardino County along the upper reaches of the Mojave River. The service area is generally bounded by Bear Valley Road to the south, Ridgecrest Road to the west, and generally the Mojave River to the east and northeast. Some additional residential and commercial land use areas are located between the Mojave River and Apple Valley Road. The following figures show the CSA 64 Regional Vicinity Map, the CSA 64 Study Area Map, and CSA 64 Land Use Map.



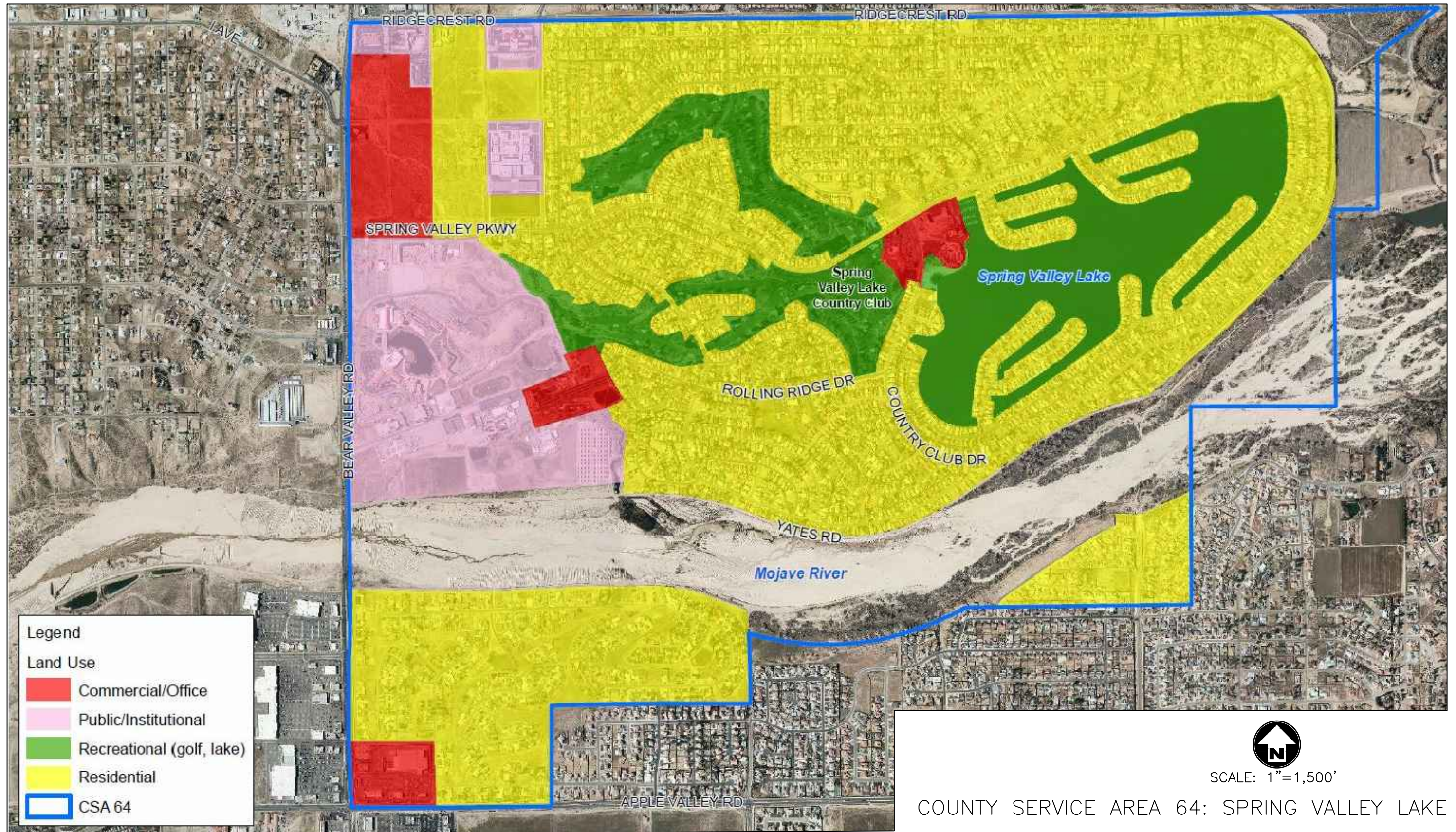
COUNTY SERVICE AREA 64: SPRING VALLEY LAKE
REGIONAL VICINITY MAP

10



COUNTY SERVICE AREA 64: SPRING VALLEY LAKE
STUDY AREA MAP

FIGURE 3-2



Several factors affect water demand habits, which can be used to project future demands based on anticipated growth. Factors such as climate, socioeconomic characteristics, land use and population are the primary drivers of water demand. The Water Conservation Act of 2009 (Senate Bill 7) now requires water agencies that serve more than 3,000 thousand service connections or more than 3,000 acre-feet per year (AFY) to achieve specific water use reduction goals by 2020 (20X2020). This could alter traditional water use habits and will reduce overall per-capita water usage. CSA 64 has already begun a water conservation plan, which included installation of meters for all users (completed in 1995) and implementation of a tiered-rate structure for customer billing which charges the high consumption users more for their water use. The District's plan for achieving the water use reduction goals of CSA 64 must be identified in the 2015 UWMP. The water use reduction plan is detailed in Chapter 5.

CSA 64 encompasses a total gross area of approximately 2,576 acres (4.02 square miles). A large portion of this land is undevelopable open space at the north end or within the Mojave River. Net developed/developable area within CSA 64 is approximately 2,076 acres, and includes a combined total of 4,185 developed and undeveloped residential lots on 1,341 acres. The nonresidential uses include recreational uses of the golf course, lake, and equestrian center. Other nonresidential uses include commercial, retail and office, as well as the institutional land uses of the Victor Valley College, elementary, middle, and high schools that are located throughout the service area.

The study area consists of rugged outcrops of basement rock surrounded by alluvium-filled basins. The area's most distinguishing feature is the Mojave River, which traverses the east side of the Study Area. The river flows throughout its length only during high runoff conditions. Much of the year, however, the river is dry although considerable groundwater moves through the river alluvium. At Victorville, it passes through a shallow granite gorge that forces the underflow to the surface. Topography of the Study Area is uniform throughout most of the area. Elevations within CSA 64 vary from 2,900 feet in the southwesterly portion to 2,780 feet in the northeasterly portion. The elevation difference of approximately 120' between the northern and southern portion of the Study Area has caused the water distribution system to be divided into two water pressure zones.

3.2 CSA 64 Service Area

Figure 3-2 Study Area Map depicts the service area boundary of CSA 64. No significant changes have been made to the service area boundary from the baseline period through 2015.

3.2.1 Water Facilities

The existing CSA 64 water system serves an area of approximately 2,576 acres (4.02 square miles) with an estimated 3,872 residential service connections including both single family residential and multi-family residential connections, and 54 non-residential service connections including commercial, institutional, and landscape connections for the 2015 year. As noted previously, the system is divided into two (2) pressure zones. Water service in each zone are gravity fed from storage reservoirs located at higher elevations to maintain a fixed hydraulic gradient throughout the distribution system via gravity.

3.2.2 Transmission and Distribution Pipeline

The majority of the distribution system consists of asbestos cement pipe ranging in size from 6-inch to 12-inch in diameter with some 4-inch diameter pipeline located in street cul-de-sacs. Transmission pipeline from the upper zone storage site to the CSA 64 distribution system consists of 12-inch and 16-inch pipelines. The service area has approximately thirty-six (36) miles of distribution piping located throughout the service area. The service area has six (6) inch piping as the most abundant used pipe for water distribution totaling approximately twelve (12) miles. The other sizes of pipe, ranging from four (4) to sixteen (16) inches make up the remainder of the distribution system piping.

3.2.3 Storage Facilities

CSA 64 incorporates above-ground storage facilities for direct service to each of its pressure zones. The Zone 1 storage site is located on Pebble Beach Drive, and provides a total capacity of one (1.0) million gallons (MG). The Zone 2 storage site is located on Santa Fe Avenue East, and provides a total storage capacity of 1.65 MG. CSA 64 operates one tank at the Zone 1 site and 2 tanks at the Zone 2 site. As of 2015, the service area has a combined storage capacity of 2.65 million gallons found in above ground storage tanks located in Zone 1 and Zone 2.

CSA 64 proposes to add storage capacity at each above ground storage site to improve reliability and increase well pumping efficiency. Staff have plans to construct new storage reservoirs which will increase the storage capacity for the service area to a total of six million gallons of storage, which will increase system reliability during periods of high demand which occurs in the summer months. The proposed above ground storage reservoirs have not been constructed and the future construction date has yet to be determined.

3.2.4 Supply Facilities

CSA 64 currently relies on groundwater as the only source of supply. The water system operates five (5) wells with a total discharge capacity of approximately 5,560 gallons per minute.

Groundwater is projected to remain the primary source of supply for all CSA 64 water users. The MWA defines the groundwater management plan which incorporates the Mojave Groundwater Basin 1998 Stipulated Judgement and governs all significant users (referred to as Pumpers or Producers) of the basin and its subbasins including the Alto Subbasin. The GWMP defines the Watermaster's (MWA) activities which are successfully returning groundwater levels to safe elevations in each of the subbasins and enhancing the overall operation of the basin for optimum reliability.

As the initial steps of the Stipulated Judgement, the Watermaster calculated each Producer's base annual production from past production records and administered a "ramp-down" period in attempt to bring the basin production to more sustainable levels. For the Alto Subbasin, this has reduced the Producers to approximately sixty (60) percent Base Annual Production (BAP). Thus CSA 64, and all other Producers of the Alto Subbasin dependent upon groundwater, typically requires replenishment water for safe basin operation and to sustain the basin's viability as a primary water supply. As a contract agency of the SWP, the Watermaster also acts as wholesale water provider of imported SWP water for replenishment of the Mojave Groundwater Basin.

MWA incorporates a strict monitoring program that tracks all basin production (output) and recharge (input), and administers the preparation of annual groundwater reports that identify key basin parameters to calculate each Producer's share of safe basin yield for the ensuing 12-month period. Specifically, the annual reports calculate Production Safe Yield (PSY) as well as each Producer's Free Production Allowance (FPA) and their verified production for the previous 12 months.

3.3 Service Area Climate

The service area is located in Southern California's High Desert, with a generally dry climate. The nearest CIMIS station is in Victorville, located several miles to the northwest of the service area, and is considered to be representative of the climate in CSA 64. Representative precipitation, temperature, and reference evapotranspiration (ET_o) data for CSA 64 are reported in Table 3-0 for the period 1997 through 2014. Average annual precipitation during the same period was approximately seven (7) inches, with fluctuations ranging from nearly nineteen (19) inches in 2010 to as low as only one (1) inch in all of 2013.

Climatic conditions are characterized by meager rainfall, low humidity, high summer temperatures, abundant sunshine, relatively cool winters, and frequent high winds. The frost-free temperature is more than 204 days per year for the Victorville area.

Table 3-0: Climate Data			
Year	Total Eto (in)	Total Precipitation (in)	Average Air Temperature (F)
1997	68	6	61
1998	62	11	58
1999	68	3	60
2000	68	3	61
2001	67	7	62
2002	70	2	61
2003	67	12	62
2004	66	14	61
2005	65	13	61
2006	68	4	61
2007	71	3	62
2008	69	4	61
2009	66	3	59
2010	66	19	60
2011	67	12	59
2012	70	5	62
2013	69	1	61
2014	68	2	63
Average	68	7	60.8

The total precipitation for the last eighteen (18) years has averaged only seven (7) inches per year. This level of precipitation is not adequate to recharge the groundwater aquifer with the pumping demand required to provide potable water to consumers. Additional water sources (SWP water, recycled water, and other possible sources) will be required to keep the groundwater aquifer at adequate levels to ensure groundwater pumping reliability and quality of groundwater production found in the service area.

3.4 Service Area Population and Demographics

Population demographics were determined using an economic analysis that accounted for housing costs, job availability, and other factors to determine potential population growth that would occur in CSA 64 service area in the future. The projected population for CSA 64 is described in the following sections.

3.4.1 Population Growth

Population growth projections developed by Mojave Water Agency as part of their 2015 UWMP update were used to project growth for CSA 64. MWA engaged Beacon Economics to prepare a population forecast for their service area and its incorporated cities, subareas, and water purveyors, and is based on historic correlations with population trends in their surrounding area. Beacon Economics released a report in December 2015 describing the methodology and results of their population forecast. The full report is included in Appendix D, and excerpts below provide an overview:

“A long run driver of future population in the surrounding area was used to forecast population growth out to the year 2040. In the case of the sub areas and water purveyors in unincorporated regions of the MWA service area, the historical population data was correlated with the nearest incorporated city.

Historical data used in the forecast of the incorporated cities were obtained from the California Department of Finance (DOF), which makes estimates available from 1970 forward on an annual basis. With this data in hand, an econometric time series model was created to capture the historical correlations with countywide population growth. Future population growth for the incorporated cities of the MWA service area was then estimated using these historic correlations and a long run driver of countywide population growth.”

Table 3-1 Retail: Population - Current and Projected

Population Served	2015	2020	2025	2030	2035	2040(opt)
	9,541	10,267	11,205	12,236	13,246	14,156

NOTES: Data obtained from Mojave Water Agency Population Forecast that was conducted by Beacon Economics.

Population growth is anticipated to occur within CSA 64, including residential, commercial, institutional, and landscape irrigation. CSA 64 percent buildout is significantly higher than percent buildout of the Mojave Water Agency's overall buildout of the Alto subarea. The population estimate assumes buildout condition which means that the residential lots will be completely developed and multi-family residential developments will be constructed in the southern portion of the service area. The population estimate assumes that buildout will occur by 2040.

3.4.2 Other Demographic Factors

The service area includes a portion of undevelopable land because of the Mojave River and the existing Spring Valley Lake. The anticipated growth in these undeveloped areas has been included in the population projections. The service area also contains Victor Valley College (VVC or College), that will have a large population during the daytime during certain times of the year (when the college is in session) and will have an impact on water demand and supply calculations, but will not be considered for population purposes. The College has a current enrollment of approximately 13,000 full-time and part-time students.

Chapter 4 System Water Use CSA 64

This chapter describes current water usage and projected future demands within CSA 64's service area. Water usage is divided into use sectors including single-family residential, multi-family residential, commercial, institutional, landscape, and other purposes. Past and current water usage are based on actual water delivery records from CSA 64; the methodology for developing water use projections is described in more detail in the following sections.

4.1 Recycled Versus Portable and Raw Water Demand

CSA 64 does not currently deliver any recycled water. All water demands are met with potable groundwater supplies. According to the 2015 Public Water System Statistics recorded for CSA 64 staff, the service area currently has no recycled water connections and therefore has not delivered any recycled water to the service area. It has been assumed that until the demand for recycled water increases in the service area, CSA 64 will continue to rely on potable groundwater as their only source of water. For CSA 64 to be eligible to receive recycled water, recycled water pipeline facilities must be constructed from the nearest recycled water treatment plant to be able to deliver water to the service area. The amount of recycled water that would be available to the service area is dependent on the amount of wastewater that is collected from the service area.

4.2 Water Uses by Sector

In 2015, CSA 64 produced 2,466 AF of water into the distribution system. Metered water deliveries to customers were 2,036 AF, and all water demands were met with potable water. By far the largest water use type within the service area is Single Family Residential, comprising nearly 86% of all metered deliveries in the 2015 Public Water System Statistics collected by CSA 64 staff. Water demands in 2015 are organized by type in Table 4-1.

The difference between water production and metered deliveries is shown in Table 4-1 as “Losses” and totals 430 AF for 2015, or approximately 17 percent of total production. This difference represents all unaccounted for water, or “apparent losses” and can be attributed to a variety of factors, including but not limited to meter inaccuracies, fire flows, leaks, system flushing, and other water losses. A detailed water audit and leak detection program of 47 California water utilities found an average loss of 10 percent, and CSA 64 is above this statewide average. Utilizing the American Water Works Association water audit tool for CSA 64’s system yielded a different water loss number than that shown in Table 4-1, and is described further in Section 4.3.

The Water Code requires an accounting of non-revenue water. Non-revenue water includes unmetered public uses (street and sewer cleaning, fire hydrant flushing, firefighting and fire prevention, construction, etc.). Every water system has a certain amount of unaccounted water use (line losses, fire flows, emergency repairs, system flushing, etc.). The meters installed on water production wells and customer service connections have enabled CSA 64 to establish an accurate accounting of total water usage and “unaccounted for” water (water loss). Table 4-0 summarizes the historical metered water production, consumption, and the resulting “water losses” for the previous eleven (11) years (in acre feet).

Table 4-0 Retail: Historical Water Production and Billed Delivery Consumption			
Year	Actual Production	Billed Consumption	Losses
2005	3,498	3,124	374
2006	3,734	3,518	216
2007	3,764	3,359	405
2008	3,476	3,158	318
2009	3,433	3,123	310
2010	3,247	2,729	518
2011	3,021	2,634	387
2012	3,129	2,687	442
2013	3,152	2,751	401
2014	2,995	2,589	406
2015	2,466	2,036	430
Average	3,265	2,883	382
NOTES: Information provided by the San Bernardino County Special Districts Department regarding the historical metered production and metered consumption.			

The GPCD was determined by taking the total production from 2015 and dividing it by the 2015 population that was forecasted by Beacon Economics for Mojave Water Agency. The population estimate provided by Beacon Economics is based on a population forecast model. The actual CSA 64 population is difficult to determine because it is not located in a census or defined city boundary and therefore the population must be estimated. Beacon economics has provided a

current and future forecast for the population of CSA 64. The DWR population tool will provide another estimate for the population. CSA 64 also estimates that the population is 3.7 times the number of active connections. Because Beacon Economics provided a current and future population estimate, the data from Beacon Economics will be used as the population information for this Plan.

CSA 64 records service connections by Customer Class and their measured water consumption, as well as closely monitors well production, for a complete accounting of water produced and distributed within its system. CSA 64 submits Public Water System Statistics (PWSS), as required by the California Department of Water Resources. The historical water consumption and production from the PWSS reports was analyzed for the 2015 UWMP. The water demand for 2015 is shown in Table 4-1 (acre feet).

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type (Add additional rows as needed)	2015 Actual		
Drop down list <i>May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>	Additional Description (as needed)	Level of Treatment When Delivered <i>Drop down list</i>	Volume (HCF)
Single Family		Drinking Water	1,738
Multi-Family		Drinking Water	8
Commercial	Includes Victor Valley Community College	Drinking Water	140
Landscape		Drinking Water	150
Losses		Drinking Water	430
TOTAL			2,466
NOTES: Information provided by the San Bernardino County Special Districts Department and the Public Water System Statistics obtained from the California Department of Water Resources.			

4.2.1 Future Demands

Total water production for CSA 64 water supply facilities (groundwater wells) must meet, at a minimum, metered consumption, unmetered public water uses and water loss. CSA 64's water use reduction plan (Chapter 8) includes programs designed to detect and quickly repair system leaks and replacement of water meters and distribution facilities at regular intervals. These programs will minimize water loss and reduce CSA 64's current water loss rate. Therefore, it is assumed that the programs will improve overall water loss efficiency.

The overall number of connections in the past five (5) years has increased for CSA 64. The number of connections found in 2010 is approximately 3,748, whereas the number of connections found in 2015 is approximately 3,811. The number of connections has not increased every year for the

past five (5) years. In the years of 2013 and 2014, the number of connections actually decreased from the previous year. Over the past five (5) years the service accounts have grown by approximately 15 connections per year and this primarily occurs in the residential sector. It is anticipated that the current low growth trend will continue for the service area because the only opportunity for growth seems to be in the residential sector. For conservative analysis, it is assumed that approximately 20 new service connections could be added to the water system annually, for a total of 500 new accounts through the year 2040. It is assumed that the production will increase at the same rate of the number of connections. The percentage increase is approximately 1.13% for the next twenty five (25) years for water demand.

Without specific general planning land uses, it is further assumed for the 2015 UWMP growth projections that the remaining vacant lots among the residential uses will be developed with single family homes, and that much of the area adjacent to the schools at the south end of CSA 64 will be developed as multifamily residential. The remaining undeveloped area adjacent to the schools could fill in with commercial/office type uses, and with institutional uses for potential expansion of Victor Valley College.

It was assumed that the number of connections would increase over the next twenty five (25) years by 1.13%. Using this 1.13%, the potable water demand was assumed to increase by 1.13% for each of the Land Use Types.

Table 4-2 describes the future water demand for each of the Land Use types, with the single family residential accounting for the majority of the water demand found in CSA 64. See Table 4-2 for future water demands, in acre feet, for each land use type in five year increments from 2020 to 2040.

Table 4-2 Retail: Demands for Potable and Raw Water - Projected						
Use Type <i>(Add additional rows as needed)</i>	Additional Description <i>(as needed)</i>	Projected Water Use (HCF) <i>Report To the Extent that Records are Available</i>				
<u>Drop down list</u> <i>May select each use multiple times</i> <i>These are the only Use Types that will be recognized by the WUEdata online submittal tool</i>		2020	2025	2030	2035	2040-opt
Single Family		1,964	2,219	2,508	2,834	3,202
Multi-Family		9	10	12	13	15
Commercial	Includes Victor Valley Community College	158	179	202	228	258
Landscape		170	192	216	245	276
Losses		486	549	620	701	792
TOTAL		2,787	3,149	3,558	4,021	4,543
NOTES: Assume Connection and Potable Water Demand increase by 1.13% for each five (5) year period.						

CSA 64 currently does not rely on recycled water as a potable water source. In the future, CSA 64 will continue to rely on potable groundwater as the only water supply source for the service area. The use of recycled water is not planned for the CSA 64 service area presently and no plans have been developed to use recycled water in the future. The recycled water facilities that need to be constructed in order for CSA 64 to use recycled water will have a large cost, and the small

amount of wastewater that CSA 64 generates and is able to capture in a sewer system to be turned into recycled water make it even more difficult for recycled water to be an option for this service area.

Table 4-3 Retail: Total Water Demands (HCF)						
	2015	2020	2025	2030	2035	2040 (opt)
Potable and Raw Water <i>From Tables 4-1 and 4-2</i>	2,466	2,787	3,149	3,558	4,021	4,543
Recycled Water Demand* <i>From Table 6-4</i>	0	0	0	0	0	0
TOTAL WATER DEMAND	2,466	2,787	3,149	3,558	4,021	4,543
<i>*Recycled water demand fields will be blank until Table 6-4 is complete.</i>						
NOTES:						

As with the population growth projections described in Chapter 3, a significant portion of the growth in water demand projected in Tables 4-2 and 4-3 (in acre feet) is likely to occur in Single-Family Residential development. As shown in the table above, the service area is not supplied with recycled water for potable water reuse and therefore must rely on groundwater as the only potable water source for the service area.

4.3 Distribution System Water Losses

An audit of CSA 64's water system was completed utilizing the American Water Works Association (AWWA) water audit software. The water audit was conducted for the 12-month period for the year of 2015, with 2,466 AF entering the distribution system and an estimated 430 AF of water losses based on the metered consumption data that was recorded by CSA 64. The water audit software accounts for water supplied, authorized consumption, water losses (both apparent and real losses), system data (pipe length, number of connections, lateral distance, and average operating pressure), and cost data associated with operating the water distribution system. The data in Excel format will be provided electronically to DWR and the results are summarized in Table 4-4 below (acre feet). Appendix E contains the AWWA Water Audit results that were obtained by using the water audit software.

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss* (HCF)
01/2015	399.18
* Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.	
NOTES: The Volume of Water Loss is found by using the AWWA software tool. This value does not match the metered production minus the metered consumption value that was determined from data collected by Special Districts staff.	

4.4 Water Savings from Codes, Standards, Ordinances, or Transportation and Land Use Plans

The water savings from land use planning has not been considered in to the demand projections included in this Plan. Low Income Residential Demands are also not included in the demand projects found in this plan. A small portion of land located near the southern boundary of the service area, which is currently undeveloped, has been identified as low income housing. The low income housing demand projections have not been identified in this Plan because the area has not been developed, and there is no plans for development in the near future.

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

4.5 Water Use for Lower Income Households

According to the (County General Plan or other planning document) a number of multi-family residences are set aside for families qualifying as low income benefits or already within approved projects with affordable housing partners. County Planning potentially could make proposed

multi-family housing units available for low income benefits in the future. Unit water usage for low income housing units is estimated to be similar to the City's overall residential water usage.

A small portion of the service area has been set aside as low-income housing based on the City of Victorville General Land Use Plan. The portion of the service area lies within the City of Victorville, which is eligible for low-income housing. The problem is that the majority of the CSA 64 service area is not eligible for low-income housing. The current area that is zoned for low-income housing has yet to be developed into Multi-Family Residential that is adequate for low-income housing. Once the service area approaches build out, it will have to make a determination if the Multi-Family Residential that is located on the southern boundary of the service area is indeed eligible for low-income status.

For this Plan, it is assumed that the County of San Bernardino does not include any low-income housing units within CSA 64, and does not currently plan to establish low-income housing within CSA 64 within the 2015 UWMP planning horizon.

Chapter 5 Baseline and Targets

Consistent with SB X7-7, the 2015 UWMPs must determine baseline water use and service area populations, as well as target water use for the years 2015 and 2020. For the 2015 Plan, agencies must demonstrate compliance with the established water use target for 2015 and progress toward the 2020 target. This chapter describes the calculation of baselines and targets, progress toward meeting targets, and includes the information required in the SB X7-7 Verification Form, included in Appendix F.

CSA 64's baseline population data has been revised to reflect updates to population numbers, which in turn have resulted in revisions to its target per-capita water use reductions. CSA 64 met its 2015 target for per capita water use.

5.2 Updating Calculations from 2010 UWMP

Due to CSA 64 being located in the unincorporated areas and not within a census boundary, the population was estimated using the DWR Population Tool. The DWR Population Tool was used to estimate the Base Daily Per Capita Water Use. This estimate utilizes information on population as well as base gross water use. For the purposes of this UWMP, baseline service area population was estimated as described in Section 5.4. The unit of measure as mentioned in Table 2-3 is Acre Feet.

SB X7-7 Table 0: Units of Measure Used in UWMP* <i>(select one from the drop down list)</i>
Acre Feet
<i>*The unit of measure must be consistent with Table 2-3</i>
NOTES: All water measurements completed in Acre Feet.

The water data collected by CSA 64 was collected in Acre Feet and was collected using calendar years.

5.3 Baseline Period

The UWMP Act allows urban water retailers to evaluate their base daily per capita water use using a 10 or 15-year period. A 15-year base period within the range January 1, 1990 to December 31, 2010 is allowed if recycled water made up 10 percent or more of the 2008 retail water delivery. If recycled water did not make up 10 percent or more of the 2008 retail water delivery, then a retailer must use a 10-year base period within the range January 1, 1995 to December 31, 2010. Recycled water did not make up 10 percent of the 2008 delivery to CSA 64 service area and for this reason the Base Daily Per Capita Water Use is based on a 10-year baseline period.

CSA 64 has selected the 10-year period beginning January 1, 2001 and ending December 31, 2010 as its baseline period. In addition, CSA 64 evaluated the 5-year period beginning January 1, 2006 and ending December 31, 2010 to confirm the target meets the minimum water use reduction requirements. SB X7-7 Table 1 presents the baseline period ranges.

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	3,476	Acre Feet
	2008 total volume of delivered recycled water	-	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period ^{1, 2}	10	Years
	Year beginning baseline period range	2001	
	Year ending baseline period range ³	2010	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2006	
	Year ending baseline period range ⁴	2010	
¹ If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.			
² The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.			
³ The ending year must be between December 31, 2004 and December 31, 2010.			
⁴ The ending year must be between December 31, 2007 and December 31, 2010.			
NOTES:			

Due to the fact that recycled water was not used previously, and is not planned for the future, CSA 64 can use a ten year base period because 0% of the total water delivered in 2008 was from recycled water sources.

5.4 Service Area Population

CSA 64 utilized DWR Population Tool (Methodology 3) for CSA 64 to determine population within the service area. This is because the service area boundary is not located within a City boundary or census boundary and is part of the unincorporated area. See SB X7-7 Table 2 for population information that was obtained from the DWR Population Tool. This population will be different from what Beacon Economics has projected for the service area, and will also be different from the population estimate that was completed by the CSA 64 staff that assumed that the population would be 3.7 times the number of active connections.

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
<input type="checkbox"/>	1. Department of Finance (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	2. Persons-per-Connection Method
<input checked="" type="checkbox"/>	3. DWR Population Tool
<input type="checkbox"/>	4. Other DWR recommends pre-review
NOTES: Since the CSA 64 boundary does not fit into a census tract, the DWR Population Tool was used to estimate CSA 64 population.	

SB X7-7 Table 3 presents the population numbers for the service area for both the 10 and 5 year baselines.

The yearly population data for the 10 year baseline for 2001, 2002, 2003, and 2005 was not added to Table 3 because those years do not have the number of Single Family Residential connections. The number of Single Family Residential connections is important to estimate the service area population and during the years listed above the number of Single Family connections was not recorded.

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	2001	
Year 2	2002	
Year 3	2003	
Year 4	2004	9,315
Year 5	2005	
Year 6	2006	9,639
Year 7	2007	6,474
Year 8	2008	9,399
Year 9	2009	9,524
Year 10	2010	9,543
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2006	9,639
Year 2	2007	9,474
Year 3	2008	9,399
Year 4	2009	9,524
Year 5	2010	9,543
2015 Compliance Year Population		
2015		9,239
NOTES: The Number of Connections was not available for years prior to 2004, and the 2005 data is also missing. Single Family Residential connection data was not recorded.		

Although some of the data regarding population for the 10 year baseline is missing, the 5 year baseline has the required population figures because the number of Single Family Residential connections was recorded for the 5 year baseline years between 2006 and 2010.

5.5 Gross Water Use

Base gross water use is defined as the total volume of water, treated or untreated, entering the distribution system of CSA 64, excluding: recycled water, net volume of water placed into long-term storage, water conveyed to another urban water supplier, water delivered for agricultural use, and process water. None of the exclusions apply to CSA 64's distribution system and the tables have been filled out to show no exclusions. SB X7-7 Table 4 shows that Annual Gross Water Use for both the 10 Year Baseline and the 5 Year Baseline Gross Water Use.

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>	
10 to 15 Year Baseline - Gross Water Use								
Year 1	2001	3,542			-		-	3,542
Year 2	2002	3,775			-		-	3,775
Year 3	2003	3,652			-		-	3,652
Year 4	2004	3,785			-		-	3,785
Year 5	2005	3,498			-		-	3,498
Year 6	2006	3,734			-		-	3,734
Year 7	2007	3,764			-		-	3,764
Year 8	2008	3,476			-		-	3,476
Year 9	2009	3,433			-		-	3,433
Year 10	2010	3,247			-		-	3,247
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								3,591
5 Year Baseline - Gross Water Use								
Year 1	2006	3,734			-		-	3,734
Year 2	2007	3,764			-		-	3,764
Year 3	2008	3,476			-		-	3,476
Year 4	2009	3,433			-		-	3,433
Year 5	2010	3,247			-		-	3,247
5 year baseline average gross water use								3,531
2015 Compliance Year - Gross Water Use								
2015		2,466	-		-		-	2,466
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3								
NOTES:								

CSA 64 does not export water to other surrounding communities and therefore Table 4 will have a blank column under the Exported Water tab. CSA 64 does not rely on recycled water for potable water reuse and therefore the Indirect Recycled Water column will be blank in Table 4. Since the CSA 64 service area does not contain either agriculture or industrial land use types, the Water

Delivered for Agricultural Use and Process Water columns found in Table 4 will all remain blank. CSA 64 relies solely on groundwater as the potable water supply. Deductions will not be taken from Table 4.

The volume of water entering the distribution system each year is shown in SB X7-7 Table 4-A below. For the baseline years and 2015 compliance year, all water entering the system was CSA 64's own water source produced by groundwater wells. There were no meter error adjustments made to the data. The CSA 64 service area has a Free Production Allowance that allows them to pump a certain amount of water from the groundwater aquifer without the need to obtain replacement water. The Free Production Allowance for the service area has been ramped down by the Watermaster in order to maintain appropriate groundwater levels in the aquifer. Any water that is pumped above the Free Production Allowance must be replaced with State Water Project water bought or leased from MWA (Watermaster). The following tables (Table 4-A and Table 4-B) show the Free Production Allowance for the 10 and 5 year baselines, as well as the required imported SWP water that is above the Free Production Allowance. Combining the two tables will result in the total amount of water delivered to the distribution system for the service area water customers.

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source		Groundwater Free Production Allowance		
This water source is:				
<input checked="" 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	2001	3,058		3,058
Year 2	2002	3,058		3,058
Year 3	2003	2,867		2,867
Year 4	2004	2,676		2,676
Year 5	2005	2,485		2,485
Year 6	2006	2,294		2,294
Year 7	2007	2,294		2,294
Year 8	2008	2,294		2,294
Year 9	2009	2,294		2,294
Year 10	2010	2,294		2,294
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2006	2,294		2,294
Year 2	2007	2,294		2,294
Year 3	2008	2,294		2,294
Year 4	2009	2,294		2,294
Year 5	2010	2,294		2,294
2015 Compliance Year - Water into Distribution System				
2015		2,294		2,294
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES:				

The above table shows how much CSA 64 can pump due to the Free Production Allowance.

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Imported Water (Above FPA)		
This water source is:				
<input type="checkbox"/>		The supplier's own water source		
<input checked="" 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	2001	484		484
Year 2	2002	717		717
Year 3	2003	785		785
Year 4	2004	1109		1,109
Year 5	2005	1013		1,013
Year 6	2006	1440		1,440
Year 7	2007	1470		1,470
Year 8	2008	1182		1,182
Year 9	2009	1139		1,139
Year 10	2010	953		953
Year 11	0			0
Year 12	0			0
Year 13	0			0
Year 14	0			0
Year 15	0			0
5 Year Baseline - Water into Distribution System				
Year 1	2006	1440		1,440
Year 2	2007	1470		1,470
Year 3	2008	1182		1,182
Year 4	2009	1139		1,139
Year 5	2010	953		953
2015 Compliance Year - Water into Distribution System				
2015	172			172
* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document				
NOTES:				

The above table shows how much water CSA 64 must import to replace water that is pumped above the Free Production Allowance. The imported water is purchased through MWA, who receives the additional water from the SWP.

5.6 Baseline Daily Per Capita Water use

Utilizing the population information obtained from the DWR Population Tool and gross water use numbers presented in the previous sections, Daily Per Capita Water Use (GPCD) are calculated and presented in SB X7-7 Table 5 below. CSA 64's 10 year Baseline GPCD is 364, based upon the 10-year period from 2001 to 2010. CSA 64's 5 year Baseline GPCD is 331, based upon the 5-year period from 2006 to 2010. Based on the 10 and 5 year baselines, the 2015 compliance year GPCD is 238.

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	2001	-	3,542	
Year 2	2002	-	3,775	
Year 3	2003	-	3,652	
Year 4	2004	9,315	3,785	363
Year 5	2005	-	3,498	
Year 6	2006	9,639	3,734	346
Year 7	2007	6,474	3,764	519
Year 8	2008	9,399	3,476	330
Year 9	2009	9,524	3,433	322
Year 10	2010	9,543	3,247	304
<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	-	-	
10-15 Year Average Baseline GPCD				364
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2006	9,639	3,734	346
Year 2	2007	9,474	3,764	355
Year 3	2008	9,399	3,476	330
Year 4	2009	9,524	3,433	322
Year 5	2010	9,543	3,247	304
5 Year Average Baseline GPCD				331
2015 Compliance Year GPCD				
2015		9,239	2,466	238
NOTES:				

The above table is summarized in the following table. The 10-year baseline GPCD is 364, the 5-year GPCD is 331, and the 2015 Compliance Year GPCD is 238. It can be seen from the table that the Gallons per Capita per Day has decreased since the 10-year base period and is much lower for the 2015 compliance year.

SB X7-7 Table 6: Gallons per Capita per Day <i>Summary From Table SB X7-7 Table 5</i>	
10-15 Year Baseline GPCD	364
5 Year Baseline GPCD	331
2015 Compliance Year GPCD	238
NOTES:	

An overall reduction in the GPCD can be seen in the above tables. The GPCD has been reduced in recent years because of the drought conditions that currently affect the CSA 64 service area. The State has implemented conservation measures recently and those conservation measures could account for the compliance year (2015) GPCD values being lower than the 5 and 10 year baseline GPCD.

5.7 2015 and 2020 Targets

DWR has established four “Methods” for arriving at a 2020 GPCD target to comply with SB X7-7. CSA 64 has selected Method 1, to reduce its Base Daily Per Capita Water Use by 20 percent (see Table SB X7-7 Table 7). Method 1 results in 2020 target of 291 GPCD (See SB X 7-7 Table 7-A).

SB X7-7 Table 7: 2020 Target Method <i>Select Only One</i>		
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:		

Method 1 uses the 10 year baseline GPCD to determine the 2020 Target GPCD. Method 1 2020 Target GPCD can be found below.

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	2020 Target GPCD
364	291
NOTES:	

CSA 64 is already within compliance of the 20% reduction because currently the GPCD for 2015 is 238, which is already less than the 2020 Target GPCD. CSA 64 will continue to focus on the 20% reduction of the 10 year baseline to determine the 2020 Target GPCD.

SB X7-7 Table 7-F, below, confirms the minimum GPCD reduction for CSA 64's 2020 target.

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target ¹	Calculated 2020 Target ²	Confirmed 2020 Target
331	315	291	291
¹ Maximum 2020 Target is 95% of the 5 Year Baseline GPCD except for suppliers at or below 100 GPCD. ² 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.			
NOTES:			

Based on the current GPCD for 2015 being 238, the service area is on track to meet the 2020 Target GPCD of 291. The service area is not expected to increase in population dramatically and the current target of 291 GPCD for the year 2020 seems reasonable.

5.8 Compliance with 2015 Daily per Capita Water Use Target

CSA 64's actual 2015 Gross Water Use was 2,466 acre-feet and the population was 9,239 which was obtained from the DWR Population tool. The resulting compliance year 2015 per-capita water use is 238 GPCD. CSA 64's 2015 Interim Target GPCD is 327, so CSA 64 did achieve its Interim Target. See SB X7-7 Table 8 & 9 below. CSA 64 did not adjust the 2015 Gross Water Use.

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>	2015 Interim Target GPCD
291	364	327
NOTES:		

No adjustments were made in Table 9 because the Targeted Reduction for 2015 was achieved. The service area did not experience any extraordinary events such as a large fire during the compliance year of 2015. A Weather Normalization adjustment was not performed because the weather encountered in the service area is typical for the region. The service area experienced a normal weather year for the compliance year of 2015. Due to the Targeted Reduction being met for 2015, an Economic adjustment was not required.

SB X7-7 Table 9: 2015 Compliance								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Enter "0" if Adjustment Not Used			TOTAL Adjustments	Adjusted 2015 GPCD		
		Extraordinary Events	Weather Normalization	Economic Adjustment				
238	327	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	-	238	238	YES
NOTES:								

The 5 and 10 year baselines were established and by reviewing all the SB X7-7 Tables it has been determined that CSA 64 is currently meeting the GPCD reduction that is required. In 2015 the CSA 64 service area was able to reach the Interim Target GPCD. The 2020 Target GPCD is not much greater than the current (2015) GPCD. Therefore, the CSA 64 service area has achieved the 2015 interim target and is on track to achieve the 2020 GPCD target, which is a twenty (20) percent reduction from the 10 year baseline that was calculated. With the conservation measures in place, the CSA 64 service area should not have any problems in achieving the 2020 target GPCD.

Chapter 6 System Supplies

This chapter will describe and quantify the current and projected sources of water available to CSA 64. A description and quantification of potential recycled water uses and supply availability is also included in this chapter. CSA 64 has historically utilized groundwater as its sole source of water supply and it will continue to be the primary source of supply for the 2015 planning horizon. CSA 64 maintains a constant level of supply system improvements in order to replace its aging facilities and meet the growing demands of its service area. It recognizes that its demand for water may continue to grow even with state-mandated water conservation and that the groundwater basin has a limited capacity to provide long term high quality water. Therefore, CSA 64 relies on the Mojave Water Agency (MWA), as designated Watermaster, to monitor and enforce the regulations implemented by court proceedings.

A lawsuit filed by the City of Barstow in the early 1990's resulted in the entire Mojave River Basin being adjudicated, including the development of a basin wide water management plan prepared for the Mojave Water Agency. Under the court approved stipulated judgement, the shared free production allowance (safe yield) of each water producer was reduced over a four year period. Any production (pumping) of water above the "adjusted free production allowance" requires the producer to pay for replenishment water to the Mojave Area Basin Watermaster. In turn, replenishment water is purchased from the SWP by the Watermaster using MWA's 'Table A' allocation in the SWP. SWP water is considerably more expensive than local groundwater sources, requires additional treatment, and is an interruptible water supply source. SWP water is used as replenishment water for the depleted aquifer.

CSA 64, for its part, maintains an active water use reduction and conservation program. Senate Bill 7 (Water Conservation Act of 2009) now requires water wholesalers and retailers to define their baseline water demand and develop a water use reduction program to meet specified goals in order to achieve the mandate of the State of California to reduce its overall per-capita water use reduction goal of twenty (20) percent by 2020. Such mandated conservation has the same effect as a new water supply source that provides an equivalent amount of capacity for an agency's growing water demands. CSA 64's water conservation plan is discussed in detail in Chapter 8.

6.1 Purchased or Imported Water

Historically CSA 64 has relied solely on groundwater pumped from its own wells (described further in Section 6.2). CSA 64 has a Free Production Allowance (FPA) available to pump groundwater to use as a potable water source. Once CSA 64 pumps above the FPA, they must purchase water from MWA to offset what is pumped above the FPA. The purchase of water to offset over pumping the groundwater can be considered Replacement Water Obligations to the Mojave Basin Area Watermaster (Watermaster) under the Mojave Basin Area Judgment (Judgment). The adjudication is described in more detail in Section 6.2.2. The service area does not directly use the water that is purchased above the FPA. The purchased water is used to replenish the aquifer. The overall health of the aquifer is maintained because of the purchase of water above the FPA.

6.2 Groundwater

Groundwater has been the CSA 64's sole source of water supply, and it will continue to be the primary source of supply for the 2015 UWMP planning horizon. CSA 64 pumps groundwater from the Alto Subarea of the Mojave Basin Area as defined in the Judgment. The Mojave Water Agency is the appointed Watermaster for the basin and is responsible for monitoring its groundwater extractions, determining annual safe yields, and enforcing the rules and regulations of the Judgment for the fair and equitable distribution of its finite supplies. The following sections contain information derived from various sources describing the characteristics, management, water supplies, and conditions of the groundwater basin.

6.2.1 Mojave River Groundwater Basin Description

The overall basin overlies two hydrologic regions defined in DWR Bulletin 118-03. The Alto subbasin lies within the South Lahontan hydrologic region (Region 6). The vast majority of MWA's water demands are supplied by the Alto Subbasin.

The Mojave River Groundwater Basin encompasses approximately 1,400 square miles and has an estimated total water storage capacity of nearly five (5) million AF. According to MWA, the Mojave River does not flow perennially under present-day conditions except at the Narrows near Victorville, downstream from the Victorville municipal wastewater treatment plant, and near Afton Canyon. Within the basin groundwater movement occurs between its separate subbasins, as well as groundwater-surface water and groundwater-atmosphere interchanges. Groundwater recharge occurs predominantly by infiltration of water from the Mojave River, which accounts for approximately 80 percent of the total basin natural recharge. 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 enhance recharge with imported water. Over 90 percent 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.

Investigations by MWA, USGS, and others have resulted in 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. The Alto Subbasin of the Mojave Basin contains both the Floodplain Aquifer and the Regional Aquifer. The Floodplain Aquifer is composed of sand and gravel weathered from granitic rocks of the San Gabriel and San Bernardino Mountains and deposited in a fluvial depositional environment. These highly permeable sediments can yield large quantities of water to wells. The Floodplain Aquifer is directly recharged by infiltration of surface flows from the Mojave River during the winter rainy season. Recharge is greater near the mountain front where surface flows are more frequent due to runoff from the mountains.

The Regional Aquifer underlies and surrounds the Floodplain Aquifer with interconnected alluvial fan and basin fill deposits that drain toward the Mojave River. Permeable deposits from the ancestral Mojave River are present, but overall the aquifer is much less permeable than the

Floodplain Aquifer. The Regional Aquifer is generally recharged by groundwater movement from the Floodplain Aquifer to the Regional Aquifer, infiltration of runoff from the higher elevations of the San Gabriel and San Bernardino Mountains, and smaller amounts of runoff from local intermittent streams and washes.

Prior to recent population growth, most of the groundwater production occurred in the Floodplain Aquifer. Groundwater production was initially developed along the Mojave River in the early 1900's. In the mid 1950's, annual groundwater production had increased to about 190,000 AF, with most of the production still occurring along the river. By 1994, about half of the total basin production came from wells located away from the Mojave River in the Regional Aquifer. The increase in water production and redistribution of pumping in the basin have significantly influenced the interaction between the Floodplain and Regional Aquifers. Prior to development in the area, groundwater flowed primarily from the Regional Aquifer into the Floodplain Aquifer. However, vertical groundwater gradients have been reversed in recent years, and downward flow from the Floodplain Aquifer is currently the primary recharge mechanism for the Regional Aquifer.

The Alto Subbasin water levels near the Mojave River are relatively stable, exhibiting seasonal fluctuations with rising levels in winter and declining levels in summer. It is expected that under current pumping conditions and long-term average flows in the river, water levels in the Floodplain Aquifer will generally remain stable. The FPA determined for each water provider maintains the water levels of the aquifer. Water levels in the western portion of Alto Subbasin in the Regional Aquifer exhibit declines consistent with heavy pumping and limited local recharge. Water levels in the eastern portion of Alto Subbasin indicate trends although to a lesser extent, most likely due to limited pumping in the Regional Aquifer east of the river and possibly higher localized septic return flow due to lack of sewers in some areas. Continued pumping in depleted areas of the Regional Aquifer may result in long-term local negative impacts such as declining yields and reduced water quality. As the availability of water is decreased, the access to clean potable water is also reduced. As the aquifer levels decrease, the poor water quality is concentrated and becomes the only available supply for the service area. Keeping adequate groundwater levels will eliminate the concentrated poor quality of water. As a whole, the Alto Subbasin appears to be in regional balance although portions of the subbasin have shown continued historical declines in water levels. Localized declines in water levels may be minimized by a redistribution of groundwater production and return flows. The idea is to move the return water flows to where the pumps are located throughout the service area, or, move additional pumps to where the return water flow is located. The health of the aquifer will not be reduced if the amount of water pumped is recharged by return flows.

In the Mojave Basin, Base Annual Production (BAP) rights were assigned by the Mojave Basin Area Judgement to each producer using ten (10) AFY or more, based on historical production. BAP is defined as the producer's highest annual use verified for the five-year base period from 1986-1990. Parties to the Judgement are assigned a variable Free Production Allowance (FPA) by the Watermaster, which is a percentage of BAP. The allocated FPA represents each producer's share of the water supply available. This FPA is reduced or "ramped down" over time until total FPA comes into balance with available supplies. MWA, acting as the Watermaster for the basin, determines the FPA for the producers and maintains the health of the aquifer.

Water levels remain stable in most areas currently because verified production is less than the available supply. Based on these recommendations, agricultural producers in Alto have an established FPA that is currently 80 percent of its BAP for the 2010-2011 water year. Alto's FPA for municipal and industrial use was set at 65 percent of its BAP.

MWA, as Watermaster of the Mojave Basin and specifically the Alto Subbasin, determines the Production Safe Yield (PSY) of the subbasin each year. The PSY is assumed to equal the average net natural water supply plus the expected return flow from the previous year's water production. The Judgement requires that, in the event the FPA exceeds the estimated PSY by five percent or more of BAP, the Watermaster recommend a reduction in FPA equal to, but not more than, a full five percent of the aggregate subarea BAP. Any water user that pumps more than their FPA is any year is required to buy "Replacement Water" equal to the amount of production in excess of FPA. Replacement obligations can be satisfied either by paying the Mojave Basin Area Watermaster to purchase imported water from MWA or by a temporary transfer of unused FPA capacity from another Alto Subbasin producer. Producer's that exceed the FPA can either buy/lease the water from MWA through the SWP, or the producer can purchase water from a neighboring water provider that has excess FPA that could be transferred to MWA as replacement water.

The following figures show the Mojave Groundwater Basin Subareas and the Mojave Groundwater Basin Aquifers.

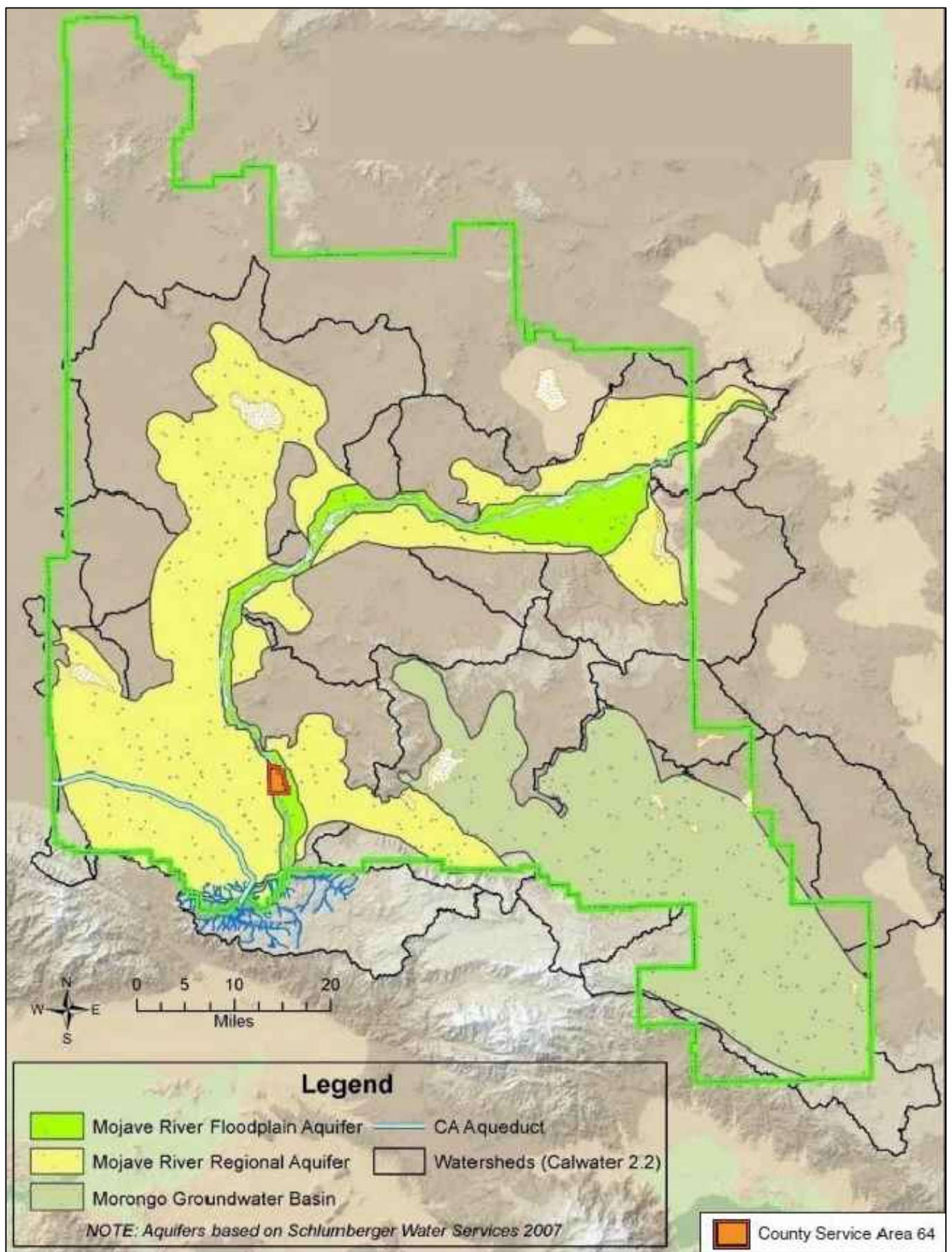


COUNTY SERVICE AREA 64: SPRING VALLEY LAKE
MOJAVE GROUNDWATER BASIN SUBAREAS

FIGURE 6-1



NOT TO SCALE



NOT TO SCALE

COUNTY SERVICE AREA 64: SPRING VALLEY LAKE
MOJAVE GROUNDWATER BASIN AQUIFERS

FIGURE 6-2

6.2.2 Groundwater Management

The California State Legislature passed Assembly Bill 3030 (AB 3030) during the 1992 legislative session allowing local agencies to develop Groundwater Management Plans (GWMPs). The legislation declares that groundwater is a valuable resource that should be carefully managed to ensure its safe production and quality. The legislation also encourages local agencies to work cooperatively to manage groundwater resources within their jurisdiction. Subsequent legislation was passed (SB 1938, 2002), which made changes and additions to sections of the Water Code created by AB 3030. MWA's 2014 Regional Water Management Plan (RWMP, adopted 2014) includes the GWMP for MWA as it contains all the relevant components related to Groundwater Management Plans in California Water Code Sections 10750-10753.10., as well as the components recommended by DWR in California's 2003 Groundwater Bulletin 118.

The RWMP complements and formalizes a number of existing water supply and water resource planning and management activities for MWA's service area, including the Alto Subbasin area which encompasses CSA 64 service area. As part of the RWMP, the following Basin Management Objectives (BMOs) were established to plan water supplies through 2040:

1. Balance future water demands with available supplies recognizing the need to:
 - Stabilize the groundwater basin storage balance over long-term hydrologic cycles
 - Protect and restore riparian habitat areas as identified in the Mojave Basin Area Judgement and the Department of Fish and Game Habitat Water Supply Management Plan
 - Limit the potential for well dewatering, land subsidence, and migration of poor quality water
 - Maintain a sustainable water supply through extended drought periods
 - Select projects with the highest likelihood of being implemented
2. Maximize the overall beneficial use of water throughout MWA by:
 - Supplying water in quantity and quality suitable to the various beneficial uses
 - Addressing issues throughout the MWA service area recognizing the interconnection and interaction between different areas
 - Distributing benefits that can be provided by MWA in an equitable and fair manner
 - Ensuring that costs incurred to meet beneficial uses provide the greatest potential return to beneficiaries of the project(s)
 - Avoiding redirected impacts

Balancing future water demands with available supplies will increase water supply reliability by preventing continued overdraft of the groundwater basin. With groundwater storage stabilized, there will be groundwater available during surface water supply shortages and delivery interruptions. The SWP water is interruptible and cannot be relied upon as a continued potable

water supply source. With a balanced basin, groundwater elevations will be relatively stable. This will reduce potential for land subsidence and associated aquifer compaction. If aquifer compaction were to occur, the capacity of the aquifer would be reduced and the replacement water obligation would no longer be beneficial because the replacement water could no longer be stored in the compacted aquifer.

The RWMP/GWMP also identifies several water supply projects and management actions to provide a means to achieve the BMOs. Management actions can be grouped into the following seven major elements:

1. Monitoring regional groundwater quantity and quality
2. Improve characterization of the basin
3. Continue long-term planning
4. Groundwater protection
5. Construction and implementation
6. Financing
7. Public participation

Included in the RWMP/GWMP is the assumption that the Mojave Basin adjudication will continue to be implemented. The MWA Board acts as Watermaster for administration of the Mojave Basin Area Judgement. In the Mojave Basin Area, the Mojave Basin Area Judgment requires that annual water production records be collected and verified for producers exceeding ten (10) AF of production within each of the five Mojave Basin Area subareas, including the Alto Subbasin. As the current Court-appointed Watermaster, much of the monitoring and studies in the Mojave Basin area is conducted by MWA, based on the monitoring requirements described in the 1998 Judgement. Data collected are reported in the Mojave Basin Area Watermaster Annual Reports to satisfy the mandates of the monitoring requirements. The Management Actions identified neither supersede nor conflict with the Mojave Basin Area Judgement. All provisions of the Judgement are integral parts of the foundation of the GWMP.

In addition to conducting regional groundwater management, MWA works closely with the U.S. Geological Survey (USGS) in a cooperative water resources program by which the USGS assists MWA with monitoring activities in their service area. MWA currently maintains a monitoring network of approximately 900 monitoring wells for regular measurements of water levels. Many of these wells are also sampled periodically for water quality. Using these data, MWA tracks water level trends and fluctuations throughout the service area.

Contaminants that are currently being monitored within the Alto Subbasin by the MWA include Arsenic, Nitrates, Iron, Manganese, Chromium VI, and Total Dissolved Solids (TDS). Measurements in excess of drinking water standards have been found for many of these constituents in the Alto Subbasin. Ongoing water quality monitoring allows identification of more sensitive areas. Groundwater pumping in these areas will have to be avoided, treated, or blended.

MWA is also monitoring the accumulation of salt in their groundwater basins. Because the Mojave River Basin is a closed basin, salts concentrated in the locally-generated wastewater, salts contained in the imported reclaimed wastewater, and salts in the SWP supplies have few to no natural outlets from the basin. Although SWP supply introduces salts into the system, the concentrations of key salt constituents are often less than ambient concentrations, resulting in some improvements in local water quality. The blending of groundwater with SWP water achieves an overall lower salt concentration because the SWP water contains less salt than what is currently found in the groundwater in some areas.

From 2005-2009, an average of about 4,800 AF of imported wastewater was discharged into the Mojave Basin from outside its boundary. In 2010, approximately 49,680 AF of SWP water was imported. By 2020, MWA is planning to increase its SWP utilization to 53,880 AFY. In an effort to understand potential long-term water quality changes that may occur in the basin over time due to the long-term effects of wastewater and importation of SWP water into the MWA service area, the Lahontan Regional Water Quality Control Board (RWQCB) and the MWA developed a salt balance model for the MWA service area. The model was finalized in 2007 and generally showed that the importation of SWP water mitigated the long-term effects of salt loading (TDS increases) primarily caused by population increases and the associated larger volumes of wastewater entering the Mojave Basin and its subbasins. The concentrated salts found in the groundwater are diluted with the SWP water.

Over the past several years, MWA has made efforts to greatly increase the understanding of the water quantity and quality of the groundwater basins that lie within its service area. MWA currently maintains a monitoring network of approximately 900 monitoring wells that record water levels on a regular basis. Many monitoring wells in the MWA monitoring network are sampled to analyze water quality. The monitoring wells track the levels of groundwater found in the aquifer and the quality of said groundwater is also recorded. The information from the monitoring wells gives a good idea about the overall health of the aquifer. If the groundwater levels decrease in an area the potential is for groundwater to decrease in quality due to the groundwater being concentrated.

6.2.3 Overdraft Conditions

CSA 64 is entirely within an adjudicated basin. Therefore, this section does not apply. The groundwater aquifer will not be overdrafted because each producer is allowed a FPA, and if the producer pumps more than their FPA, the producer must then purchase water to offset what is pumped above the FPA. The aquifer is continually being replenished with imported water and an overdraft will not occur.

6.2.4 Historical Groundwater Pumping

Groundwater pumping by CSA 64 ranges from 2,363 AF (2015) to 3,145 (2012) over the past five years from 2011 to 2015. Historical groundwater pumping volumes by CSA 64 for the last five (5) years is summarized in Table 6-1. As described in Section 6.2.2, the adjudicated basin is managed in such a way that producer's FPA are set to an amount within five percent of the PSY of the basin. Any water provider that pumps more than their FPA in any year incurs a "Replacement Water Obligation" equal to the amount of production in excess of its FPA. Replacement

Obligations paid to the Watermaster are used to purchase imported SWP water to recharge the groundwater basin and offset the water that is pumped within the basin. Water levels in the basin have generally remained stable because of the implementation of the physical solution contained in the Judgement (Appendix G).

Table 6-1 Retail: Groundwater Volume Pumped						
<input type="checkbox"/>	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type <i>Drop Down List</i> <i>May use each category multiple times</i>	Location or Basin Name	2011	2012	2013	2014	2015
<i>Add additional rows as needed</i>						
Alluvial Basin	Alto Subbasin	3,020	3,145	3,138	2,947	2,363
TOTAL		3,020	3,145	3,138	2,947	2,363
NOTES: Groundwater pumping information obtained from the Public Water System Statistics completed by CSA 64 staff and submitted to DWR.						

6.2.5 Groundwater Banking

MWA is currently developing ‘conjunctive use’ and groundwater banking projects to improve water supply reliability for its retail agencies, including CSA 64. The conjunctive use MWA is developing is based on storing surface water supplies in a local groundwater basin during times of surplus for use during dry periods when surface water supplies would likely be reduced.

MWA’s SWP supply on average is still greater than demand in its service area. MWA is able to store this water for future use when SWP supplies are not available. This allows MWA to take advantage of wet year supplies by taking it through SWP system and discharging it into the abundant Mojave Basin groundwater storage capacity. This concept is used in the planned water supply projects, including the Regional Recharge and Recovery Project, currently under construction within the Alto Subbasin.

In 2006, MWA adopted a water banking policy to guide the Agency in determining where water will be “banked”. Banking targets were established for each groundwater basin where banking may occur under this Policy to prioritize where available water will be banked. The targets are generally based on the calculation of three times the non-agricultural water demand (groundwater production) within the Subarea. The Alto Subbasin target is 261,000 AF. Currently (as of 2015) MWA has stored excess SWP water in the Alto subbasin of over 87,000 AF.

The Regional Recharge and Recovery Project is a conjunctive use project currently under construction that will store SWP water in a local aquifer for later recovery and distribution of the water to local retail water purveyors. The Project is part of a comprehensive solution developed by MWA and the region’s stakeholders to ensure a sustainable water supply for the region. It is an integral part of the Regional Water Management portfolio identified in MWA’s 2014 RWMP.

The Regional Recharge and Recovery Project will provide a new source of supply for major water providers in the Mojave Basin and offset their need to continue excessive pumping within the declining regional aquifer system. Water providers that benefit from the Project will include CSA 64, as well as other named MWA member agencies within the Alto Subbasin.

6.2.6 CSA 64 Groundwater Wells

The current water system operates five (5) wells with a total discharge capacity of 5,560 gallons per minute (8,952 AFY, operating full time). Each well will require downtime for maintenance. For the purpose of establishing annual supply, it is assumed that each well could be down up to 50 percent of the time. This would equate to a reliable supply of 4,476 AFY. The table below summarizes the total (100 percent utilization) and reliable (50 percent utilization) of the five (5) CSA 64 water supply wells.

Existing CSA 64 Groundwater Capacity

Well Number	Current, gpm [1]	Current AFY	
		@ 100 % Utilization	@ 50% Utilization
W-1	350	564	282
W-3	400	644	322
W-4	1,755	2,826	1,413
W-5	1,130	1,819	910
W-6	1,925	3,099	1,550
Total	5,560	8,952	4,476

[1] Based on current H2ONet Hydraulic Model

A comparison of well capacities to current and projected water requirements for CSA 64 is shown in the following table and indicates sufficient well pumping capacity exists to supply current and projected average water needs. CSA 64 is in the process of drilling and equipping a new source well with the capacity of 1,800 gpm that would increase pumping capacity to an adequate level of redundancy during maximum day demands.

Projected Water Demand as Percent of Total Well Production

Year	Water Requirement (AFY)	Water Requirements as Percent of Well Capacity [1]
2015	2,466	55%
2020	2,787	62%
2025	3,149	70%
2030	3,558	79%
2035	4,021	90%
2040	4,543	101%

[1] Well production capacity taken for wells operating at 50% utilization.

Based on the current permitted wells, the future water requirement in 2040 would be higher than what 50% utilization well pump capacity could deliver. If the well pumps were to be run at 100% utilization, the future water requirement for 2040 would be achieved. With the addition

of the new well, the available well production from all of the groundwater wells will be adequate for the next twenty five (25) years.

6.3 Surface Water

The CSA 64 service area contains three surface lakes. The Spring Valley Lake is situated in the middle of the service area and is used for recreational purposes. Two (2) other surface lakes are located in the northern portion of the service area. Horseshoe Lake and Pelican Lake are smaller surface lakes and are not used as a potable water source.

CSA 64 does not directly divert or use surface water. Volumes of water projected for delivery are included in Table 6-9. Surface water is not used as a potable water source.

6.4 Stormwater

The Mojave River, which is the approximate service area boundary to the east, contains stormwater flows when there is enough precipitation from storms to generate runoff. During periods of high runoff, the Mojave River will carry the runoff through the service area. A small portion of this water will be infiltrated to recharge the groundwater aquifer.

A small, unreportable amount of runoff is returned to the aquifer. CSA 64 does not have a stormwater recovery system in place and does not use stormwater as a potable water source. The service relies on the natural Mojave River to move the runoff through the service area and the service area does not contain any runoff spreading basins to collect more runoff via infiltration.

6.5 Wastewater and Recycled Water

Currently, wastewater within the service boundary of CSA 64 is collected via the collector sewer system owned and operated by CSA 64. The collector system includes three sewage lift stations. Total wastewater flow is measured through a single metering station as it discharges to regional interceptor sewer (CSA 64 Outfall) and Regional Wastewater Treatment Plant owned and operated by the Victor Valley Wastewater Reclamation Authority (VWWRA).

The VWWRA serves portions of Victorville, Hesperia, Apple Valley, and CSA 64. VWWRA has been discussing plans to construct a subregional water reclamation plant near CSA 64 which would make available fully-compliant Title 22 water for all non-potable water uses. Currently the Hesperia Subregional Water Recycling Plant and the Apple Valley Subregional Water Recycling Plant are being constructed to collect wastewater flows from those communities. The subregional plants are expected to complete construction sometime in 2017. At this time, no projects have been planned for the CSA 64 service area. The Apple Valley and Hesperia Subregional projects are located a large distance from the CSA 64 service area and therefore the recycled water delivered from these projects will more than likely be delivered to the surrounding city and not transferred to the CSA 64 service area. The following table projects the average Regional Plant flows and the estimated average contributing flows from CSA 64.

Projected Wastewater Flows at VVWRA Plant

		2015	2020	2025	2030	2035	2040
VVWRA Flows [1]	MGD	18	20	20	20	20	20
	AFY	20,163	22,404	22,404	22,404	22,404	22,404
CSA 64 Contribution [2]	MGD	2	2	2	2	3	3
	AFY	1,850	2,090	2,362	2,669	3,016	3,407

[1] Source: MWA 2015 UWMP, Table 4-4

[2] Assumes wastewater return flows equals 75% of CSA 64 water demands

VVWRA conveys wastewater using 41.5 miles of interceptor sewer and two pump stations to its Regional Wastewater Treatment Plant (Regional Plant). The Regional Plant is located adjacent to the Southern California Logistics Airport (SCLA) approximately nine miles north of CSA 64. Approximately 12.6 MGD was treated at the VVWRA facility in 2009, which has a total capacity of 18.0 MGD. The two additional Subregional facilities will also contribute approximately 1.0 MGD in return wastewater flows. Processes used at the Plant include screening, grit removal, primary clarification, biological oxidation of wastes with complete nitrification and partial denitrification, secondary clarification, coagulation, flocculation, filtration, and disinfection. Dissolved air floatation thickening and anaerobic digestion stabilizes biosolids that are then dewatered and dried prior to disposal via direct agricultural land application or by mixing with finished compost for agricultural markets. The treated wastewater effluent is discharged directly into the Mojave River channel downstream from the Lower Narrows or percolated into ponds in the Floodplain Aquifer.

In 2002, VVWRA submitted an application to the Lahontan Regional Water Quality Control Board (Regional Board) for a master water recycling permit in order to use up to 1,680 acre-feet per year (AFY) of recycled water for irrigation of the Westwinds Golf Course at the SCLA. At the time, the Golf Course utilized potable groundwater from the underlying Mojave Basin aquifer.

The California Department of Fish and Game (DFG) objected to the use of recycled water at the golf course as it would reduce stream flow, decrease the amount of flow necessary to maintain riparian habitat in the Alto Transition Zone and decrease the amount of water that could be extracted from the overdrafted Mojave groundwater basin. However, the Regional Board approved order R6V-2003-028 (June 2003), which allowed for specific recycled water uses for VVWRA, Victorville Water District, and Westwinds Golf Course.

In order to assure the viability of the riparian area in the Transition Zone, the DFG and VVWRA entered into a Memorandum of Understanding (MOU) regarding VVWRA current and future discharges into the Mojave River Transition Zone. The general terms of the MOU are that DFG will not appeal or challenge the Regional Board's Order. In turn, VVWRA will continue to discharge 9,000 AFY from the Regional Plant and will also discharge not less than 20 percent of the amount of treated wastewater resulting from any future increases in amount of daily influent wastewater flow to the Regional Plant.

The Regional Wastewater Treatment Plant is currently capable of treating a portion of the flow to a tertiary level and the remaining flow to a secondary level for percolation. A majority of the tertiary treated wastewater is discharged into the Mojave River Basin and a smaller amount is

currently used to irrigate landscaping at the Regional Plant site and the nearby Westwinds Golf Course. The capacity of the Regional Plant was increased to its current 18.0 MGD in 2009. The total capacity of the VVWRA will become 20.0 MGD once the Apple Valley and Hesperia Subregional Water Treatment Plants are completed. Also, the Regional Board order R6V-2008-004 along with the National Pollutant Discharge Elimination System (NPDES) Permit No. CA0102822 allows the facility to discharge up to 14.0 MGD of tertiary-treated effluent to the Mojave River.

CSA 64 currently does not use recycled water as a potable water source. CSA 64 does not have the recycled water facilities available to deliver recycled water to the service area. CSA 64 needs to install recycled water pipeline facilities from the Subregional plants, VVWRA, or possibly build their own Subregional plant to have access to recycled water flows. Based on the Public Water System Statistics collected by CSA 64 staff, the service area has no recycled water connections and has distributed no recycled water for the year of 2015.

CSA 64 has a sewer/wastewater collection system within its service area boundary. The amount of wastewater that was collected from the service area was assumed to be 75% of the total water delivered to the service area. The wastewater is collected by CSA 64, and then the entire wastewater flow that is collected from the service area is delivered to the VVWRA plant that is located to the north of the service area. The VVWRA then uses the treated recycled water to recharge the underlying groundwater aquifer. The following table was filled out due to the fact that the service area has a wastewater collection system within its boundary.

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015						
<input type="checkbox"/> There is no wastewater collection system. The supplier will not complete the table below.						
Percentage of 2015 service area covered by wastewater collection system <i>(optional)</i>						
Percentage of 2015 service area population covered by wastewater collection system <i>(optional)</i>						
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? <i>Drop Down List</i>	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? <i>Drop Down List</i>	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i> <i>Drop Down List</i>
<i>Add additional rows as needed</i>						
CSA 64	Metered	1,850	Victor Valley Wastewater Reclamation Authority	VVWRA	No	
Total Wastewater Collected from Service Area in 2015:		1,850				
NOTES: Assume that 75% of water delivered to the service area in 2015 was collected and delivered to VVWRA.						

The CSA 64 service area does not contain any water/wastewater treatment facilities. A sewer collection system collects all the wastewater from the customers that do not have septic systems. Septic systems have the potential to return wastewater to the aquifer once it is treated as it passes through the layers of soil until it reaches the groundwater aquifer. Because no wastewater is treated or disposed within the service area boundary in 2015, the following table was not completed.

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015										
<input checked="" type="checkbox"/>		No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.								
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional)	Method of Disposal <i>Drop down list</i>	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level <i>Drop down list</i>	2015 volumes			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
<i>Add additional rows as needed</i>										
Total							0	0	0	0
NOTES: The UWMP service area does not contain any water treatment facilities within its boundary. All the collected wastewater is pumped, using a sewer lift station, to the VVWRA water treatment plant that is located to the north of the CSA 64 service area.										

Based on the Public Water System Statistics that was collected by CSA 64 staff, it has been determined that currently the service area does not contain any recycled water connections. Without any connections, recycled water cannot be delivered to the service area. No amount of recycled water was delivered to the CSA 64 service area in the year 2015. Therefore, for CSA 64 to be able to use recycled water within its service area boundary, additional recycled water facilities, such as pipelines and metered connections, will need to be constructed within the service area boundary. The following table was not filled out because CSA 64 does not currently use any recycled water, and using recycled water is not planned for the near future.

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area								
<input checked="" type="checkbox"/> Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.								
Name of Agency Producing (Treating) the Recycled Water:		VWVRA						
Name of Agency Operating the Recycled Water Distribution System:		VWVRA						
Supplemental Water Added in 2015								
Source of 2015 Supplemental Water								
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment <i>Drop down list</i>	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation								
Landscape irrigation (excludes golf courses)								
Golf course irrigation								
Commercial use								
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other (Provide General Description)								
Total:			0	0	0	0	0	0
*IPR - Indirect Potable Reuse								
NOTES: Reviewing the data provided by CSA 64 staff in the Public Water System Statistics, the service area does not contain any recycled water connections and has not received any amount of recycled water and therefore, does not rely on recycled water for any potable water reuse. Recycled water might be an option in the future if the facilities are constructed to deliver treated wastewater to the service area.								

Based on the Public Water System Statistics for CSA 64 that was collected for the years 2010 and 2015, it was determined that CSA 64 did not have any recycled water metered connections and that CSA 64 did not receive any recycled water during those years. Based on the lack of recycled water, the following table was not filled out.

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual			
<input checked="" type="checkbox"/>		Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.	
Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation			
Landscape irrigation (excludes golf courses)			
Golf course irrigation			
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	Type of Use		
Total		0	0
NOTES: CSA 64 did not use recycled water in 2010 or 2015 within the service area boundary. Recycled water delivery facilities will need to be constructed in the future for the CSA 64 service area to have access to recycled water.			

6.6 Actions to Encourage and Optimize Future Recycled Water Use

VVWRA is currently constructing subregional wastewater treatment plants in the town of Apple Valley, and the City of Hesperia. These smaller plants will recycle water for local landscape irrigation near the site of treatment. In turn, this will reduce the treatment demand on the Regional Plant. Moreover, the Hesperia and South Apple Valley interceptors are reaching capacity and the subregional plants will provide a long-term solution for extending the interceptor capacities. Constructing subregional treatment plants to capture and treat wastewater in Hesperia and Apple Valley would free up capacity for future flow from CSA 64 and other areas within Victorville. The subregional plants will likely require the same level of regulatory requirements regarding nitrogen as the Regional Plant. The estimated completion date of the Hesperia and Apple Valley subregional plants is mid-2017.

The conceptual details of the subregional plants and related facilities are as follows:

- **Town of Apple Valley** – 1.0 MGD facility located in the Town, adjacent to the Otoe Road Pump Station in the southwest corner of Brewster Park. The facility will initially have a capacity to treat 1.0 MGD, expandable to 4.0 MGD, providing recycled water to the public parks.
- **City of Hesperia** – 1.0 MGD facility located in the City, on city-owned property northwest of the intersection of Interstate 15 and Main Street. The facility will initially have a capacity to treat 1.0 MGD, expandable to 4.0 MGD, providing recycled water to the residential communities and commercial businesses along the I-15 corridor.

- **City of Hesperia** – 2.0 MGD pump station and 3-mile force main located in the City beginning near the intersection of Mauna Loa Street and Maple Avenue.

CSA 64 has the potential to expand recycled water use once additional recycled water distribution facilities have been constructed. Currently CSA 64 does not have any plans to expand recycled water use within the service area. The service area contains a large golf course that could be irrigated with recycled water in the future if the recycled water facilities are constructed to deliver water to the golf course. Until the need for recycled water outweighs the cost to construct the required facilities, CSA 64 will continue to rely on potable groundwater for all water needs, including irrigation. The following table was not filled out because CSA 64 does not plan to expand recycled water use in the future.

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
<input checked="" type="checkbox"/>	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
<i>Add additional rows as needed</i>			
Total			0
NOTES: CSA 64 does not have any plans to construct a subregional wastewater treatment facility within its boundary.			

6.7 Desalinated Water Options

The California UWMP Act requires a discussion of potential opportunities for use of desalinated water (Water Code Section 10631[i]). CSA 64 has evaluated opportunities for using desalinated water in future supply options. However, at this time, none of the opportunities are practical or economically feasible for CSA 64, and CSA 64 has no current plans to pursue desalinated water supplies. Therefore, desalinated supplies are not included in the supply summaries in this Plan. However, should a future opportunity emerge for CSA 64 to consider development of desalination, then the potential future supply opportunities are described in the following section, including opportunities for desalination of brackish water, groundwater, and seawater.

The groundwater supplies in CSA 64 service area or the larger High Desert region are not considered brackish in nature, and desalination is not required. There are brackish supplies near the dry lakes but it is not practical to pump, treat and potentially induce migration of better

quality water to the dry lake areas and potentially cause subsidence. However, CSA 64 and MWA could partner with an agency in another part of the state (such as another SWP contractor) and provide financial assistance in construction of other regional groundwater desalination facilities in exchange for SWP or other imported water supplies. The desalinated water would be supplied to users in communities near the desalination plant, and a similar amount of SWP supplies would be exchanged and allocated to CSA 64/MWA from the SWP contractor. A list summarizing the groundwater desalination plans of other SWP contractors is not available; however, CSA 64 would begin this planning effort in coordination with MWA should the need arise.

Because CSA 64 is not in a coastal area, it is neither practical nor economically feasible for CSA 64 to implement a seawater desalination program. However, similar to the brackish water and groundwater desalination opportunities described above, CSA 64 could provide financial assistance to other retailers and/or team with MWA to provide financial assistance in the construction of other purveyor's seawater desalination facilities in exchange for SWP supplies.

6.8 Exchanges or Transfers

Since the drought of 1987-1992, the concept of water transfers has evolved into a viable supplemental source to improve supply reliability. Various laws have been enacted in recent years to help define parameters for water transfers and set up a variety of approaches through which water or water rights can be transferred among individuals or agencies.

Opportunities exist for SWP contracting agencies, such as MWA, to receive transfer capacities from agricultural uses in the Central Valley along the SWP and the Central Valley Project (CVP). Such voluntary transfers to urban areas, including those within MWA, can involve water sales, conjunctive use and groundwater substitution, and water sharing. The costs of a water transfer would vary depending on the type, term, and location of transfer. The most likely voluntary water transfer programs would probably involve the Sacramento or southern San Joaquin Valley areas.

Alternative water sources include transfer and exchange opportunities, groundwater banking, and recycled water use. MWA is the lead agency which explores these alternative sources. Therefore, descriptions outlining their objective and benefit to CSA 64 are summarized from MWA's 2015 UWMP.

The MWA operates under their 2014 RWMP which defines MWA's overall water management objectives for the period of 2014 through 2035 and identifies a variety of potential projects and programs that could balance future water demands with available supplies and maximize the beneficial use of water throughout the MWA's service area. The RWMP projected that groundwater overdraft, combined with expected growth and associated increasing demand for water, were projected to result in a substantial groundwater recharge requirement by 2020.

The RWMP notes two fundamental actions that could be taken to address groundwater overdraft and future growth/water demand: (1) Supply enhancement projects, either involving groundwater recharge or an increase in groundwater efficiency; and (2) Management actions involving conservation, storage agreements, and water transfers/water banking. The supply enhancement projects have the potential to address the key management issues related to

overdraft of groundwater basins, localized water quality issues, and future growth/water demand. These projects are being planned to supplement the other groundwater recharge programs and facilities operated by MWA throughout their service area.

6.8.1 Exchanges

CSA 64 is not involved with any exchanges at this time. However, on behalf of the region, MWA has participated in a number of exchanges with other SWP contractors. Typically, these exchanges have involved MWA providing water to an agency during a dry year and the exchanging agency returns a like or greater amount of water during a wet year. MWA has also participated in exchanges whereby SWP contractors bank “wet year” water within MWA’s groundwater banking program in exchange for dry year SWP supplies from MWA.

6.8.2 Transfers

Voluntary water transfer programs are an opportunity available to CSA 64 to increase water supplies. Since the drought of 1987-1992, the concept of water transfer has evolved into a viable supplemental source to improve supply reliability. The initial concept for water transfers was codified into law in 1986 when the California Legislature adopted the “Katz” Law (CWC Sections 1810-1814) and the Costa-Isenberg Water Transfer Law of 1986 (CWC Sections 470, 475, 480-483). These laws help define parameters for water transfers and set up a variety of approaches through which water or water rights can be transferred among individuals or agencies.

According to the California Water Plan Update 2009, up to 27 MAF per year of water are delivered for agricultural use every year. Over half of this water use is in the Central Valley, and much of it is delivered by, or adjacent to, SWP and Central Valley Project (CVP) conveyance facilities. This proximity to existing water conveyance facilities could allow for the voluntary transfer of water to many urban areas, including CSA 64, via the MWA and imported SWP. Such water transfers can involve water sales, conjunctive use and groundwater substitution, and water sharing which usually occur as a form of spot, option, or core transfers agreement. The costs of a water transfer would vary depending on the type, term, and location of the transfer. The most likely voluntary water transfer programs would probably involve the Sacramento or southern San Joaquin Valley areas.

One of the most important aspects of any resource planning process is flexibility. A flexible strategy minimizes unnecessary or redundant investments (or stranded costs). The voluntary purchase of water between willing sellers and buyers can be an effective means of achieving flexibility. However, not all water transfers have the same effectiveness in meeting resource needs. Through the resource planning process and ultimate implementation, several different types of water transfers could be undertaken.

6.8.3 Emergency Interties

Emergency interties are addressed in Chapter 7, Water Supply Reliability.

6.9 Future Water Projects

CSA 64 has no future water projects planned. Table 6-7 was not filled out because no future water projects have been planned for the service area.

Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
<input checked="" type="checkbox"/>	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
<input type="checkbox"/>	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type <i>Drop Down List</i>	Expected Increase in Water Supply to Agency <i>This may be a range</i>
	<i>Drop Down List (y/n)</i>	<i>If Yes, Agency Name</i>				
<i>Add additional rows as needed</i>						
NOTES: CSA 64 service area does not contain enough available open space to construct future water supply projects within the service boundary. The potential water supply programs that could be used to increase available supply have not been discussed in detail.						

6.10 Summary of Existing and Planned Sources of Water

In 2015 all of CSA 64's water supplies were delivered from local groundwater supplies from the Alto Subbasin. The source of the supply is described in more detail in Section 6.2. The actual volume of water pumped from groundwater was above the Free Production Allowance and the service area was required to purchase replacement water from MWA or another public agency or individual water rights holder with unused free production allowance.

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
<i>Drop down list</i> <i>May use each category multiple times.</i> <i>These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		Actual Volume	Water Quality <i>Drop Down List</i>	Total Right or Safe Yield <i>(optional)</i>
<i>Add additional rows as needed</i>				
Groundwater	Alto Subbasin	2,466	Drinking Water	2,294
Total		2,466		2,294
NOTES: The Free Production Allowance (FPA) for the year of 2015 was 2,294. The actual volume pumped was above the FPA, and CSA 64 was required to purchase the difference in water from the Mojave Water Agency, who then purchase the water from the State Water Project water.				

The water demand projections are derived from MWA’s regional projections and are quantified in Table 6-9. Each of the water supplies listed in Tables 6-9 described in detail in the previous sections. The “Groundwater” supply (water extracted from the Alto Subbasin) is detailed in Section 6.2. The “Purchased or Imported” supply (water purchased from MWA that is above CSA 64 FPA) is detailed in Section 6.1. CSA 64 does not currently have any recycled water connections and did not receive, and does not plan to receive recycled water in the future as described in Section 6.5.

Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply Report To the Extent Practicable									
<i>Drop down list</i> <i>May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool</i>		2020		2025		2030		2035		2040 (opt)	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
		<i>Add additional rows as needed</i>									
Groundwater	Alto Subbasin	2,787		3,149		3,558		4,021		4,543	
Total		2,787	0	3,149	0	3,558	0	4,021	0	4,543	0
NOTES:											

Table 6-9 shows the projected water supply for the CSA 64 service area. The current and future water supply will be obtained from groundwater, and the service area will not rely on recycled or imported water for direct potable use. The recycled water and imported water that the service area will receive will be used to replenish the groundwater aquifer because of pumping above the FPA.

Chapter 7 Water Supply Reliability Assessment

The UWMP Act (Act) requires urban water suppliers to assess water supply reliability by comparing total projected water use with the expected water supply over the next twenty-five years in five-year increments. The Act also requires an assessment for a single dry year and multiple dry years. This chapter presents the reliability assessment for CSA 64 water service area. This Plan helps CSA 64 to achieve the goal of providing its customers safe and reliable water, even during dry periods, based on conservative water supply and demand assumptions over the next 25 years, as discussed in the following sections.

7.1 Constraints on Water Sources

In any given year, the variability in weather patterns around the state may affect the availability of groundwater replenishment supplies from the SWP to MWA (and, in turn, to CSA 64). MWA’s service area is typical in terms of water management in southern California, local groundwater supplies are used to a greater extent when imported supplies are less available due to dry conditions in the north, and larger amounts of imported water supplies are used during periods when northern California has wetter conditions. This pattern of “conjunctive use” has been in effect since SWP supplies first became available to CSA 64’s wholesale water supplier (MWA) in

1978. SWP supplies have supplemented the overall supply of MWA's service area, which previously depended solely on local groundwater supplies.

To supplement these local groundwater supplies, MWA contracted with the California Department of Water Resources (DWR) for delivery of SWP water, providing an imported water supply to the groundwater basins. However, the variability in SWP supplies affects the ability of MWA to meet the overall water supply needs for the service area. Among MWA's available supply sources, the SWP supplies are most variable, and therefore have the largest effect on supply reliability.

MWA's 'Table A' amount identifies the maximum amount of water the Agency can request. However, the amount of SWP water actually allocated to MWA (as well as all other SWP contractors) each year is dependent on a number of factors that can vary significantly from year to year. The primary factors affecting SWP supply availability include hydrologic conditions in northern California, the amount of water in SWP storage reservoirs at the beginning of the year, regulatory and operational constraints, and the total amount of water requested by the contractors. The availability of SWP supplies to MWA is generally less than their full 'Table A' amounts and can be significantly less in very dry years.

MWA uses DWR's *State Water Project Delivery Reliability Report 2015* (July 2015), to assess the reliability of the SWP component of their overall supplies. The Report updates DWR's estimate of the current (2015) and future (2035) water delivery reliability of the SWP. The updated analysis shows that the primary component of the annual SWP deliveries (Table A) will be less under current and future conditions, when compared to the preceding report (SWP Delivery Reliability Report 2013).

In the 2015 Report, DWR presents the results of its analysis of the reliability of SWP supplies, based on model studies of SWP operations. In general, the DWR model studies show the anticipated amount of SWP supply that would be available for a given SWP water demand, given an assumed set of physical facilities and operating constraints, based on years of historic hydrology. The results are interpreted as the capability of the SWP supply to meet the assumed SWP demand, over a range of hydrologic conditions, for that assumed set of physical facilities and operating constraints. In these model studies, DWR assumed existing SWP facilities and operating constraints for both 2015 and 2035. Using these studies DWR has projected future SWP delivery reliability for MWA, as a percent of their 'Table A' amount, to range from five (5) to sixty two (62) percent for long term average supply until 2040 based on single dry year, average year, and multiple dry years.

Reviewing the 2015 Consumer Confidence Report (CCR) for CSA 64 helps to determine the quality of water supplied to the service area. The water quality parameters that were measured for the 2015 CCR all fell below the Maximum Contaminant Level (MCL) for all the parameters tested. No MCL violations were reported for the 2015 year. Arsenic was determined to be problematic in the 2014 CCR because a level above the MCL was found in Well #4. As a result of the MCL violation, Well #4 was taken offline in 2014. An unregulated constituent, Vanadium, was determined to be over the Notification Level in the 2015 CCR. Overall, the health of water supply is sufficient and since CSA 64 has taken Well #4 offline, there are no contaminants that pose a significant health risk.

7.2 Reliability by Type of Year

CSA 64 has one source of direct water supply which is groundwater from the adjudicated Alto Subbasin. This supply is available to meet demands during average, single-dry, and multiple-dry years. The following sections elaborate on the supply available to CSA 64 during each of the dry year conditions, and what supplies are expected in the future. Each subsection will explain the criteria used for estimating single-dry and multiple-dry year's supplies.

Table 7-1 presents the base years' supply data for the development of water year criteria. The basis for the "year type" is based on the single-driest and multiple-driest years affecting SWP water supply reliability, as that represents the most variable source of supply. However, even though imported supplies to the region from the SWP are highly variable, CSA 64 can rely entirely on groundwater during dry years, allowing for 100% of supply to be available even during dry years.

Table 7-1 Retail: Basis of Water Year Data			
Year Type	Base Year <i>If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000</i>	Available Supplies if Year Type Repeats	
		<input type="checkbox"/>	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		<input checked="" type="checkbox"/>	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	2015		100%
Single-Dry Year	1977		100%
Multiple-Dry Years 1st Year	1931		100%
Multiple-Dry Years 2nd Year	1932		100%
Multiple-Dry Years 3rd Year	1933		100%
Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
NOTES: CSA 64 relies entirely on groundwater and therefore 100% of the volume available will be supplied by groundwater.			

As noted in the table above, CSA 64 relies entirely on groundwater from the Alto Subbasin. Having access to groundwater during dry years eliminates the need to rely on the variable SWP water supplies from northern California which depend on precipitation amounts in northern

California. Even with three (3) consecutive dry years, the total volume of water required was pumped from the groundwater aquifer. It is safe to assume that even during periods of dry years that the service area will still be able to satisfy its water requirement.

7.3 Supply and Demand Assessment

CSA 64 has historically been able to pump as much water as necessary to supply its domestic water demands. In recent years, CSA 64 has been assessed replenishment charges due to pumping in excess of their free production allowance. Therefore, in order to provide adequate assessment of the groundwater basins capacity as a whole, a review of MWA's Supply and Demand analysis considering all Producers of the Alto Subbasin is included here.

The available supplies and water demands for CSA 64's service area were analyzed in this 2015 UWMP to assess the region's ability to satisfy demands during (1) average year, (2) single dry year, and (3) multiple dry years. The supplies and demands for the various drought scenarios for the projected planning period of 2015 – 2040 in five (5) year increments are presented below.

7.3.1 Average Water Year

The table below summarizes CSA 64's water supplies available to meet demands in five year increments to year 2040 during an average/normal year. Reliable SWP supplies are set at sixty two (62) percent of 'Table A' as the long term average supply until 2040. CSA 64's water supply source consist of groundwater pumped from wells within the service area.

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals (autofill from Table 6-9)	2,787	3,149	3,558	4,021	4,543
Demand totals (autofill from Table 4-3)	2,787	3,149	3,558	4,021	4,543
Difference	0	0	0	0	0
NOTES:					

Thus, during a normal rainfall year, CSA 64 can meet the potable water needs for the service area by pumping groundwater. The total existing supplies available to CSA 64 for an average year account for more volume than what is demanded.

MWA, as the Watermaster, provides an overall assessment about the health of the groundwater aquifer. Water deliveries to MWA via the SWP are used to replenish water that is pumped by the producers, including CSA 64, above their FPA. In an average year, MWA will be entitled to approximately sixty two (62) percent of the 'Table A' amounts of SWP water. With the use of SWP water to replenish the aquifer, and the supplies currently found in the aquifer, CSA 64 will

be able to meet the supply and demand for the next twenty five (25) years during an average water year. CSA 64 can pump groundwater to achieve all their demand for the next twenty five (25) years and the replacement water purchased through MWA via the SWP will be used to maintain the overall health of the groundwater aquifer.

7.3.2 Single Dry Water Year

The table below outlines CSA 64's water supplies available to meet demands in five year increments to year 2040 during single dry year scenarios, similar to the drought that occurred in California in 1977. During the dry year scenario, SWP availability was anticipated to be reduced to five (5) percent for the single dry year analysis. The single-dry year supply and demand was reduced by ten (10) percent from an average year to account for State and local conservation mandates. Again, all water demands for CSA 64 will be able to be achieved through existing groundwater supplies. The available supplies will be greater than the demand for all years including 2040.

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	2,508	2,834	3,202	3,618	4,088
Demand totals	2,508	2,834	3,202	3,618	4,088
Difference	0	0	0	0	0
NOTES: Demand during dry years was assumed to decrease by 10% due to State and/or local conservation mandates.					

The demand during these dry year scenarios is assumed to decrease by ten (10) percent due to conservation measures. Although the amount of SWP delivered during the dry years is much less than the average year, the available supplies found in the aquifer will be able to achieve the demand. MWA will use any water that is received from the SWP during a dry year scenario to recharge the groundwater aquifer in an attempt to keep the groundwater levels at a safe pumping level for the producers, including CSA 64.

7.3.3 Multiple Dry Water Years

The table below outlines CSA 64's water supplies available to meet demands in five year increments to year 2040 during multiple dry year scenarios, similar to the droughts that occurred in California in 1931-34. During these dry year scenarios, SWP availability was anticipated to be reduced to 33 percent for the multiple-dry year analysis. The multiple-dry year supply and demand was reduced by 10% from an average year to account for State and local conservation mandates. Again, all water demands will be able to be achieved through existing groundwater supplies and the small amount of SWP that will be delivered to MWA. The available supplies will be greater than the demand for all years including 2040.

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	2,508	2,834	3,202	3,618	4,088
	Demand totals	2,508	2,834	3,202	3,618	4,088
	Difference	0	0	0	0	0
Second year	Supply totals	2,508	2,834	3,202	3,618	4,088
	Demand totals	2,508	2,834	3,202	3,618	4,088
	Difference	0	0	0	0	0
Third year	Supply totals	2,508	2,834	3,202	3,618	4,088
	Demand totals	2,508	2,834	3,202	3,618	4,088
	Difference	0	0	0	0	0
NOTES: Demand during dry years was assumed to decrease by 10% due to State and/or local conservation mandates.						

The demand during these dry year scenarios is assumed to decrease by ten (10) percent due to conservation measures. The conservation measures will increase during a multiple-year drought, and therefore using 10% demand reduction is a conservative approach. It is more likely that the continued drought would result in an even greater demand reduction because of State and local conservation efforts that will be implemented during a multiple-year drought. Although the amount of SWP delivered during the multiple-dry years scenario is much less than the average year, the available supplies found in the aquifer will be able to achieve the demand. MWA will use any water that is received from the SWP during a multiple-dry year scenario to recharge the groundwater aquifer in an attempt to keep the groundwater levels at a safe pumping level for the producers, including CSA 64.

This analysis concludes that CSA 64 will be able to achieve the demand for the service area into the future because the supplies currently found in the aquifer will be maintained by the importing of SWP water and other supply sources (recycled water, surface water, natural infiltration, etc.) during all scenario conditions (average, dry, and multiple-dry years). During a dry year and multiple-dry years the demand is assumed to be reduced because of State and local conservation measures, which will ease the burden on the aquifer because the producers will not pump as much during dry years to maintain the aquifer levels. As long as the aquifer levels can be maintained with replenishment water provided by MWA, CSA 64 will be able to achieve its supply and demand requirement.

7.4 Regional Supply Reliability

CSA 64 and MWA recognize that a sustainable and reliable water supply requires a regional effort. Recently, the partnership between the two entities has helped to reduce water demand by installing water efficient fixtures, implementing a cash-for-grass program, and providing informational water conservation media at public outreach events (see Chapter 9). With MWA monitoring the groundwater levels and charging producers that pump above their FPA, the health of the groundwater aquifer can be maintained. The health of the groundwater aquifer is the most important aspect of supply reliability for the region. If the groundwater levels are maintained with supplies generated within the MWA service area, the SWP supplies will be relied upon less. The water supplies generated within the MWA service area include captured runoff, and recycled water which is used to maintain the aquifer levels. MWA will continue to rely on SWP supplies because they are entitled to a percentage of their 'Table A' amount. The SWP supplies will be used to maintain aquifer levels, which will maintain the supply reliability for the region.

With the availability of replenishment water found within the MWA service area, MWA's ability to collect SWP supplies for groundwater recharge, and the producers found in MWA taking steps to reduce their required water production from the aquifer will maintain the supply reliability for the region. All the steps that MWA takes as Watermaster to maintain levels in the aquifer, and the steps that producers, such as CSA 64, have taken to reduce their water demand will be the steps that are required for the region to maintain an adequate water supply.

Chapter 8 Water Storage Contingency Planning

County Service Area 64 has legal responsibility to provide for the water needs of the community to meet health and safety standards. In order to minimize the social and economic impact of water shortages, CSA 64 will manage its water supply prudently. This plan is designed to maintain a minimum of fifty (50) percent of normal supply during a severe or extended water shortage. For CSA 64, the fifty (50) percent normal per capita supply equates to one hundred (100) percent supply at some of the other desert communities. The following demand reduction program triggering levels are established for consideration by the County Board of Supervisors to ensure that CSA 64 will continue to meet its water supply obligations.

CSA 64's water source is groundwater. The various stages of demand reduction could be triggered by unforeseen shortages (multiple breakdown of wells at any time). Water supplies may be interrupted or reduced significantly in a number of ways. Examples include drought that limits supplies, earthquake that damages water delivery or storage facilities, regional power outage, or toxic spill that affects water quality. This chapter of the Plan describes how CSA 64 plans to respond to such emergencies so that emergency needs are met promptly and equitably.

CSA 64 has developed a policy for addressing water shortage emergencies. The Contingency Plan includes voluntary and mandatory conservation measures. This section summarizes the prohibitions, penalties and financial impacts of shortages developed by the CSA 64.

CSA 64 has water rights to the adjudicated Alto Subbasin. The Basin's groundwater supply is replenished by MWA purchasing imported water from the SWP when available, and recharging the aquifer with recycled water and captured surface runoff into the Basin. During past shortages, CSA 64 has managed to meet all their demands by pumping groundwater only.

Water distribution systems are often connected to neighboring water systems to allow the sharing of supplies during short-term emergencies or during planned shutdowns of a primary supply source. Currently, CSA 64 does not have any emergency interconnection points with the surrounding communities.

8.1 Stages of Action

Ordinance No. SD 15-04 (Appendix H) established water conservation and replaces the previous water conservation Ordinance SD 90-11. The table below identifies the water shortage contingency plan based on the percent reduction required for each of the water supply condition stages. The conservation measures range from drought warning to drought emergency measures.

Table 8-1 Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction ¹ <i>Numerical value as a percent</i>	Water Supply Condition <i>(Narrative description)</i>
<i>Add additional rows as needed</i>		
1	15%	Conservation Stage 1 - Drought Watch
2	40%	Conservation Stage 2 - Drought Alert
3	50%	Conservation Stage 3 - Drought Critical Condition
4	50%	Conservation Stage 4 - Drought Emergency
¹ One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		
NOTES: Based on Special Districts Ordinance No. 15-04.		

Emergency response stage actions become effective when the Director declares that CSA 64 is unable to provide sufficient water supply to meet ordinary demands, to the extent that insufficient supplies are available for human consumption, sanitation, and fire protection. The declaration of conservation stage is to be based on their judgement concerning the degree of the immediate or supply deficiency.

- Conservation Stage 1 – Drought Watch**
 During Conservation Stage 1, normal conditions shall be in effect when CSA 64 is able to meet all the water demands of its customers. Public outreach and providing the public information to educate customers on drought conditions and water conservation measures. Water customers shall be requested to reduce their consumption by no more than fifteen (15) percent from a comparative year selected by the Director.
- Conservation Stage 2 – Drought Alert**
 Continue with the all public information actions from Stage 1. The Director shall request that customers reduce their usage by no more than forty (40) percent from a comparative year designated by the Director or as otherwise mandated by the State.
- Conservation Stage 3 – Drought Critical Condition**
 Continue the public outreach and conservation education programs from Stage 1 and 2. The Director shall request that customers reduce their usage by no more than fifty (50) percent from a comparative year, as designated by the Director or as may otherwise be mandated by the State.
- Conservation Stage 4**
 The Director shall continue all actions specified for Conservation Stages 1, 2, and 3 but shall request that customers reduce their usage by more than fifty (50) percent from a

comparative year, as designated by the Director or as may otherwise be mandated by the state.

At each conservation stage the consumers will be informed that a supply reduction is required and steps will be implemented so that the percent reduction is achieved. The priorities for use of available water for this shortage contingency plan are:

1. Health and Safety – interior residential and firefighting;
2. Commercial, Industrial and Municipal (in-office use) – maintain jobs and economic base;
3. Existing Landscape – especially trees and shrubs;
4. New Demand – project under construction when shortage is declared

Consumers will be notified of the specific percentage reductions requested at each level of shortage as presented in Table 8-1 above. If further water usage reduction beyond the request of 10 percent is warranted, CSA 64 staff will inform consumers of the need for greater conservation. If reduction goals cannot be met by Ordinance SD 15-04, the County Board of Supervisors must take appropriate actions (after public hearings) which are supported by thorough engineering evaluations.

The duration of the declaration of any conservation stage shall remain in effect until such time as another stage is declared or the current stage is rescinded.

8.2 Prohibitions on End Users

Mandatory compliance measures enacted during a water shortage are more severe than voluntary measures, produce greater savings, and are less costly to CSA 64. 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.

Specific use restrictions and prohibitions for each supply shortage taken from CSA 64's Ordinance No. SD 15-04 are as follows (also see Table 8-2):

- **Conservation Stage 1 (Drought Watch)**
 - Customers are encouraged to install and use water saving devices.
 - Rain sensors, low-flow showerheads, faucet aerators, and sprinkler and irrigation watering valves.
 - Low-flow or waterless toilets, high-efficiency and low water use washing machines and dishwashers, and automated irrigation timers and/or controllers.
 - Outdoor irrigation is limited to four (4) days a week.
- **Conservation Stage 2 (Drought Alert)**
 - Comply with all Conservation Stage 1 measures.
 - Outdoor irrigation is limited to 3-days or 2-days per week, with specific days of the week to be designated by the Director.
- **Conservation Stage 3 (Drought Critical Condition)**
 - Except as otherwise set forth in the Conservation Stage, all Conservation Stage 1 and 2 measures shall remain in effect.

- If the Director finds that insufficient conservation is occurring, the Director may impose the following requirements:
 - Outdoor irrigation shall be limited to 1-day per week, with specific days of the week to be designated by the Director.
 - Washing of automobiles, trucks, trailers, boats, airplanes, and other types of mobile equipment is prohibited unless conducted at a commercial car or other facility wash utilizing recycling systems. The only exception to this prohibition is where the public health, safety, and welfare of the public is contingent upon frequent vehicle cleaning, such as garbage trucks and vehicles used to transport food and perishables.
 - The use of fountains or other decorative water features is prohibited unless necessary as habitat for aquatic pets, in which case recirculating water shall be permitted.
 - Draining and filling of private swimming pools is prohibited unless necessary for public health and safety and approved by the Director.
- **Conservation Stage 4 (Drought Emergency)**
 - Except where otherwise set forth in this Stage, all Stage 1, 2, and 3 measures remain in effect.
 - All residential, commercial, and industrial outdoor irrigation is prohibited except as determined on a case by case basis by the Director.
 - Will-serve letters may no longer be issued, if the Board of Directors finds that there exists insufficient water supply to serve new connections.

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>	Penalty, Charge, or Other Enforcement? <i>Drop Down List</i>
Add additional rows as needed			
0	Other	Normal operating conditions. No restrictions.	No
1	Landscape - Limit landscape irrigation to specific days	4-days a week	Yes
2	Landscape - Limit landscape irrigation to specific days	3 or 2-days week. Determined by Director.	Yes
3	Landscape - Limit landscape irrigation to specific days	1-day per week	Yes
3	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Prohibited unless would inhibit public health	Yes
3	Water Features - Restrict water use for decorative water features, such as fountains	Recirculating water shall be permitted	Yes
3	Other water feature or swimming pool restriction	Cannot drain or fill pool without Directors permission	Yes
4	Landscape - Prohibit all landscape irrigation	Allowable on a case by case basis from the Director	Yes
4	Other	Will-Serve Letters will not be issued	Yes
NOTES: Restrictions based on Special Districts Ordinance No. SD 15-04.			

At stage 0, it is normal operating conditions and there is no drought condition present. At stages 1-4 there is a drought condition present, and as the level increases the severity of the drought increases. If a violation occurs in stages 1-4, a penalty or fine can be assessed to the consumer. The penalties for excessive water use will be discussed in the following section.

8.3 Penalties, Charges, Other Enforcement of Prohibitions

Pursuant to Section 377 of the California Water Code each violation of this ordinance may be prosecuted as a) misdemeanor, punishable by the imprisonment in the County Jail for no more than thirty days or b) a fine not exceeding \$1,000, or both. In addition to the Water Code

penalties, violations of this ordinance may result in the imposition of fines and restriction and/or termination of water service as set forth below:

- First Violation – Notice of Violation and Warning of Penalties – a written warning accompanied by a copy of this ordinance, delivered by U.S. Mail and/or hung on customer's door.
- Second Violation (within one year of the first Violation) – A fine of \$100.00 or attendance and successful completion of a "Water Conservation Education Course" within thirty days of the violation notice. Course must be approved by the Director.
- Third Violation (within one year of the first Violation) – A fine of \$200.00.
- Fourth Violation (within one year of first Violation) – A fine of \$300.00 and fee for installation of flow restricting device by the Special Districts Department during the duration of drought declaration.
- Fifth Violation (within one year of the first Violation) – A fine of \$500.00, and termination of service for such period as determined to be appropriate under the circumstances.

Any fine hereunder shall be in addition to the basic water rates and other charges for the account and shall appear on and be payable with the billing statement of the period during which the violation occurred. Nonpayment shall be subject to the same remedies available for non-payment basic water rates.

In addition to any fine, a customer violating this ordinance shall be responsible for payment of charges for installing and/or removing any flow restricting device and for disconnecting and/or reconnecting service. Such charges shall be paid prior to the removal of the flow restrictor or reconnection of service, whichever the case may be.

Fines and penalties collected shall be used to offset any state-imposed fines and penalties and water conservation education and the drought response programs.

8.3.1 Customer Variances to Penalties and Charges

If, due to unique circumstances, a specific requirement of this ordinance would result in undue hardship to a customer that is disproportionate to the impacts to County Service Area or Zone customers generally, then the customer may apply for a variance pursuant to the requirements. Application for a variance shall be a form prescribed by the Director. The application shall be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant. An application for a variance shall be denied unless the Director finds, based on the information provided in the application, that the variance does not constitute a grant of special privilege inconsistent with the limitation upon other customers. Other reasons why the Director could not grant a variance to a customer include special circumstances applicable to the property or its use, the strict application of this ordinance would have disproportionate impact on the property or use that exceeds the impacts to customers generally, authorizing of such a variance will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the County Service Area or Zone to effectuate the purpose of this ordinance and will not be detrimental to the public interest, and that the condition or situation of the subject property or the intended use of the property for which the variance is

sought is not common, recurrent or general in nature. Inconvenience or the potential for damage to landscaping shall not be considered for a variance from any section of this ordinance.

The Director shall exercise approval authority and act upon any completed application within a reasonable time after submittal and may approve, conditionally approve, or deny the variance. The applicant requesting the variance shall be promptly notified in writing of any action taken.

8.3.2 Customer Citation Appeal Process

The Director shall determine when violations have occurred and shall issue to the customer a notice of violation by U.S. First Class mail to the address on file for the customer for the receipt of water bill. Said notice shall describe the action to be taken (notice of first violation shall be accompanied by a copy of Ordinance No. SD 15-04).

A customer may appeal the notice of violation by filing a written notice of appeal directed to the address specified in the notice of violation no later than thirty (30) days from the due date for the payment of any fine. The customer must pay the contested fine notwithstanding a timely appeal. Any notice of violation not timely appealed shall be final. Upon receipt of a timely appeal, the Director shall set the matter for hearing by a designated hearing officer or hearing panel. The hearing shall be held within a reasonable time but not to exceed thirty (30) days following receipt of the appeal. The Director shall mail written notice of the hearing via U.S. First Class mail to the customer at least ten (10) days before the date of said hearing. The decision of the hearing officer or panel shall be final.

Pending receipt of a written appeal or pending a hearing pursuant to an appeal, the Director may take appropriate steps to prevent the unauthorized use of water as appropriate to the nature and extent of the violation and the current declared conservation stage.

8.4 Consumption Reduction Methods by Agencies

CSA 64 will manage water supplies to minimize the social and economic impact of water shortages. The Contingency Plan is designed to provide a minimum fifty (50) percent of normal supply during a severe or extended water shortage.

Demand reduction stages may be triggered by a shortage of water due to a natural disaster or other catastrophe. The guidelines for triggering the stages are listed in Table 8-3. However, circumstances may arise where CSA 64 may deviate from these guidelines, such as in a case where the Governor declares a water shortage emergency and/or institutes a statewide rationing program.

Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier <i>Drop down list</i> <i>These are the only categories that will be accepted by the WUEdata online submittal tool</i>	Additional Explanation or Reference <i>(optional)</i>
Add additional rows as needed		
1	Offer Water Use Surveys	
1	Provide Rebates on Plumbing Fixtures and Devices	
1	Decrease Line Flushing	
1	Reduce System Water Loss	
1	Expand Public Information Campaign	
1	Improve Customer Billing	
2	Provide Rebates for Landscape Irrigation Efficiency	
2	Provide Rebates for Turf Replacement	
3	Increase Water Waste Patrols	
4	Implement or Modify Drought Rate Structure or Surcharge	Due to reduction in consumption, the rate paid by the customer will be less because less water is being used.
4	Increase Frequency of Meter Reading	
4	Moratorium or Net Zero Demand Increase on New Connections	At conservation stage 4, no Will-Serve Letters will be issued.
NOTES: The consumption reduction methods are from the Demand Management Measures.		

The actual water consumption that is reduced by the Consumption Reduction Methods cannot be measured directly. The reduction methods mentioned are all part of the Water Shortage Contingency Plan, and at each stage of conservation allow for the water supplier to implement an action to increase supply reliability. The first stage of conservation will provide customers an opportunity to learn about the drought and steps they can take to reduce their consumption. In stage 1, the water supplier will also takes step to improve the water supply facilities by decreasing line flushing and reduce the system water loss, as well as improve customer billing to better relate the drought conditions to the customers.

Stage 2 will provide the customers with rebates for landscape irrigation efficiency and for turf replacement. The rebates will last as long as the required funding for a particular year.

Stage 3 of conservation will increase the water waste patrols and will give citations to the customers who are in direct violation of Ordinance SD 15-04.

Stage 4 will take into account the required conservation of fifty (50) percent of water consumption and because of the reduced consumption the rate structure that is billed to the customer must be modified to address the reduced consumption. A customer will be required to reduce their consumption by fifty (50) percent and this means that customers billed for their usage will have a lower bill because of reduced usage due to conservation. CSA 64 will also increase the frequency of meter reading in order to monitor the limited supply more closely. This will allow CSA 64 to identify potential problems in the system and allow the water supplier to fix the problem faster than if a bi-monthly check of the water meter was conducted. Finally, in stage 4 of conservation, no new customer connections will be allowed to be added to the system unless a net zero demand increase occurs for the new connections. This net zero demand rarely occurs because any new connection will require additional water to be supplied.

8.5 Determining Reductions

Water use is determined by meter records, which are read and recorded bi-monthly. All of CSA 64's customers are metered. CSA 64 will use these devices to monitor the CSA 64's actual reductions in water use.

8.6 Revenue and Expenditure Impacts

Based on information provided by CSA 64 staff and brief review of the CSA 64 operations indicates that reduced water sales due to demand reduction will impact the District's revenues. However, with the reduced per capita water consumption, it will also reduce water replenishment payment obligations to the Mojave Basin Area Watermaster.

The annual CSA 64 budget depends upon water sales for over fifty (50) percent of the total annual revenue. As demand reduction goals are met, water sales will decrease and actual consumption related costs are anticipated to increase due to more difficult pumping conditions.

Subsequent analysis by CSA 64 staff (based on review of other county service areas) recommended adjustment of water rate schedules to more align with the fixed costs. Minimum monthly charges would more closely cover the actual fixed costs and water rates would reflect actual production and delivery costs. Under an adjusted fixed cost water rate structure, the impact of reduced water sales on the overall District revenues will not be as significant.

The majority of operating costs for most water agencies are fixed rather than a function of the amount of water sold. As a result, when significant conservation programs are undertaken, it is frequently necessary to raise water rates because the revenue generated is based on lower total consumption while the revenue required is basically fixed.

CSA 64 has structured rates in a way that customers pay a fixed "water availability" charge based on meter size and separately pay a usage charge based on metered usage. The intention behind this structure is to appropriately allocate rates according to the costs, whether fixed or variable. This results in less of an impact to CSA 64's budget if water sales decrease dramatically. CSA 64 would make up for declining revenues by reducing operating and maintenance expenses,

deferring some capital improvement projects until after the drought situation improves, deferring the purchase of computers, upgrades, publications, and using the funds held in reserve for replacement of facilities.

8.6.1 Drought Rate Structures, Surcharges

CSA 64 does not currently have a drought rate structure or surcharge, other than what is described in Section 8.6. Because CSA 64's rate structure is split between a fixed water availability charge and usage charges, it is not anticipated that surcharges are needed.

A way that it could be implemented is by charging more for the reduced consumption that occurs during Conservation Stage 3 and 4 by applying surcharges at those stages of drought. A customer will be charged more money for using less water. The amount a customer will be billed is close to the amount that was billed when conservation measures were not implemented. The surcharges will be used as a way to keep the required revenue generated from water sales.

8.6.2 Use of Financial Reserves

In the event that revenue declines were severe enough that operating expenses could not realistically be reduced to meet revenues, CSA 64 has built financial reserves that can be utilized for a limited time to cover expenses.

The goal of CSA 64 is not to rely on the financial reserves and that steps will be taken to charge the customers an appropriate amount for water consumption in order to avoid paying for expenses out of financial reserves.

8.6.3 Other Measures

No other measures are in place in addition to what has been listed above.

8.7 Resolution or Ordinance

County of San Bernardino Ordinance No. SD 15-04 addresses droughts, outages, and shortages, and includes a water shortage contingency plan. A copy of the Ordinance is included in Appendix H.

8.8 Catastrophic Supply Interruption

In addition to long-term shortages caused by droughts, other emergency situations could result in a temporary water shortage situation resulting from earthquake, fire, or other disasters affecting the power supply or the distribution system, and thus CSA 64's ability to provide potable water.

For a major emergency such as an earthquake, Southern California Edison (Edison) has declared that in the event of an outage, power would be restored within a twenty four (24) hour period. For example, following the 1994 Northridge earthquake, Edison was able to restore power within nineteen (19) hours. Edison experienced extensive damage to several key power stations, yet was still able to recover within a twenty four (24) hour timeframe. It is possible, although highly unlikely, that severe damage to southern California electric utility infrastructure could cause outages lasting four (4) to five (5) days.

CSA 64 has backup power supply in place at critical locations throughout the distribution system in order to provide minimum health and safety water supply to its customers during this type of an outage.

In the event of a natural or human caused disaster that could affect CSA 64's ability to provide potable water for up to thirty (30) days, the following measures would be implemented as needed:

- CSA 64's Boil Water Notification Program would be activated. The notice would be provided to local radio stations and newspapers. CSA 64's emergency services would be contacted to broadcast messages throughout neighborhoods. Customers would be notified of supplemental sources of water for cooking and drinking.
- Irrigation uses of water would immediately be prohibited. Enforcement would occur through CSA 64 emergency services.
- Local bottled water companies would be contacted to begin deliveries of potable water tanks to selected sites within CSA 64. The trucks would be manned by CSA 64 personnel to distribute water for drinking purposes.

A public information program would be initiated. A member of CSA 64 staff would appear on local television and provide daily reports to the local newspaper and radio stations. Members of the CSA 64 staff would speak to local service clubs and Chamber of Commerce.

8.9 Minimum Supply Next Three Years

The minimum water supply available during the next three years would occur during a three-year multiple-dry year event between the years 2016 and 2018. As shown in Table 8-4, the total supplies are approximately 2,594 – 2,722 AFY during the next three years. When comparing these supplies to the demand projections, CSA 64 has adequate supplies available to meet projected demands should a multiple-dry year period occur during the next three years.

Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	2,335	2,392	2,450
NOTES: The minimum supply for the next three (3) years was determined by reducing the supply by ten (10) percent due to local and State conservation measures.			

The minimum available water supply was found by using the demand found for the years between 2015-2020 and reducing those demands by ten (10) percent. This would account for the required local and State conservation measures of ten (10) percent. The minimum amount of water that is required in the service area over the next three (3) years is based on multiple dry years. The required demand during multiple dry years is reduced, and therefore the minimum water supply available is also reduced.

Chapter 9 Demand Management Measures

The County's conservation program for CSA 64 is based on the 14 Demand Management Measures (DMMs). CSA 64 is not a member of the California Urban Water Conservation Council (CUWCC). However, CSA 64 is a member of the Alliance for Water Awareness and Conservation (AWAC) organization, which provides conservation program support to member agencies throughout the Mojave Water Agency service area.

The County's conservation and demand management program goals are to increase water use efficiency and meet the 20x2020 gpcd targets. The program is divided into foundational and programmatic measures, in line with the CUWCC, as shown in Table 9-1. Foundational measures address County operational practices that enhance water measurement and management and support efforts to improve water use efficiency. The County does not estimate or track water savings for the foundational measures, as each measure is an unquantifiable measure per the CUWCC. Programmatic BMPs will be evaluated for effectiveness by tracking customer participation and response to the programs. Although potential water savings can be theoretically calculated for programmatic BMPs, the County will instead track overall gpcd values. The County will track overall production, customer usage, and gpcd to determine the effectiveness of the overall program and help refine the program as needed to maintain gpcd target goals. The County will develop a gpcd tracking tool for internal demand management use and for use as an external communications tool to notify customers of target progress. The tool will track monthly production data, bi-monthly meter read data, population data, and weather based correction factors to develop a monthly gpcd value and compare the value to the target goal.

Table 9-1 Retail Only: Conservation Program - Demand Management Measures		
BMP	Title	Type
1	Residential Water Use Survey	Programmatic
2	Residential Plumbing Retrofit	Programmatic
3	System Audit and Leak Repair	Foundational
4	Metering with Commodity Rates	Foundational
5	Large Landscape Programs	Programmatic
6	Washing Machine Rebate Program	Programmatic
7	Public Information Programs	Foundational
8	School Education Programs	Foundational
9	Commercial, Institutional, Industrial Programs	Programmatic
10	Wholesaler Programs - Not Applicable	Foundational
11	Conservation Rates	Foundational
12	Conservation Coordinator	Foundational
13	Water Waste Prohibition Ordinance	Foundational
14	High Efficiency Toilet Rebates	Programmatic
NOTES: The Demand Management Measures are based on the 2010 Urban Water Management Plan completed by CSA 64.		

BMP 1: Water Survey Programs for Single-Family and Multiple-Family Residential Customers

The County offers water use audits to all of its customers. Depending on the customer's request, the survey may include an irrigation system review, meter calibration, meter replacement if older than ten (10) years, and basic leak detection. The County does not conduct indoor water audits, but will be adding a customer indoor questionnaire to the audit procedures. The indoor questionnaire will ask the customer to quantify number and type of toilets, washing machines, showerheads, and faucet aerators, as well as other water use information. The customer will be offered information on the County's indoor conservation programs and information on water efficient devices and practices.

The County will use the indoor survey results to inform and support its conservation program analysis and review so that the most efficient program can be offered to its customers.

BMP 2: Residential Plumbing Retrofit

The County is planning to implement this DMM within the next budget cycle and is currently developing the program requirements and budget. The County will purchase retrofit kits for distribution to customers during a water survey audit (DMM 1), or for pickup at the County's office. The County may also distribute retrofit kits during public outreach events depending on the ability to identify and verify its own customers at these larger, valley-wide outreach events. The County will work with the AWAC to investigate partnering opportunities to standardize a retrofit kit program amongst all of the AWAC members.

The retrofit kits could contain WaterSense compliant faucet aerators and low flow showerheads, hose sprayers with automatic shutoff, toilet leak detection kits, information, or other items, depending on the kit selected. The program budget will evaluate staff efforts and costs, alternative kits, and maximum annual expenses. It is anticipated that budget will only be available for a fixed number of kits per year. Once all kits are distributed in a given budget year, additional kits will become available in the next budget year.

BMP 3: System Water Audits, Leak Detection and Repair

The County continually evaluates its system for unaccounted for water. The County monitors the system through SCADA, field crew observations, customer reports, and visual inspection by employees and crew who can react quickly to repair a detected or reported leak. Staff also checks the meter box for leaks when conducted meter maintenance and either repair leaks on the County's side, or notify the customer of leaks on the customer's side of the meter. Water main leaks are typically repaired within the same day and field staff prepare a leak repair report. These reports are reviewed and tabulated by management staff including plotting of leak locations and frequency on a water distribution map. From these records, short and long term plans are developed for replacement of chronically leaking infrastructure.

The County recently completed a \$2 million dollar service connection replacement program in which nearly all the service lines were replaced. The program was identified as a priority based on operations and maintenance data and observations of high number of service line leaks.

The County is actively working to increase its leak detection and repair, and non-revenue water monitoring efforts. Operations and maintenance staff have been trained on leak detection

methods through the California Rural Water Association. The County also plans on using the AWWA Water Audit model to track and identify non-revenue water components. This data will be used to focus the non-revenue water reduction efforts on the appropriate elements.

The County is also upgrading its production meters to improve meter performance and accuracy. In addition, meters have been added to the well lube lines to account for pumping water use. This improved tracking and accounting of actual water production will increase the non-revenue water analysis accuracy and support the gpcd tracking and compliance efforts.

BMP 4: Metering with Commodity Rates for all New Connections and Retrofit of Existing

The CSA 64 service area is one hundred (100) percent metered. All customers are billed bi-monthly based on commodity rates, including a three tier price structure. All new customers are metered and billed on the metered rate.

The County is currently budgeting for a meter replacement program that includes installation of a cellular based automatic meter reading system. The County installed meters on all of its customer connections from approximately 1994 to 1995. Therefore, most of the customer meters are nearing the end of their expected life and should be replaced. The meter replacement program will replace all meters and cellular meters to allow automatic meter reading. The cellular read system will include software that translates the meter read data and works through the customer database interface to support customer billing. The program will also include database query tools and reports to allow County staff to investigate daily, or even hourly, customer demands in order to identify potential leaks and develop demand management programs to cost effectively meet the gpcd compliance requirements.

BMP 5: Large Landscape Conservation Programs and Incentives

The County and AWAC provide extensive landscape education materials to all its customers. Materials include information on desert landscape and recommended plantings. The program has developed six prototype landscape designs to educate customers on landscape and planting options.

The program also provides a cash-for-grass rebate when funding is available. AWAC currently relies on grant funding for the program; therefore, the cash for grass program is currently suspended. The County currently refers customers to SaveOurWaterRebates.com where they can receive up to \$2.00 per square foot of turf removal through the Department of Water Resources. Each customer can receive a rebate up to a maximum of \$2,000.

The County Land Use Services Department is responsible for land use planning and ordinances. The Department adopted the State Model Efficient Landscape Ordinance on January 1, 2001 per State statute. The County CSA will work with the County Land Use Department to implement the Landscape Ordinance requirements for each of its water service areas.

BMP 6: High-Efficiency Washing Machine Rebate Program

The AWAC previously implemented a rebate program available to County customers. The program provided rebates for the purchase of high-efficiency washing machines when funding was available. AWAC relies on grants to fund the program. Currently, the previous grant funding the program has been expended, and the program is not offering rebates at this time. The County

will continue seek funding opportunities and/or apply to grants to re-fund the program. The County will continue to work with AWAC to identify and apply for grant opportunities.

BMP 7: Public Information Program

The County provided information on its water conservation program and on water conservation to the public through its own efforts and through AWAC. The public information program includes informational materials, community event participation, speaker's bureau, print and radio advertisements and public service announcements, newsletters, and other efforts.

The AWAC annually participates in over seven (7) community events such as festivals, home and garden shows, and fairs. AWAC provides a booth and staff to answer questions, handout information and literature, and raise water use awareness. County staff participate in the AWAC booths and presentations. An annual calendar is published that provides month-specific water use tips and conservation information. Newsletters and special newspaper inserts provide information on conservation programs and resources. Specific public workshops are offered to provide information on high desert plant species, indoor and outdoor water conservation, planning and operating water efficient irrigations systems, planning and maintaining water efficient landscape, water system winterizing, and other topics. A plant of the month is identified and promoted each month through the various media such a print, radio, website, and special events. The County also promotes these events and opportunities to its customers through its website, Facebook, bill stuffers, and other advertising. Most of the printed material is available to customers at the County's office.

BMP 8: School Education Programs

The County is budgeting to implement a school education program. The program will include purchasing grade-specific water efficiency educational materials for distribution to teachers and schools in the County's service area. County staff will develop school presentations and promote the program to the local schools. A strategic implementation plan will identify educational materials to purchase, presentation training and development, school and teacher outreach plan, schedule, and required budget. The County will also coordinate with AWAC to identify program elements that could be implemented through AWAC on a valley-wide basis.

BMP 9: Conservation Programs for Commercial, Industrial and Institutional (CII) Accounts

The County is currently developing a conservation program to its CII customers. CSA 64 has relatively few CII connections (45 out of the total 3,811 connections). CSA 64 also maintains 9 landscape irrigation connections that are mostly attributed to CII accounts. Of the total CII and Landscape connections, there are only 54 customers, as many customers have multiple connections. Most of the CII customers are schools, retail businesses, and the Spring Valley Lake Association. The County is developing a program to better understand the CII customer water uses in order to provide relevant water efficiency programs.

The program will conduct a CII and Landscape connection analysis by reviewing account information and grouping connections together for the same customer. All connections with indoor and outdoor usage will be identified. Metered water use per customer will be developed

to establish historic baselines. The water use analysis will be conducted in parallel with DMM 5, Large Landscape Programs, and will include the water budgets developed under DMM 5.

The County will develop and offer a water use survey program for its CII customers. The survey will identify water using practices, fixtures, and equipment, in addition to the landscape survey elements from DMM 5. A survey report will be developed for the customer identifying findings and recommendations for improving water efficiency. The County will use the survey findings coupled with the ongoing customer water use data analysis to determine which, if any, specific implementation and/or informational programs to offers its CII customers.

BMP 10: Wholesale Agency Assistance Programs

The County CSA 64 is a retail water agency and, as such, DMM is not applicable. However, as a member of AWAC, the County does coordinate with conservation efforts provided by the Mojave Water Agency and AWAC.

BMP 11: Conservation Pricing

All CSA 64 connections are metered and charged on a three-tiered metered rate. The metered rates consist of two parts; facility charge and volumetric charge. Each customer is charged a facility charge based on meter size. The three-tiered water rate structure contains increasing volumetric prices and is applicable to all customers. Meters are read bi-monthly and customers are billed bi-monthly.

BMP 12: Conservation Coordinator

The County's Division Manager serves as the conservation coordinator. Specific programs and/or tasks are delegated to the appropriate operations and maintenance, customer service, or outreach staff. The County also coordinates with the fulltime staff at AWAC who implement extensive public outreach efforts, information programs, and rebate programs. The County conservation coordinator duties include coordination and oversight of conservation program and BMP implementation, and coordination and participation in AWAC programs and AWAC committees.

BMP 13: Water Waste Prohibition

The County's Water Conservation Ordinance SD 15-04 (Appendix H) prohibits water waste and is an ongoing component of the water conservation program. SD 15-04 includes the following water waste prohibitions:

- Water shall be confined to the customer's property and shall not be allowed to run-off to adjoining properties or to the roadside ditch or gutter. Care shall be taken not to water past the point of saturation.
- Washing streets, parking lots, driveways, sidewalks, or buildings, except as necessary for health, esthetic, or sanitary purposes, is prohibited.
- Landscape irrigation is only allowed during certain times of the day, depending on annual season.
- Non-commercial vehicle washing only allowed with automatic shutoff device on hose.
- Only recycled water is allowed for use in decorative fountains. Fountains must recycle water.
- Water shall not be allowed to leak, leaks must be repaired in a timely manner.
- Restaurants only provide water upon request.

- Construction water must be used in an efficient manner.
- All new construction must be equipped with low flow devices.
- All new model home and commercial construction landscape must use native or drought-tolerant plantings and must use highly efficient irrigation systems.
- Cooling systems must use recycled water to the extent possible.
- All new pools and spas must be covered.
- Hotels/motels inform customers to conserve water.
- Current customers encouraged to install flow reducers and faucet aerators.
- Parks, golf course, cemeteries, and school grounds only irrigate between 9:00 PM and 3:00 AM.

The water waste prohibition program is implemented as part of the County's water shortage contingency plan. Penalties for violations include installation of flow restrictor device or service shutoff, with customer responsible for all costs. Depending on hydrologic or supply conditions, additional constraints on water use are enforced by the County through additional violation notices and fines.

BMP 14: Residential Toilet Replacement Program

The County has developed a toilet replacement rebate program for inclusion on the 2016/2017 budget. The program will offer rebates for customer to replace existing 1.7 gallon per flush or larger toilets with high efficiency toilets (HET) that consume less than 1.28 gallons per flush. Program implementation will include promotional material describing the program and enrollment information. Information will be provided on the County's website, in customer bills, at public outreach events, and at the County office. Customers receiving rebates will be required to complete the water audit and indoor water use survey to maximize the overall water efficiency potential for each customer. Survey information will be collected and analyzed to help the County improve and focus its conservation program to maintain gpcd compliance.

The rebate program will be funded on an annual basis at a set amount. Once the budget is expended for the fiscal year, additional rebates will not be available until funding is provided in the next fiscal budget cycle. Depending on each annual budget, the County may adjust the rebate amount to better match customer participation and coverage potential. The County will also pursue additional funding and potential development of a regional program through coordination with the AWAC.

9.2 Implementation over the Past Five Years

Specific information about the Nature and Extent of each Demand Management Measure is included in the applicable sub-section for each category within Section 9.1, above.

9.3 Planned Implementation to Achieve Water Use Targets

As of the 2015 compliance year, CSA 64 met its 2020 Water Use Target of 327 gallons per capita per day. In 2015, CSA 64's Gross Water Use was 238 GPCD (see Chapter 5).

Although the CSA 64 has already successfully implemented its DMMs to meet its 2020 Water Use Target, conservation efforts will continue and will rely on the ongoing implementation of the aforementioned programs and new water efficient infrastructure.

Chapter 10 Plan Adoption, Submittal, and Implementation

10.1 Notice of Public Hearing

Copies of the draft UWMP were made available for public review at least sixty (60) days prior to the Public Hearing which was held on November 14, 2017. Upon adoption, the final 2015 Plan will be submitted to the State DWR pursuant to Section 10644, and made available to the public via hardcopy at the Special Districts Department office located in San Bernardino and at the Water and Sanitation Division office located in Victorville, and through the County's website. Public meetings and the availability of draft copies were properly noticed in the Daily Press newspaper on the Special Districts Department website.

Previous UWMPs were adopted for CSA 64 in years 2000, 2005, and 2010. The preparation of this 2015 UWMP was announced in the local newspapers, and a draft was posted to the Special Districts Department's website with notices sent to the Mojave Water Agency (CSA 64 water wholesaler), and the neighboring retail water purveyor the City of Victorville Water District.

CSA 64 has and continues to encourage community participation in its on-going water management activities and specific water related projects. CSA 64's public participation programs include mailings, public meeting, and web-based communication. CSA 64's water conservation program involves a variety of public awareness programs. The Board of Supervisors for CSA 64 has regularly scheduled meetings that include public comment on water issues. Table 10-1 presents a summary of the notifications to CSA 64 and to San Bernardino County during the development of the Plan. A copy of the public outreach materials, including newspaper advertisements, website postings, and notification letters are included in Appendix C.

Table 10-1 Retail: Notification to Cities and Counties					
City Name	60 Day Notice		Notice of Public Hearing		
<i>Add additional rows as needed</i>					
		<input type="checkbox"/>		<input type="checkbox"/>	
		<input type="checkbox"/>		<input type="checkbox"/>	
		<input type="checkbox"/>		<input type="checkbox"/>	
County Name <i>Drop Down List</i>	60 Day Notice		Notice of Public Hearing		
<i>Add additional rows as needed</i>					
San Bernardino County		<input type="checkbox"/>		<input type="checkbox"/>	
		<input type="checkbox"/>		<input type="checkbox"/>	
Note: Verify who receives a copy of the report.					

10.2 Public Hearing and Adoption

The Special Districts Department of the County of San Bernardino adopted the 2015 Urban Water Management Plan at a noticed Public Hearing held on November 14, 2017.

CSA 64 began preparation of this Plan for its service area in 2016. A Public Hearing was held on November 14, 2017 and the final draft of the Plan was adopted by the County Board of Supervisors. The record of resolution of adoption can be found at the following web address: www.specialdistricts.org. This Plan includes all information necessary to meet the requirements of Water Conservation Act of 2009 (CWC § 10608.12-10608.64) and the Urban Water Management Planning Act (CWC § 10610-10656).

10.3 Plan Submittal

The Plan will be submitted to the DWR no later than November 30, 2017 through the WUEdata online submittal tool. Within 30 days of the Plans adoption, CSA 64 will submit the hardcopy of the Plan to the California State Library, as well as to the San Bernardino County Special Districts Department as well as San Bernardino County.

10.4 Public Availability

The adopted Plan will be available for public review electronically on CSA 64's website. Hard copies will be available at the Special Districts Department and the San Bernardino County Library.

References

- Bookman-Edmonston Engineering, Inc., 1994. *Regional Water Management Plan*. Mojave Water Agency, Apple Valley, California.
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- Schlumberger Water Services. 2004. *Regional Water Management Plan*. Mojave Water Agency, Apple Valley, California.

List of Appendices

Appendix A – Water Conservation Act

Appendix B – UWMP Checklist

Appendix C – Public Outreach Materials

Appendix D – Mojave Water Agency Population Forecast by Beacon Economics

Appendix E – AWWA Water Audit Software Results

Appendix F – SB X7-7 Verification Tables

Appendix G – Mojave Basin Area Judgement (1996)

Appendix H – Ordinance No. SD 15-04 (Water Conservation Program)

Appendix I – CSA 64 Consumer Confidence Report (2014 & 2015)

Appendix A – Water Conservation Act

CHAPTER 4

An act to amend and repeal Section 10631.5 of, to add Part 2.55 (commencing with Section 10608) to Division 6 of, and to repeal and add Part 2.8 (commencing with Section 10800) of Division 6 of, the Water Code, relating to water.

[Approved by Governor November 10, 2009. Filed with
Secretary of State November 10, 2009.]

LEGISLATIVE COUNSEL'S DIGEST

SB 7, Steinberg. Water conservation.

(1) Existing law requires the Department of Water Resources to convene an independent technical panel to provide information to the department and the Legislature on new demand management measures, technologies, and approaches. "Demand management measures" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

This bill would require the state to achieve a 20% reduction in urban per capita water use in California by December 31, 2020. The state would be required to make incremental progress towards this goal by reducing per capita water use by at least 10% on or before December 31, 2015. The bill would require each urban retail water supplier to develop urban water use targets and an interim urban water use target, in accordance with specified requirements. The bill would require agricultural water suppliers to implement efficient water management practices. The bill would require the department, in consultation with other state agencies, to develop a single standardized water use reporting form. The bill, with certain exceptions, would provide that urban retail water suppliers, on and after July 1, 2016, and agricultural water suppliers, on and after July 1, 2013, are not eligible for state water grants or loans unless they comply with the water conservation requirements established by the bill. The bill would repeal, on July 1, 2016, an existing requirement that conditions eligibility for certain water management grants or loans to an urban water supplier on the implementation of certain water demand management measures.

(2) Existing law, until January 1, 1993, and thereafter only as specified, requires certain agricultural water suppliers to prepare and adopt water management plans.

This bill would revise existing law relating to agricultural water management planning to require agricultural water suppliers to prepare and adopt agricultural water management plans with specified components on or before December 31, 2012, and update those plans on or before December

31, 2015, and on or before December 31 every 5 years thereafter. An agricultural water supplier that becomes an agricultural water supplier after December 31, 2012, would be required to prepare and adopt an agricultural water management plan within one year after becoming an agricultural water supplier. The agricultural water supplier would be required to notify each city or county within which the supplier provides water supplies with regard to the preparation or review of the plan. The bill would require the agricultural water supplier to submit copies of the plan to the department and other specified entities. The bill would provide that an agricultural water supplier is not eligible for state water grants or loans unless the supplier complies with the water management planning requirements established by the bill.

(3) The bill would take effect only if SB 1 and SB 6 of the 2009–10 7th Extraordinary Session of the Legislature are enacted and become effective.

The people of the State of California do enact as follows:

SECTION 1. Part 2.55 (commencing with Section 10608) is added to Division 6 of the Water Code, to read:

PART 2.55. SUSTAINABLE WATER USE AND DEMAND REDUCTION

CHAPTER 1. GENERAL DECLARATIONS AND POLICY

10608. The Legislature finds and declares all of the following:

(a) Water is a public resource that the California Constitution protects against waste and unreasonable use.

(b) Growing population, climate change, and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.

(c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.

(d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve streamflows, and reduce greenhouse gas emissions.

(e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.

(f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.

(g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.

(h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.

(i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

10608.4. It is the intent of the Legislature, by the enactment of this part, to do all of the following:

(a) Require all water suppliers to increase the efficiency of use of this essential resource.

(b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.

(c) Measure increased efficiency of urban water use on a per capita basis.

(d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.

(e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.

(f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.

(g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.

(h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.

(i) Require implementation of specified efficient water management practices for agricultural water suppliers.

(j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.

(k) Advance regional water resources management.

10608.8. (a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.

(2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an

administrative proceeding. This paragraph shall become inoperative on January 1, 2021.

(3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.

(b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.

(c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.

(d) The requirements of this part do not apply to an agricultural water supplier that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect. After the expiration of the Quantification Settlement Agreement, to the extent conservation water projects implemented as part of the Quantification Settlement Agreement remain in effect, the conserved water created as part of those projects shall be credited against the obligations of the agricultural water supplier pursuant to this part.

CHAPTER 2. DEFINITIONS

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) "Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of

a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) "Baseline commercial, industrial, and institutional water use" means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) "Commercial water user" means a water user that provides or distributes a product or service.

(e) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(f) "Disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(g) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(h) "Industrial water user" means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(i) "Institutional water user" means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

(j) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(k) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(l) "Process water" means water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and

water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry.

(m) “Recycled water” means recycled water, as defined in subdivision (n) of Section 13050, that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:

(1) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:

(A) Metered.

(B) Developed through planned investment by the urban water supplier or a wastewater treatment agency.

(C) Treated to a minimum tertiary level.

(D) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.

(2) For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water.

(n) “Regional water resources management” means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(o) “Reporting period” means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(p) “Urban retail water supplier” means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(q) “Urban water use target” means the urban retail water supplier’s targeted future daily per capita water use.

(r) “Urban wholesale water supplier,” means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

CHAPTER 3. URBAN RETAIL WATER SUPPLIERS

10608.16. (a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

(b) The state shall make incremental progress towards the state target specified in subdivision (a) by reducing urban per capita water use by at least 10 percent on or before December 31, 2015.

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in subdivision (a) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

(2) The per capita daily water use that is estimated using the sum of the following performance standards:

(A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.

(B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.

(C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.

(3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.

(4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:

(A) Consider climatic differences within the state.

(B) Consider population density differences within the state.
(C) Provide flexibility to communities and regions in meeting the targets.
(D) Consider different levels of per capita water use according to plant water needs in different regions.

(E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

(F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(e) An urban retail water supplier shall include in its urban water management plan required pursuant to Part 2.6 (commencing with Section 10610) due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its Internet Web site, and make written copies

available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with subdivision (l) of Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) An urban retail water supplier shall be granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

10608.22. Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

10608.24. (a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

(b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

(c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

(d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

(e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area, may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

(f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.

(2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26. (a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

(b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.

(c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the United States Department of Defense military installation's requirements under federal Executive Order 13423.

(d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

(2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28. (a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

10608.32. All costs incurred pursuant to this part by a water utility regulated by the Public Utilities Commission may be recoverable in rates subject to review and approval by the Public Utilities Commission, and may be recorded in a memorandum account and reviewed for reasonableness by the Public Utilities Commission.

10608.36. Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

10608.40. Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

10608.42. The department shall review the 2015 urban water management plans and report to the Legislature by December 31, 2016, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets in order to achieve

the 20-percent reduction and to reflect updated efficiency information and technology changes.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

- (a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.
- (b) Evaluation of water demands for manufacturing processes, goods, and cooling.
- (c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.
- (d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.
- (e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

10608.44. Each state agency shall reduce water use on facilities it operates to support urban retail water suppliers in meeting the target identified in Section 10608.16.

CHAPTER 4. AGRICULTURAL WATER SUPPLIERS

10608.48. (a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers shall implement all of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

(6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.

(7) Construct and operate supplier spill and tailwater recovery systems.

(8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.

(9) Automate canal control structures.

(10) Facilitate or promote customer pump testing and evaluation.

(11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.

(12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:

(A) On-farm irrigation and drainage system evaluations.

(B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.

(C) Surface water, groundwater, and drainage water quantity and quality data.

(D) Agricultural water management educational programs and materials for farmers, staff, and the public.

(13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.

(14) Evaluate and improve the efficiencies of the supplier's pumps.

(d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.

(e) The data shall be reported using a standardized form developed pursuant to Section 10608.52.

(f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.

(g) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.

(h) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.

(i) (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

CHAPTER 5. SUSTAINABLE WATER MANAGEMENT

10608.50. (a) The department, in consultation with the board, shall promote implementation of regional water resources management practices through increased incentives and removal of barriers consistent with state and federal law. Potential changes may include, but are not limited to, all of the following:

(1) Revisions to the requirements for urban and agricultural water management plans.

(2) Revisions to the requirements for integrated regional water management plans.

(3) Revisions to the eligibility for state water management grants and loans.

(4) Revisions to state or local permitting requirements that increase water supply opportunities, but do not weaken water quality protection under state and federal law.

(5) Increased funding for research, feasibility studies, and project construction.

(6) Expanding technical and educational support for local land use and water management agencies.

(b) No later than January 1, 2011, and updated as part of the California Water Plan, the department, in consultation with the board, and with public input, shall propose new statewide targets, or review and update existing statewide targets, for regional water resources management practices, including, but not limited to, recycled water, brackish groundwater desalination, and infiltration and direct use of urban stormwater runoff.

CHAPTER 6. STANDARDIZED DATA COLLECTION

10608.52. (a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28.

(b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24 and an agricultural water supplier's compliance with implementation of efficient water management practices pursuant to subdivision (a) of Section 10608.48. The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

CHAPTER 7. FUNDING PROVISIONS

10608.56. (a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(b) On and after July 1, 2013, an agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(d) Notwithstanding subdivision (b), the department shall determine that an agricultural water supplier is eligible for a water grant or loan even though the supplier is not implementing all of the efficient water management practices described in Section 10608.48, if the agricultural water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the efficient water management practices. The supplier may request grant or loan funds to implement the efficient water management practices to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

10608.60. (a) It is the intent of the Legislature that funds made available by Section 75026 of the Public Resources Code should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for grants to implement this part. In the allocation of funding, it is the intent of the

Legislature that the department give consideration to disadvantaged communities to assist in implementing the requirements of this part.

(b) It is the intent of the Legislature that funds made available by Section 75041 of the Public Resources Code, should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for direct expenditures to implement this part.

CHAPTER 8. QUANTIFYING AGRICULTURAL WATER USE EFFICIENCY

10608.64. The department, in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders, shall develop a methodology for quantifying the efficiency of agricultural water use. Alternatives to be assessed shall include, but not be limited to, determination of efficiency levels based on crop type or irrigation system distribution uniformity. On or before December 31, 2011, the department shall report to the Legislature on a proposed methodology and a plan for implementation. The plan shall include the estimated implementation costs and the types of data needed to support the methodology. Nothing in this section authorizes the department to implement a methodology established pursuant to this section.

SEC. 2. Section 10631.5 of the Water Code is amended to read:

10631.5. (a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

(3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

(4) (A) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

(B) For purposes of this paragraph, “not locally cost effective” means that the present value of the local benefits of implementing a water demand management measure is less than the present value of the local costs of implementing that measure.

(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following:

(A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water Conservation in California, and alternative conservation approaches that provide equal or greater water savings.

(B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and retail water suppliers.

(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following:

(i) Compliance on an individual basis.

(ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements.

(B) The department may require additional information for any determination pursuant to this section.

(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

(c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).

(d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.

(e) The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit biennial reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures.

(f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

SEC. 3. Part 2.8 (commencing with Section 10800) of Division 6 of the Water Code is repealed.

SEC. 4. Part 2.8 (commencing with Section 10800) is added to Division 6 of the Water Code, to read:

PART 2.8. AGRICULTURAL WATER MANAGEMENT PLANNING

CHAPTER 1. GENERAL DECLARATIONS AND POLICY

10800. This part shall be known and may be cited as the Agricultural Water Management Planning Act.

10801. The Legislature finds and declares all of the following:

- (a) The waters of the state are a limited and renewable resource.
- (b) The California Constitution requires that water in the state be used in a reasonable and beneficial manner.
- (c) Urban water districts are required to adopt water management plans.

(d) The conservation of agricultural water supplies is of great statewide concern.

(e) There is a great amount of reuse of delivered water, both inside and outside the water service areas.

(f) Significant noncrop beneficial uses are associated with agricultural water use, including streamflows and wildlife habitat.

(g) Significant opportunities exist in some areas, through improved irrigation water management, to conserve water or to reduce the quantity of highly saline or toxic drainage water.

(h) Changes in water management practices should be carefully planned and implemented to minimize adverse effects on other beneficial uses currently being served.

(i) Agricultural water suppliers that receive water from the federal Central Valley Project are required by federal law to prepare and implement water conservation plans.

(j) Agricultural water users applying for a permit to appropriate water from the board are required to prepare and implement water conservation plans.

10802. The Legislature finds and declares that all of the following are the policies of the state:

(a) The conservation of water shall be pursued actively to protect both the people of the state and the state's water resources.

(b) The conservation of agricultural water supplies shall be an important criterion in public decisions with regard to water.

(c) Agricultural water suppliers shall be required to prepare water management plans to achieve conservation of water.

CHAPTER 2. DEFINITIONS

10810. Unless the context otherwise requires, the definitions set forth in this chapter govern the construction of this part.

10811. "Agricultural water management plan" or "plan" means an agricultural water management plan prepared pursuant to this part.

10812. "Agricultural water supplier" has the same meaning as defined in Section 10608.12.

10813. "Customer" means a purchaser of water from a water supplier who uses water for agricultural purposes.

10814. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of that entity.

10815. "Public agency" means any city, county, city and county, special district, or other public entity.

10816. "Urban water supplier" has the same meaning as set forth in Section 10617.

10817. “Water conservation” means the efficient management of water resources for beneficial uses, preventing waste, or accomplishing additional benefits with the same amount of water.

CHAPTER 3. AGRICULTURAL WATER MANAGEMENT PLANS

Article 1. General Provisions

10820. (a) An agricultural water supplier shall prepare and adopt an agricultural water management plan in the manner set forth in this chapter on or before December 31, 2012, and shall update that plan on December 31, 2015, and on or before December 31 every five years thereafter.

(b) Every supplier that becomes an agricultural water supplier after December 31, 2012, shall prepare and adopt an agricultural water management plan within one year after the date it has become an agricultural water supplier.

(c) A water supplier that indirectly provides water to customers for agricultural purposes shall not prepare a plan pursuant to this part without the consent of each agricultural water supplier that directly provides that water to its customers.

10821. (a) An agricultural water supplier required to prepare a plan pursuant to this part shall notify each city or county within which the supplier provides water supplies that the agricultural water supplier will be preparing the plan or reviewing the plan and considering amendments or changes to the plan. The agricultural water supplier may consult with, and obtain comments from, each city or county that receives notice pursuant to this subdivision.

(b) The amendments to, or changes in, the plan shall be adopted and submitted in the manner set forth in Article 3 (commencing with Section 10840).

Article 2. Contents of Plans

10825. (a) It is the intent of the Legislature in enacting this part to allow levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

(b) This part does not require the implementation of water conservation programs or practices that are not locally cost effective.

10826. An agricultural water management plan shall be adopted in accordance with this chapter. The plan shall do all of the following:

(a) Describe the agricultural water supplier and the service area, including all of the following:

- (1) Size of the service area.
- (2) Location of the service area and its water management facilities.
- (3) Terrain and soils.
- (4) Climate.

- (5) Operating rules and regulations.
- (6) Water delivery measurements or calculations.
- (7) Water rate schedules and billing.
- (8) Water shortage allocation policies.
- (b) Describe the quantity and quality of water resources of the agricultural water supplier, including all of the following:
 - (1) Surface water supply.
 - (2) Groundwater supply.
 - (3) Other water supplies.
 - (4) Source water quality monitoring practices.
 - (5) Water uses within the agricultural water supplier's service area, including all of the following:
 - (A) Agricultural.
 - (B) Environmental.
 - (C) Recreational.
 - (D) Municipal and industrial.
 - (E) Groundwater recharge.
 - (F) Transfers and exchanges.
 - (G) Other water uses.
 - (6) Drainage from the water supplier's service area.
 - (7) Water accounting, including all of the following:
 - (A) Quantifying the water supplier's water supplies.
 - (B) Tabulating water uses.
 - (C) Overall water budget.
 - (8) Water supply reliability.
- (c) Include an analysis, based on available information, of the effect of climate change on future water supplies.
- (d) Describe previous water management activities.
- (e) Include in the plan the water use efficiency information required pursuant to Section 10608.48.

10827. Agricultural water suppliers that are members of the Agricultural Water Management Council, and that submit water management plans to that council in accordance with the "Memorandum of Understanding Regarding Efficient Water Management Practices By Agricultural Water Suppliers In California," dated January 1, 1999, may submit the water management plans identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of Section 10826.

10828. (a) Agricultural water suppliers that are required to submit water conservation plans to the United States Bureau of Reclamation pursuant to either the Central Valley Project Improvement Act (Public Law 102-575) or the Reclamation Reform Act of 1982, or both, may submit those water conservation plans to satisfy the requirements of Section 10826, if both of the following apply:

- (1) The agricultural water supplier has adopted and submitted the water conservation plan to the United States Bureau of Reclamation within the previous four years.

(2) The United States Bureau of Reclamation has accepted the water conservation plan as adequate.

(b) This part does not require agricultural water suppliers that are required to submit water conservation plans to the United States Bureau of Reclamation pursuant to either the Central Valley Project Improvement Act (Public Law 102-575) or the Reclamation Reform Act of 1982, or both, to prepare and adopt water conservation plans according to a schedule that is different from that required by the United States Bureau of Reclamation.

10829. An agricultural water supplier may satisfy the requirements of this part by adopting an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) or by participation in areawide, regional, watershed, or basinwide water management planning if those plans meet or exceed the requirements of this part.

Article 3. Adoption and Implementation of Plans

10840. Every agricultural water supplier shall prepare its plan pursuant to Article 2 (commencing with Section 10825).

10841. Prior to adopting a plan, the agricultural water supplier shall make the proposed plan available for public inspection, and shall hold a public hearing on the plan. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned agricultural water supplier pursuant to Section 6066 of the Government Code. A privately owned agricultural water supplier shall provide an equivalent notice within its service area and shall provide a reasonably equivalent opportunity that would otherwise be afforded through a public hearing process for interested parties to provide input on the plan. After the hearing, the plan shall be adopted as prepared or as modified during or after the hearing.

10842. An agricultural water supplier shall implement the plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan, as determined by the governing body of the agricultural water supplier.

10843. (a) An agricultural water supplier shall submit to the entities identified in subdivision (b) a copy of its plan no later than 30 days after the adoption of the plan. Copies of amendments or changes to the plans shall be submitted to the entities identified in subdivision (b) within 30 days after the adoption of the amendments or changes.

(b) An agricultural water supplier shall submit a copy of its plan and amendments or changes to the plan to each of the following entities:

- (1) The department.
- (2) Any city, county, or city and county within which the agricultural water supplier provides water supplies.
- (3) Any groundwater management entity within which jurisdiction the agricultural water supplier extracts or provides water supplies.
- (4) Any urban water supplier within which jurisdiction the agricultural water supplier provides water supplies.

(5) Any city or county library within which jurisdiction the agricultural water supplier provides water supplies.

(6) The California State Library.

(7) Any local agency formation commission serving a county within which the agricultural water supplier provides water supplies.

10844. (a) Not later than 30 days after the date of adopting its plan, the agricultural water supplier shall make the plan available for public review on the agricultural water supplier's Internet Web site.

(b) An agricultural water supplier that does not have an Internet Web site shall submit to the department, not later than 30 days after the date of adopting its plan, a copy of the adopted plan in an electronic format. The department shall make the plan available for public review on the department's Internet Web site.

10845. (a) The department shall prepare and submit to the Legislature, on or before December 31, 2013, and thereafter in the years ending in six and years ending in one, a report summarizing the status of the plans adopted pursuant to this part.

(b) The report prepared by the department shall identify the outstanding elements of any plan adopted pursuant to this part. The report shall include an evaluation of the effectiveness of this part in promoting efficient agricultural water management practices and recommendations relating to proposed changes to this part, as appropriate.

(c) The department shall provide a copy of the report to each agricultural water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearing designed to consider the effectiveness of plans submitted pursuant to this part.

(d) This section does not authorize the department, in preparing the report, to approve, disapprove, or critique individual plans submitted pursuant to this part.

CHAPTER 4. MISCELLANEOUS PROVISIONS

10850. (a) Any action or proceeding to attack, review, set aside, void, or annul the acts or decisions of an agricultural water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(1) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.

(2) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 120 days after submitting the plan or amendments to the plan to entities in accordance with Section 10844 or the taking of that action.

(b) In an action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an agricultural water supplier, on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse

of discretion is established if the agricultural water supplier has not proceeded in a manner required by law, or if the action by the agricultural water supplier is not supported by substantial evidence.

10851. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part. This part does not exempt projects for implementation of the plan or for expanded or additional water supplies from the California Environmental Quality Act.

10852. An agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

10853. No agricultural water supplier that provides water to less than 25,000 irrigated acres, excluding recycled water, shall be required to implement the requirements of this part or Part 2.55 (commencing with Section 10608) unless sufficient funding has specifically been provided to that water supplier for these purposes.

SEC. 5. This act shall take effect only if Senate Bill 1 and Senate Bill 6 of the 2009–10 Seventh Extraordinary Session of the Legislature are enacted and become effective.

Appendix B – UWMP Checklist

Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location <i>(Optional Column for Agency Use)</i>
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	Section 1.2
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	Section 1.3
10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	Plan Preparation	Section 2.5.2	Section 2.5
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	Section 3.1
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	Section 3.3
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	Section 3.4.1
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	Section 3.4.2
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	Section 3.4.1
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	Section 4.2
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	Section 4.3
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	N/A Section 4.5
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	Section 5.7
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and	Baselines and Targets	Chapter 5 and App E	Chapter 5

	compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.			
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	Section 5.7
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	Section 5.8
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	N/A Section 5.8
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	N/A
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	Section 5.8
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	Chapter 6
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	Section 6.2
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	Section 6.2.2
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	Section 6.2.1
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	Section 6.2.2
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	N/A Basin Adjudicated
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	Section 6.2.4

	groundwater pumped by the urban water supplier for the past five years			
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	Section 6.2
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	Section 6.8
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	Section 6.9
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	Section 6.7
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	Section 2.5.1
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	N/A
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	N/A Section 6.5
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	N/A Section 6.5
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	N/A Section 6.5
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	N/A Section 6.5
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	N/A Section 6.5
10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description	System Supplies (Recycled Water)	Section 6.5.4	N/A Section 6.5

	of the actual use of recycled water in comparison to uses previously projected.			
10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.5	N/A Section 6.5
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	N/A Section 6.5
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	Section 7.4
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	Section 7.1
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	Section 7.2
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	Section 7.1
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	Section 7.1
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	Section 7.3
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	Section 8.1
10632(a)(2)	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency.	Water Shortage Contingency Planning	Section 8.9	Section 8.9
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	Section 8.8
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	Section 8.2
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	Section 8.4

10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	Section 8.3
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	Section 8.6
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	Section 8.7
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	Section 8.5
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	Section 9.2
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	N/A
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	N/A
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	Section 10.2
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	Section 10.1
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	Section 10.3
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	Section 10.4

10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	Section 10.2
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	Sections 10.2.1	Section 10.2
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	Section 10.3
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	Section 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 10.4.4	Section 10.4
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	Section 10.4
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	Section 10.4

Appendix C – Public Outreach Materials

Appendix D – Mojave Water Agency Population Forecast by Beacon Economics

Mojave Water Agency Population Forecast



December
2015



Mojave Water Agency Population Forecast

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Mojave Water Agency

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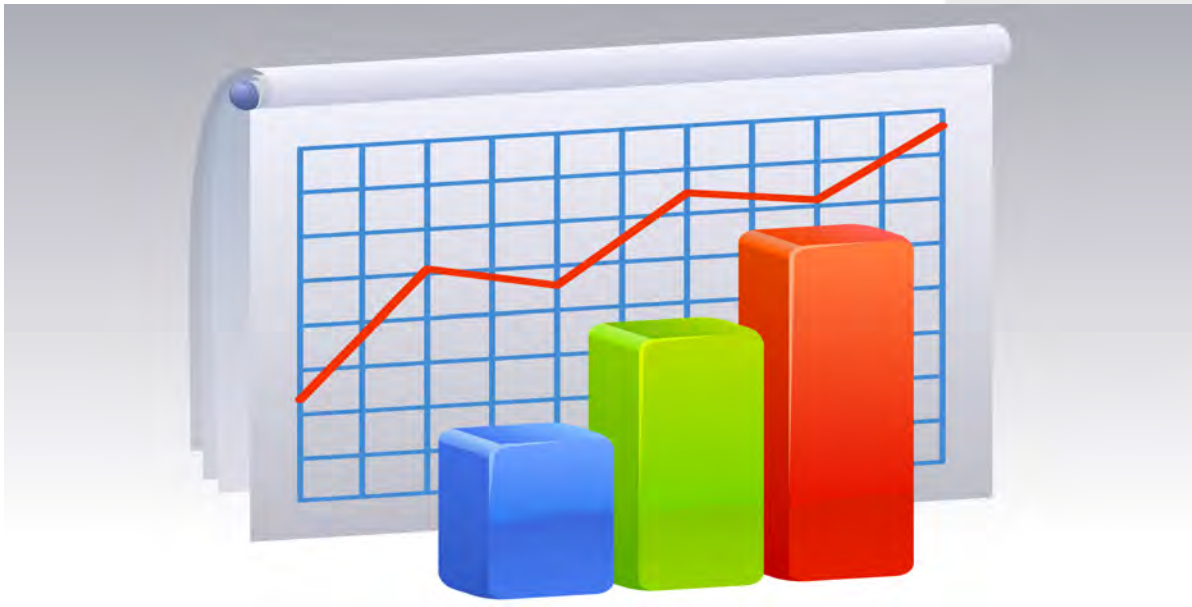
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Contents

Executive Summary	1
Forecast Methodology	2
San Bernardino County / Inland Empire Economic and Demographic Trends	3
Mojave Water Agency Population Forecast	5
Summary	7
Appendix 1: MWA Incorporated City Forecasts	8
Appendix 2: MWA Sub Area Forecasts	9
Appendix 3: MWA Water Purveyor Forecasts	10



EXECUTIVE SUMMARY

Having a good sense of population growth trends is a crucial part of urban development planning, especially when it comes to water. Food and other resources can be readily imported, but developing and managing water infrastructure and resources is best done over the long run with a keen eye on the future. Population forecasting then becomes an integral part of that planning process, and to that end this report has been commissioned by the Mojave Water Agency (MWA) in order to get a better sense of future population growth, as well as the magnitude of that growth.



San Bernardino County and the broader Inland Empire region are anticipated to see more population growth in the near term than the coastal regions of Southern California, and in the longer run, Beacon Economics expects the MWA service area to see even stronger population growth. Affordability is the name of the game here. As housing has become more unaffordable in the coastal counties of Los Angeles, Orange, and San Diego, the Inland Empire has been a destination of choice for many residents willing to commute to the coast.

This has boosted economic activity within the Inland Empire as these commuters spend their wages locally, creating a positive feedback effect which drives further growth and attracts more residents to the area. The MWA service area is, in terms of housing prices, even more affordable than other parts of San Bernardino County, and we expect these dynamics to help drive future population growth above and beyond growth in the County overall.

This forecast uses historical trends primarily to drive future results. Areas that have grown the fastest in the past are projected to see population growth rates above and beyond what is projected for the MWA service area as a whole. Similarly, areas that have grown slower in the past are projected to see slower population growth over the life of the forecast. The forecasts for the incorporated cities have a large influence on the forecasts for the unincorporated regions of the MWA service area (which will be discussed in the subsequent section). Some of the incorporated areas worthy of mention include:

- Victorville: This city experienced one of the strongest average annual population growth rates from 1990 to 2010 – and the 2011 to 2015 estimates indicate similar relative growth. The current forecast calls for 2.0% average annual population growth, slightly higher than the 1.8% for the MWA service area overall.

- Barstow: Out of the incorporated cities Barstow experienced some of the slowest growth from 1990 to 2010 – and the 2011 to 2015 estimates indicate the same trend. As such, this city is expected to be one of the slower growing over the life of the forecast.

This report is divided into three sections. In the first section we provide a broad overview of the methodology used to arrive at the current forecast. The affordability dynamics that have helped drive growth in the broader Inland Empire region are examined in the second part of this report, and in the third part, the similar dynamics are examined for the MWA service area specifically. The detailed forecasts of the MWA service area and its various regions can be found in the appendices at the end of the report.

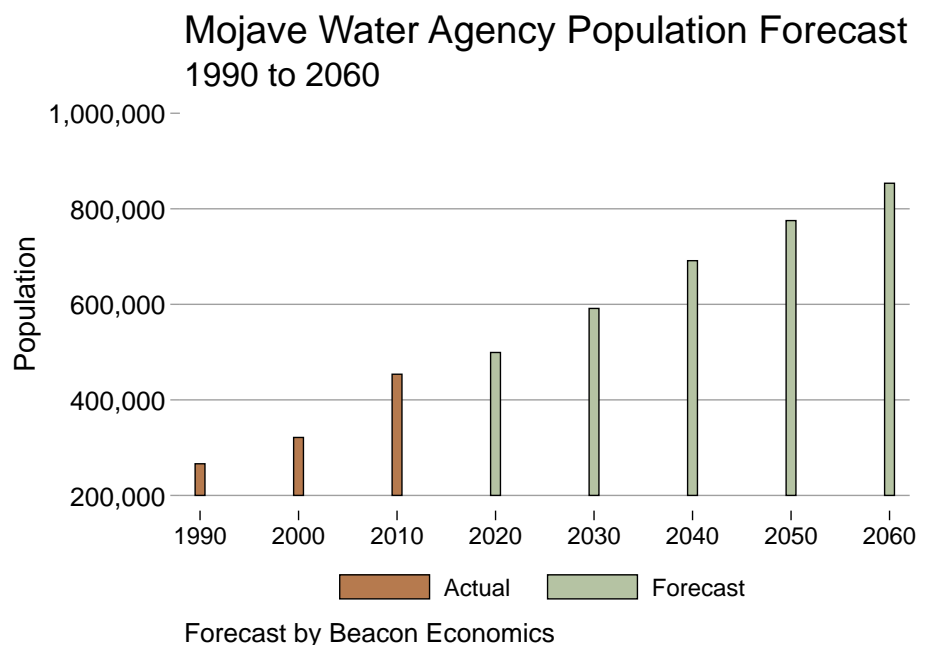
FORECAST METHODOLOGY

Beacon Economics forecast of the MWA service area and its incorporated cities, sub areas, and water purveyors is based on historic correlations with population trends in their surrounding area. A long run driver of future population in the surrounding area was used to forecast population growth out to the year 2060. In the case of the incorporated portions of the MWA service area, historic population trends were correlated with population growth in San Bernardino County overall. In the case of the sub areas and water purveyors in unincorporated regions of the MWA service area, the historical population data was correlated with the nearest incorporated city.

Historical data used in the forecast of the incorporated cities were obtained from the California Department of Finance (DOF), which makes estimates available from 1970 forward on an annual basis. With this data in hand, an econometric time series model was created to capture the historical correlations with countywide population growth. Future population growth for the incorporated cities of the MWA service area was then estimated using these historic correlations and a long run driver of countywide population growth.

Population projections for San Bernardino County from the DOF were used as the long run driver for the forecasts of incorporated cities. The DOF uses a baseline cohort-component method to produce their population projections out to the calendar year 2060. This method traces people born in a given year throughout their lives. As each year passes, cohorts change due to mortality and migration assumptions. Applying fertility assumptions to women of childbearing age forms new cohorts.¹

¹For a more detailed description of the DOF methodology see State of California, Department of Finance, State and County Population Projections by Race/Ethnicity, Sex, and Age 2010-2060, Sacramento, California, December 2014.



Several sub areas and water purveyors in the MWA service area are closely associated with the boundaries of one or more incorporated cities. In these cases the forecasted population growth rates from the incorporated cities were applied to historical population counts for these areas to produce a forecast of future population. For sub areas or water purveyors in an unincorporated portion of the MWA service area, the historical correlations between the respective area and the nearest incorporated city were used to project future population growth. Due to the long run nature of this forecast, DOF countywide population estimates were the primary driver of the estimates for future population in the MWA service area. Other factors, such as building permits or planned developments, were not used as they represent a very short term outlook and are not a driver of population growth in of themselves. A forecast of long run population growth carries with it the assumption that there will be sufficient residential development to accommodate future population growth.

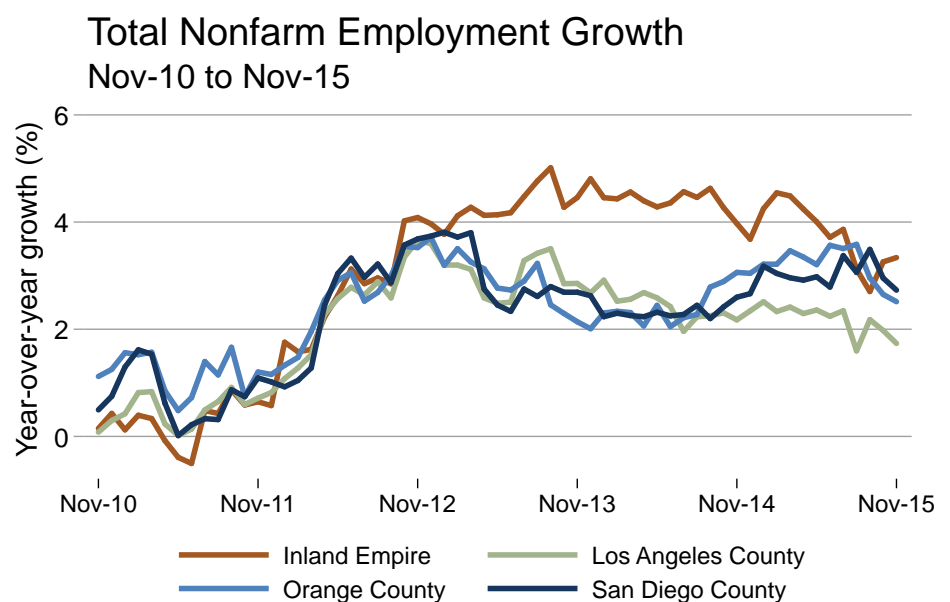
It should be noted that long run forecasts of any nature have a greater margin of error the longer the forecast time frame. Forecasts of one to two years can be quite accurate, whereas forecasts of five to ten years into the future are less likely to be as accurate. Several factors, most notably business cycle effects, can have strong impacts on population or other socioeconomic indicators, over the long run. Forecasts are a ultimately a “best guess” given current data and assumptions, and forecasts far into the future, such as a ten years plus, can be subject to very large forecast errors.

SAN BERNARDINO COUNTY / INLAND EMPIRE ECONOMIC AND DEMOGRAPHIC TRENDS

In order to put population growth of the Mojave Water Agency regions in proper context, it is important to consider the broader San Bernardino and Inland Empire economy. The various regions of California experience population and economic growth differently, which in turn impacts sub-regional performance over time. The inland regions of California, for example, are expected to grow quite differently than coastal areas, and San Bernardino is no exception to this.

Historically, economic growth has been concentrated in the coastal regions of California, particularly in Southern California. This has resulted in the coastal regions of Los

Angeles, Orange, and San Diego counties becoming the major job centers in Southern California. With economic and employment growth concentrated along the coast, real estate prices, on both the residential and commercial sides of the market, remain higher in coastal counties. This has in turn resulted in inland areas having a considerable



affordability advantage, which has and will continue to attract residents and businesses to regions like the Inland Empire.

In recent years, we have already begun to see the Inland Empire region begin to separate itself from the major job centers along the coast. Total nonfarm employment growth in the Inland Empire has drastically outpaced its coastal neighbors. Since the beginning of 2012, the Inland Empire has seen year-over-year non-farm job growth average 3.8%, noticeably higher than Los Angeles County (2.5%), Orange County (2.8%), and San Diego County (2.7%).

Many workers in the coastal job centers choose to take advantage of more affordable housing in the Inland Empire region. According to the American Community Survey, 29.1% of workers age 16 and over in San Bernardino County in 2014 commuted outside of the County for work.

These commuters spend most of their wages locally, which in turn fosters “internal” driven economic growth. Indeed, consumer and business spending in San Bernardino County, as measured by taxable sales, has grown faster in recent years compared to its coastal neighbors. From 2009 to 2014 taxable sales in San Bernardino grew by 38.7% over the five-year period, faster than Los Angeles (31.0%), Orange (31.1%), and San Diego (32.6%) counties. During the first three quarters of 2015, growth has accelerated as taxable sales in San Bernardino County were 7.6% higher than the same year-to-date period the prior year, vastly outpacing the coastal counties.

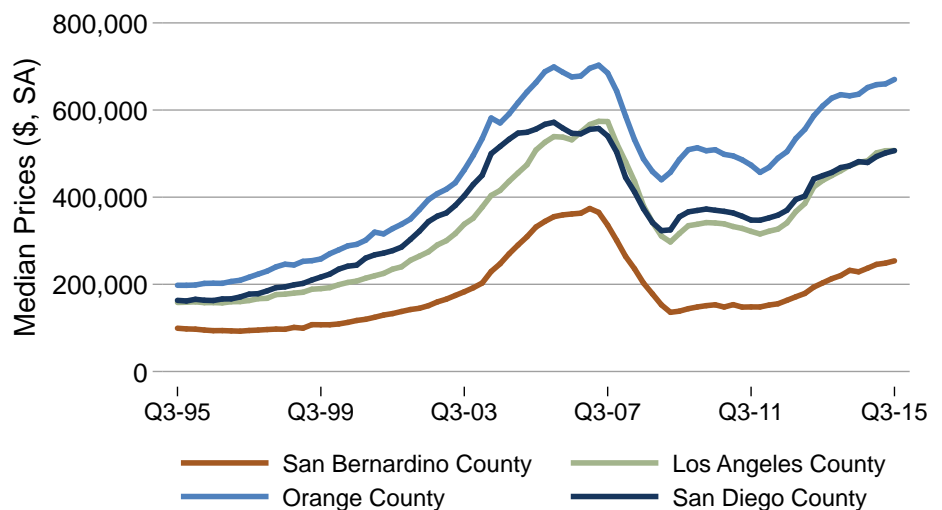
Home prices in San Bernardino County in particular present a stark example of just how affordable housing is in the County, relative to the coastal regions. As of the third quarter of 2015, the median price for an existing home in San Bernardino County stood at \$254,000 on a seasonally adjusted basis. In contrast, median prices in Los Angeles and San Diego counties were both \$507,000, double the median price in San Bernardino County. The price differential was even greater in Orange County where the median price was \$670,000 in the third quarter.

California Taxable Sales Growth (%)

County	2009 to 2014	2015 YTD
Los Angeles	31.0	4.0
Orange	31.1	2.3
San Bernardino	38.7	7.6
San Diego	32.6	3.6

Source: California Board of Equalization

Median Existing Home Prices Q3-95 to Q3-15



Source: DataQuick

On the commercial side of the market we see very similar affordability dynamics at work. For both office and retail properties, the average rent per square foot in the Inland Empire is more than 25% lower compared to the coastal counties. So not only does the

Inland empire region attract new residents through housing affordability, but businesses have an incentive to start up or relocate to the region as well.

The affordability advantage of the Inland Empire region, coupled with the strong post-recession growth of the region's economy, has succeeded in drawing residents to the region, even more than the coastal counties of Southern California. In fact, net migration to the Inland Empire has been greater than the coastal regions in both 2014 and 2015. In 2014 there were 14,256 more residents that moved into the Inland Empire than those that left the Inland Empire, and net migration was 9,418 in 2015. In contrast, Los Angeles County experienced negative net migration for both years (-4,183 in 2014; -3,651 in 2015), and both San Diego County (13,818 in 2014; 2,977 in 2015) and Orange County (6,697 in 2014; 5,128 in 2015) had lower net migration in absolute terms.

The higher net migration in the Inland Empire has resulted in faster rates of population growth in recent years compared to these coastal counties. The latest data from the California Department of Finance shows that the Inland Empire population increased 1% from July 2014 to July 2015, which had faster population growth than Los Angeles County (0.7%), Orange County (0.8%), and San Diego County (0.9%).

Looking forward, Beacon Economics expects these affordability advantages to continue to promote economic and population growth in the Inland Empire region. The Inland Empire is home to many commuters working in the coastal job centers, but they spend much of their wages locally. This in turn generates positive feedback within the region's economy and helps to promote further business and employment growth. Compared to the coastal regions of Southern California, the Inland Empire is expected to experience higher growth rates for the foreseeable future due to its affordability advantage, much like we have seen in the last few years.

MOJAVE WATER AGENCY POPULATION FORECAST

The service area of the MWA has vast potential for future growth over the next several decades. In much the same way that San Bernardino County and the broader Inland Empire region hold an affordability advantage over coastal counties, making the area more attractive to residents and businesses, the MWA area holds an affordability advantage within San Bernardino County. This will allow the population within the MWA service area to increase at a faster rate than the County overall for the life of this forecast.

Looking at median home prices in the incorporated parts of the MWA service area provides the clearest example of this affordability advantage. As of October 2015, all six of the incorporated cities within the MWA service areas have median home prices that are lower than the countywide median of \$260,000. Hesperia

California Commercial Rents (\$/Sq. Ft.)

Region	Office	Retail
Los Angeles County	35.12	31.24
Inland Empire	21.79	21.48
Orange County	30.07	32.25
San Diego County	30.61	30.13

Source: REIS

MWA Incorporated City Median Home Prices

City	Oct-2015 (\$)	YoY (%)
Adelanto	156,500	1.0
Apple Valley	189,000	-0.8
Barstow	76,750	-4.1
Hesperia	220,000	16.4
Victorville	185,000	5.0
Yucca Valley	142,500	10.5
San Bernardino County	260,000	7.0

Source: DataQuick

ria comes the closest with a median price of \$220,000, and Barstow is on the lower end of the spectrum with a median price of \$76,750.

The lower home prices in the incorporated cities within the MWA service areas indicate that demand for housing is currently not as strong as in other parts of the county, but as population grows in other cities this will drive up prices in those parts and the MWA areas will become that much more attractive. This is the same dynamic that has been at work for the larger Inland Empire region as coastal parts of Southern California become increasingly unaffordable.

Overall economic growth in the incorporated cities of the MWA service area, as measured by taxable sales, indicates that these cities have yet to transition towards the growth centers of San Bernardino County. Five-year growth trends show that most of the incorporated cities grew slower than the County overall. During the first three quarters of 2015, all six incorporated cities witnessed lower growth than the County overall compared to the same year-to-date period the year prior. In the coming years, we expect this trend to reverse as more residents choose to live in the more affordable areas within the MWA service area and these cities, as well as the unincorporated parts of the MWA area, and taxable sales growth in these regions overtakes the countywide average growth.

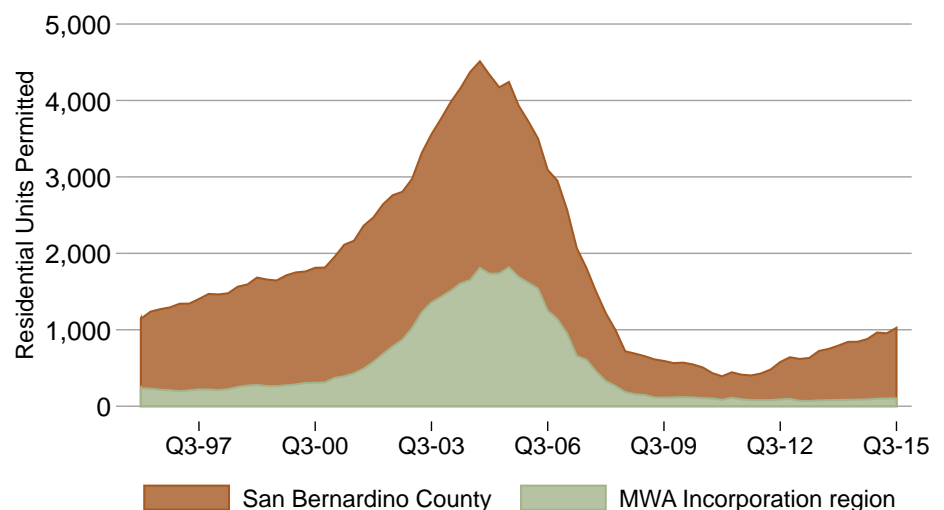
Residential construction is another area where the MWA service areas has lagged behind the rest of the County, however we expect this trend to reverse as well in the coming years. Since 2012, the incorporated region of the MWA service area has seen slower growth in permitting for new residential structures on an annual basis. For the first three quarters of 2015, however, residential permitting growth was slightly stronger in the MWA area. We should see more of that in the years to come as affordability continues to attract more residents and fuel population growth.

MWA Incorporated Taxable Sales Growth (%)

City	2009 to 2014	2015 YTD
Adelanto	40.1	-17.4
Apple Valley	15.8	-0.1
Barstow	31.2	-5.5
Hesperia	54.0	-1.1
Victorville	28.0	3.6
Yucca Valley	6.2	5.5
San Bernardino County	38.7	7.6

Source: California Board of Equalization

Residential Construction Permits Q1-96 to Q3-15



Source: Construction Industry Research Board

SUMMARY

The MWA service area is anticipated to experience population growth rates over the next several decades that are 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 advantage it holds over coastal counties of Southern California.

In similar fashion, 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 advantage relative to the broader region. The current data available for the incorporated cities of the MWA service area shows that the region has not yet transitioned to being one of the growth centers for San Bernardino County, but given its clear advantage in terms of home prices, Beacon Economics expects economic and population growth to pick up in the years to come and over the life of this forecast.

APPENDIX 1: MWA INCORPORATED CITY FORECASTS

Year	Adelanto	Apple Valley	Barstow	Hesperia	Victorville	Yucca Valley
1990	6,751	46,159	24,260	50,705	50,579	16,442
2000	17,895	54,240	22,699	62,740	64,165	16,855
2010	31,760	69,144	22,757	90,170	115,913	20,656
2011	31,609	69,484	23,010	90,539	117,239	20,727
2012	30,918	69,769	23,161	90,739	118,933	20,783
2013	31,178	70,261	23,340	91,221	120,388	20,922
2014	32,472	70,743	23,517	91,541	120,882	20,992
2015	33,080	71,453	23,661	92,302	121,568	21,317
2020	35,476	75,731	24,239	99,716	132,153	22,211
2025	38,453	81,566	24,858	108,659	147,364	23,395
2030	42,221	87,767	25,475	118,976	163,486	24,720
2035	46,311	93,862	26,059	129,739	179,396	26,028
2040	50,182	99,189	26,604	139,849	194,677	27,190
2045	53,560	103,816	27,122	148,888	209,137	28,189
2050	56,555	108,352	27,648	157,422	222,675	29,123
2055	59,573	112,685	28,163	165,674	235,240	30,012
2060	62,482	116,772	28,674	173,574	246,817	30,846
Forecast by Beacon Economics						

APPENDIX 2: 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	337,146	23,305	4,735	34,546	7,422	38,325	10,687
2012	339,478	22,909	4,739	34,774	7,454	38,414	10,743
2013	342,261	23,113	4,746	35,043	7,512	38,578	10,846
2014	343,913	23,957	4,753	35,308	7,568	38,734	10,945
2015	346,665	24,364	4,762	35,524	7,646	38,952	11,084
2020	371,356	26,132	4,812	36,393	8,073	40,140	11,844
2025	407,344	28,465	4,872	37,322	8,615	41,608	12,819
2030	449,520	31,413	4,933	38,248	9,196	43,140	13,880
2035	493,686	34,616	4,989	39,125	9,753	44,567	14,913
2040	535,002	37,663	5,036	39,943	10,244	45,791	15,835
2045	571,913	40,342	5,076	40,720	10,672	46,834	16,646
2050	607,027	42,744	5,112	41,510	11,086	47,827	17,440
2055	641,206	45,158	5,146	42,284	11,479	48,752	18,198
2060	674,042	47,489	5,177	43,050	11,851	49,613	18,922
Forecast by Beacon Economics							

APPENDIX 3: MWA WATER PURVEYOR FORECASTS

Year	Apple Valley Ranchos 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	58,132	3,891	31,609	9,163	9,609	30,479
2012	58,370	3,922	30,918	9,216	9,695	30,662
2013	58,781	3,981	31,178	9,314	9,855	30,878
2014	59,185	4,037	32,472	9,408	10,009	31,090
2015	59,779	4,116	33,080	9,541	10,227	31,261
2020	63,357	4,554	35,476	10,267	11,433	31,951
2025	68,240	5,135	38,453	11,205	13,049	32,684
2030	73,427	5,794	42,221	12,236	14,906	33,412
2035	78,526	6,463	46,311	13,246	16,811	34,096
2040	82,983	7,082	50,182	14,156	18,597	34,732
2045	86,854	7,644	53,560	14,961	20,233	35,333
2050	90,649	8,209	56,555	15,753	21,891	35,940
2055	94,274	8,763	59,573	16,514	23,528	36,533
2060	97,693	9,303	62,482	17,243	25,135	37,116
Forecast by Beacon Economics						

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	6,247	90,110	23,842	9,590	19,683	122,551
2012	6,287	90,308	23,906	9,624	19,841	122,821
2013	6,362	90,788	24,065	9,687	20,134	123,474
2014	6,434	91,106	24,147	9,746	20,416	123,907
2015	6,535	91,864	24,520	9,830	20,814	124,937
2020	7,090	99,242	25,548	10,287	23,009	139,151
2025	7,812	108,143	26,911	10,860	25,919	155,167
2030	8,613	118,411	28,435	11,469	29,219	172,144
2035	9,407	129,123	29,939	12,047	32,561	188,896
2040	10,127	139,185	31,276	12,551	35,655	204,986
2045	10,769	148,181	32,425	12,986	38,462	220,211
2050	11,406	156,675	33,499	13,406	41,283	234,466
2055	12,020	164,888	34,522	13,801	44,043	247,697
2060	12,612	172,750	35,481	14,172	46,735	259,887
Forecast by Beacon Economics						

ABOUT BEACON ECONOMICS

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Appendix E – AWWA Water Audit Software Results

Reporting Worksheet 1



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

American Water Works Association
Copyright © 2014, All Rights ReservedWater Audit Report for: **Spring Valley Lake / County Service Area 64 (3610121)**Reporting Year: **2015** **1/2015 - 12/2015******* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 71 out of 100 *****

System Attributes:

Apparent Losses:	11.255	acre-ft/yr
+ Real Losses:	387.920	acre-ft/yr
= Water Losses:	399.175	acre-ft/yr

? Unavoidable Annual Real Losses (UARL): 42.52 acre-ft/yr

Annual cost of Apparent Losses: \$4,903

Annual cost of Real Losses: Valued at **Customer Retail Unit Cost**
Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	17.4%	
		Non-revenue water as percent by cost of operating system:	5.4%	Real Losses valued at Customer Retail Unit Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	2.64	gallons/connection/day
		Real Losses per service connection per day:	90.87	gallons/connection/day
		Real Losses per length of main per day*:	N/A	
		Real Losses per service connection per day per psi pressure:	1.89	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 387.92 acre-feet/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: 9.12

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



AWWA Free Water Audit Software: User Comments

WAS v5.0

American Water Works Association
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Use this worksheet to add comments or notes to explain how an input value was calculated, or to document the sources of the information used.

General Comment:	
Audit Item	Comment
Volume from own sources:	Based on CSA 64 water production records for 2015.
Vol. from own sources: Master meter error adjustment:	
Water imported:	CSA 64 did not import any water to directly supply their customers.
Water imported: master meter error adjustment:	
Water exported:	CSA 64 did not export any potable water during the 2015 year.
Water exported: master meter error adjustment:	
Billed metered:	The billed metered consumption was based on records kept by CSA 64.
Billed unmetered:	CSA 64 did not deliver any water that was unmetered to the distribution system.
Unbilled metered:	

Audit Item	Comment
Unbilled unmetered:	
Unauthorized consumption:	
Customer metering inaccuracies:	
Systematic data handling errors:	
Length of mains:	The length of service mains was found by using the H2ONet program for the CSA 64 model.
Number of active AND inactive service connections:	The number of active service connections was determined by CSA 64 staff for the year 2015.
Average length of customer service line:	
Average operating pressure:	Obtained from the CSA 64 H2ONet model. Averaged the junction pressure found at all the nodes in the system.
Total annual cost of operating water system:	Obtained annual cost information from CSA 64 staff. Accounts for the Total Operating Cost for operating the system and the salary and benefit information obtained from the Fund-Department from San Bernardino Special Districts department.
Customer retail unit cost (applied to Apparent Losses):	The cost that the water customer must pay to receive water.
Variable production cost (applied to Real Losses):	



AWWA Free Water Audit Software: Water Balance

WAS v5.0

American Water Works Association

Water Audit Report for: Spring Valley Lake / County Service Area 64 (3610121)

Reporting Year: 2015

1/2015 - 12/2015

Data Validity Score: 71

Own Sources (Adjusted for known errors) 2,466.000	System Input 2,466.000	Water Exported 0.000	Billed Water Exported				Revenue Water 0.000
		Water Supplied 2,466.000	Authorized Consumption 2,066.825	Billed Authorized Consumption 2,036.000	Billed Metered Consumption (water exported is removed) 2,036.000	Revenue Water 2,036.000	
					Billed Unmetered Consumption 0.000		
				Unbilled Authorized Consumption 30.825	Unbilled Metered Consumption 0.000	Non-Revenue Water (NRW) 430.000	
					Unbilled Unmetered Consumption 30.825		
			Water Losses 399.175	Apparent Losses 11.255	Unauthorized Consumption 6.165	430.000	
					Customer Metering Inaccuracies 0.000		
					Systematic Data Handling Errors 5.090		
				Real Losses 387.920	Leakage on Transmission and/or Distribution Mains Not broken down		
		Leakage and Overflows at Utility's Storage Tanks Not broken down					
Leakage on Service Connections Not broken down							



AWWA Free Water Audit Software: Dashboard

WAS v5.0

American Water Works Association
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The graphic below is a visual representation of the Water Balance with bar heights proportional to the volume of the audit components

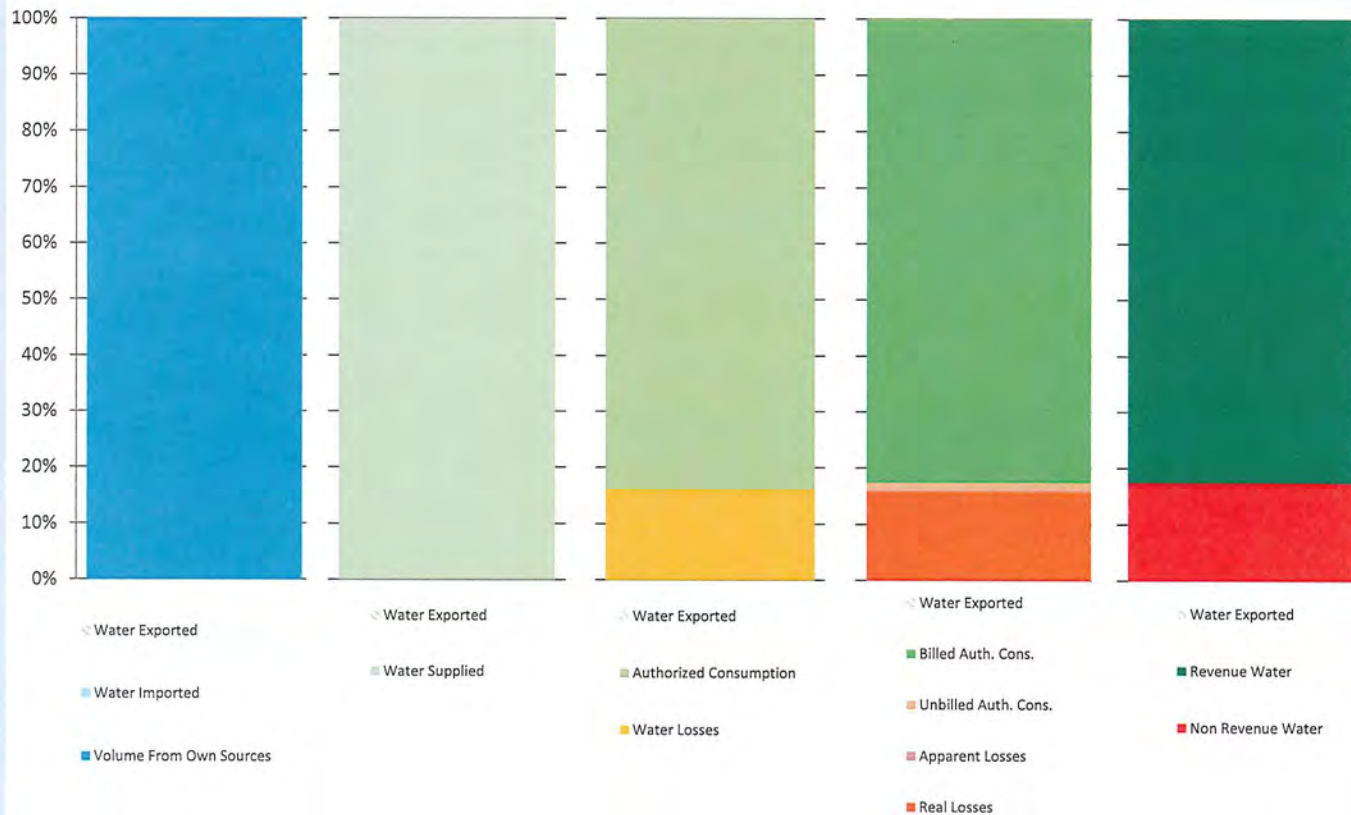
Water Audit Report for: **Spring Valley Lake / County Service Area 64 (3610121)**

Reporting Year: **2015** **1/2015 - 12/2015**

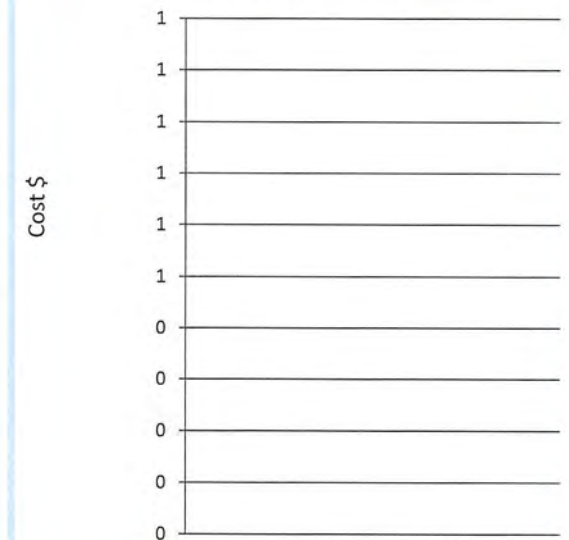
Data Validity Score: **71**

☐ Show me the VOLUME of Non-Revenue Water

☒ Show me the COST of Non-Revenue Water



Total Cost of NRW = \$



- Unbilled metered (valued at Cust.Ret.Unit Cost)
- Unbilled unmetered (valued at Cust.Ret.Unit Cost)
- Unauth. consumption
- Cust. metering inaccuracies
- Syst. data handling errors
- Real Losses (valued at Cust.Ret.Unit Cost)

Appendix F – SB X7-7 Verification Tables

SB X7-7 Table 0: Units of Measure Used in UWMP*

(select one from the drop down list)

Acre Feet

**The unit of measure must be consistent with Table 2-3*

NOTES: All water measurements completed in Acre Feet.

SB X7-7 Table-1: Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	3,476	Acre Feet
	2008 total volume of delivered recycled water	-	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period ^{1, 2}	10	Years
	Year beginning baseline period range	2001	
	Year ending baseline period range ³	2010	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2006	
	Year ending baseline period range ⁴	2010	

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

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

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

NOTES:

SB X7-7 Table 2: Method for Population Estimates

Method Used to Determine Population (may check more than one)	
<input type="checkbox"/>	1. Department of Finance (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	2. Persons-per-Connection Method
<input checked="" type="checkbox"/>	3. DWR Population Tool
<input type="checkbox"/>	4. Other DWR recommends pre-review
NOTES: Since the CSA 64 boundary does not fit into a census tract, the DWR Population Tool was used to estimate CSA 64 population.	

SB X7-7 Table 3: Service Area Population

Year		Population
10 to 15 Year Baseline Population		
Year 1	2001	
Year 2	2002	
Year 3	2003	
Year 4	2004	9,315
Year 5	2005	
Year 6	2006	9,639
Year 7	2007	6,474
Year 8	2008	9,399
Year 9	2009	9,524
Year 10	2010	9,543
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2006	9,639
Year 2	2007	9,474
Year 3	2008	9,399
Year 4	2009	9,524
Year 5	2010	9,543
2015 Compliance Year Population		
2015		9,239
NOTES: The Number of Connections was not available for years prior to 2004, and the 2005 data is also missing. Single Family Residential connection data was not recorded.		

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>	
10 to 15 Year Baseline - Gross Water Use							
Year 1	2001	3,542			-	-	3,542
Year 2	2002	3,775			-	-	3,775
Year 3	2003	3,652			-	-	3,652
Year 4	2004	3,785			-	-	3,785
Year 5	2005	3,498			-	-	3,498
Year 6	2006	3,734			-	-	3,734
Year 7	2007	3,764			-	-	3,764
Year 8	2008	3,476			-	-	3,476
Year 9	2009	3,433			-	-	3,433
Year 10	2010	3,247			-	-	3,247
Year 11	0	-			-	-	-
Year 12	0	-			-	-	-
Year 13	0	-			-	-	-
Year 14	0	-			-	-	-
Year 15	0	-			-	-	-
10 - 15 year baseline average gross water use							3,591
5 Year Baseline - Gross Water Use							
Year 1	2006	3,734			-	-	3,734
Year 2	2007	3,764			-	-	3,764
Year 3	2008	3,476			-	-	3,476
Year 4	2009	3,433			-	-	3,433
Year 5	2010	3,247			-	-	3,247
5 year baseline average gross water use							3,531
2015 Compliance Year - Gross Water Use							
2015	2,466	-			-	-	2,466
* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3							
NOTES:							

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source		Groundwater Free Production Allowance		
This water source is:				
<input checked="" 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	2001	3,058		3,058
Year 2	2002	3,058		3,058
Year 3	2003	2,867		2,867
Year 4	2004	2,676		2,676
Year 5	2005	2,485		2,485
Year 6	2006	2,294		2,294
Year 7	2007	2,294		2,294
Year 8	2008	2,294		2,294
Year 9	2009	2,294		2,294
Year 10	2010	2,294		2,294
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2006	2,294		2,294
Year 2	2007	2,294		2,294
Year 3	2008	2,294		2,294
Year 4	2009	2,294		2,294
Year 5	2010	2,294		2,294
2015 Compliance Year - Water into Distribution System				
2015		2,294		2,294
* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source		Imported Water (Above FPA)		
This water source is:				
<input type="checkbox"/>	The supplier's own water source			
<input checked="" 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	2001	484		484
Year 2	2002	717		717
Year 3	2003	785		785
Year 4	2004	1109		1,109
Year 5	2005	1013		1,013
Year 6	2006	1440		1,440
Year 7	2007	1470		1,470
Year 8	2008	1182		1,182
Year 9	2009	1139		1,139
Year 10	2010	953		953
Year 11	0			0
Year 12	0			0
Year 13	0			0
Year 14	0			0
Year 15	0			0
5 Year Baseline - Water into Distribution System				
Year 1	2006	1440		1,440
Year 2	2007	1470		1,470
Year 3	2008	1182		1,182
Year 4	2009	1139		1,139
Year 5	2010	953		953
2015 Compliance Year - Water into Distribution System				
2015		172		172
* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document				
NOTES:				

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)

Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	2001	-	3,542	
Year 2	2002	-	3,775	
Year 3	2003	-	3,652	
Year 4	2004	9,315	3,785	363
Year 5	2005	-	3,498	
Year 6	2006	9,639	3,734	346
Year 7	2007	6,474	3,764	519
Year 8	2008	9,399	3,476	330
Year 9	2009	9,524	3,433	322
Year 10	2010	9,543	3,247	304
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				364
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2006	9,639	3,734	346
Year 2	2007	9,474	3,764	355
Year 3	2008	9,399	3,476	330
Year 4	2009	9,524	3,433	322
Year 5	2010	9,543	3,247	304
5 Year Average Baseline GPCD				331
2015 Compliance Year GPCD				
2015		9,239	2,466	238
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day <i>Summary From Table SB X7-7 Table 5</i>	
10-15 Year Baseline GPCD	364
5 Year Baseline GPCD	331
2015 Compliance Year GPCD	238
NOTES: <div></div>	

SB X7-7 Table 7: 2020 Target Method		
<i>Select Only One</i>		
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:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	2020 Target GPCD
364	291
NOTES:	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target

5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target ¹	Calculated 2020 Target ²	Confirmed 2020 Target
331	315	291	291

¹ Maximum 2020 Target is 95% of the 5 Year Baseline GPCD except for suppliers at or below 100 GPCD.

² 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.

NOTES:

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
291	364	327
NOTES:		

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments <i>(in GPCD)</i>					2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Enter "0" if Adjustment Not Used			TOTAL Adjustments	Adjusted 2015 GPCD		
		Extraordinary Events	Weather Normalization	Economic Adjustment				
238	327	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	<i>From Methodology 8 (Optional)</i>	-	238	238	YES

NOTES:

Appendix G – Mojave Basin Area Judgement (1996)

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.

~~12/10/03~~
~~01/10/02~~
~~02/02/02~~
~~04/10/02~~
~~04/10/02~~
 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 ¹		BASE ANNUAL ²		FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
	PRODUCTION (ACRE-FEET)	RIGHT (PERCENT)	PRODUCTION (PERCENT)		FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH 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		
SUDHEIER, 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, HALTER	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.

~~12/16/92~~
~~01/30/93~~
~~03/03/93~~
~~04/14/93~~
~~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 CENTRO SUBAREA
 TOGETHER WITH FREE PRODUCTION ALLOWANCES
 FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-PEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-PEET)				
			FIRST	SECOND	THIRD	FOURTH	FIFTH
			YEAR	YEAR	YEAR	YEAR	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
AYDEEP, THOMAS	34	0.6600	34	32	30	28	27
ATZEC 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
BRONNER, HARVIN	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	0.6671	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	0.0882	50	47	45	42	40
GAINES, JACK	117	0.2065	117	111	105	99	93
GESYRBECH, WAYNE	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	131	124	117	110
GRIDER, RAYMOND H & DORISANNE	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & HILLIE 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	0.2681	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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SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF RIVERSIDE

CITY OF BARSTOW, et al,

Plaintiff,

v.

CITY OF ADELANTO, et al,

Defendant.

MOJAVE WATER AGENCY,

Cross-complainant,

v.

ANDERSON, RONALD H. et al,

Cross-defendants.

CASE NO. 208568

ASSIGNED TO JUDGE KAISER
DEPT. 4 FOR ALL PURPOSES

JUDGMENT AFTER TRIAL

TABLE OF CONTENTS

1	I. <u>INTRODUCTION</u>	1
2		
3	A. The Complaint.....	1
4	B. The MWA Cross-Complaint.....	1
5	C. The Arc Las Flores Cross-Complaint.....	2
6	D. Stipulation and Trial.....	2
7	II. <u>DECREE</u>	3
8	A. JURISDICTION, PARTIES, DEFINITIONS.....	3
9		
10	1. Jurisdiction and Parties.....	3
11	a. Jurisdiction.....	3
12	b. Parties.....	3
13	c. Minimal Producers.....	3
14	2. Physical and Legal Complexity.....	5
15	3. Need for a Declaration of Rights	
16	and Obligations and for Physical	
17	Solution.....	5
18	4. Definitions.....	7
19	a. Afton	7
20	b. Annual or Year	7
21	c. Aquaculture Water.....	7
22	d. Assessments.....	7
23	e. Barstow.....	7
24	f. Base Annual Production.....	7
25	g. Base Annual Production Right.....	8
26	h. Base Flow.....	8
27	i. Carry Over Right.....	8
28	j. Consumption or Consumptive Use.....	9
	k. Free Production Allowance.....	9
	l. Groundwater.....	9
	m. Harper Lake Basin.....	9
	n. Lower Narrows.....	9
	o. Makeup Water.....	9
	p. Makeup Obligation.....	9
	q. Minimal Producer.....	9
	r. Minimum Subarea Obligation.....	10
	s. Mojave Basin Area or Basin Area.....	10
	t. MWA.....	10
	u. Overdraft.....	10
	v. Party (Parties).....	10
	w. Person(s).....	11
	x. Produce.....	11
	y. Producer.....	11

1	z.	Production.....	11
	aa.	Production Safe Yield.....	11
2	bb.	Purpose of Use.....	11
	cc.	Recirculated Water.....	12
3	dd.	Replacement Obligation.....	12
	ee.	Replacement Water.....	12
4	ff.	Responsible Party.....	12
	gg.	Stored Water.....	12
5	hh.	Storm Flow.....	12
	ii.	Subareas.....	13
6	jj.	Subarea Obligation.....	13
	kk.	Subsurface Flow.....	13
7	ll.	Supplemental Water.....	13
	mm.	Transition Zone.....	13
8	nn.	Watermaster.....	13
9	5.	Exhibits.....	13
10	B.	DECLARATION OF HYDROLOGIC CONDITIONS.....	14
11	6.	Mojave Basin Area as Common Source of Supply.....	14
12	7.	Existence of Overdraft.....	14
13	C.	DECLARATION OF RIGHTS AND OBLIGATIONS.....	15
14	8.	Production Rights of the Parties.....	15
15	a.	Aquaculture.....	15
16	b.	Camp Cady.....	16
	c.	Recreational Lakes in Baja Subarea...	16
17	9.	MWA Obligation.....	17
18	a.	Secure Supplemental Water.....	17
	b.	Supplemental Water Prices.....	17
19	c.	Supplemental Water Deliver Plan.....	17
	d.	Water Delivery Cost Allocation.....	18
20	e.	Legislative Changes.....	19
	f.	Court Review and Determination of Benefit.....	19
21	10.	Priority and Determination of Production Rights.....	19
22	11.	Exercise of Carry Over Rights.....	21
23	12.	Production Only Pursuant to Judgment.....	21
24	13.	Declaration of Subarea Rights and Obligations.....	21
25	III.	<u>INJUNCTION</u>	22
26	14.	Injunction Against Unauthorized Production.....	22
27			
28			

1	15. Injunction Re Change in Purpose of Use Without Notice Thereof to Watermaster.....	23
2	16. Injunction Against Unauthorized Recharge.....	23
3	17. Injunction Against Transportation from Mojave Basin Area.....	23
4	18. Injunction Against Diverting Storm Flows.....	23
5	IV. <u>CONTINUING JURISDICTION</u>	24
6	19. Jurisdiction Reserved.....	24
7	V. <u>PHYSICAL SOLUTION</u>	24
8	A. GENERAL.....	24
9	20. Purpose and Objective.....	24
10	21. Need for Flexibility.....	25
11	22. General Pattern of Operations.....	25
12	B. ADMINISTRATION.....	26
13	23. Administration by Watermaster.....	26
14	(a) Standard of Performance	27
15	(b) Removal of Watermaster	27
16	(c) MWA Appointed as Initial Watermaster.....	27
17	24. Powers and Duties.....	28
18	(a) Rules and Regulations.....	28
19	(b) Employment of Experts and Agents.....	28
20	(c) Makeup and Replacement Obligations...	29
21	(d) Measuring Devices, etc.....	29
22	(e) Hydrologic Data Collection.....	29
23	(f) Assessments.....	29
24	(g) Purchase of and Recharge with Supplemental Water.....	30
25	(h) Water Quality.....	30
26	(i) Notice List.....	30
27	(j) Annual Administrative Budget.....	30
28	(k) Annual Report to Court.....	30
	(l) Investment of Funds.....	32
	(m) Borrowing.....	32
	(n) Transfers.....	32
	(o) Free Production Allowance.....	32
	(p) Production Reports.....	32
	(q) Production Adjustment for Change in Purpose of Use.....	33

1	(r)	Reallocation of Base Annual	
		Production Rights.....	34
2	(s)	Storage Agreements.....	34
3	(t)	Subarea Advisory Committee	
		Meetings.....	34
4	(u)	Unauthorized Production.....	35
	(v)	Meetings and Records.....	35
5	(w)	Data, Estimates and Procedures.....	35
	(x)	Biological Resource Mitigation.....	35
6	C.	ASSESSMENTS.....	36
7	25.	Purpose.....	36
8	(a)	Administrative Assessments.....	36
9	(b)	Replacement Water Assessments.....	36
10	(c)	Makeup Water Assessments.....	36
11	(d)	Biological Resource Assessment.....	36
12	(e)	MWA Assessment of Minimal Producers..	37
13	26.	Procedure.....	37
14	27.	Availability of Supplemental Water.....	38
15	28.	Use of Replacement Water Assessment	
16		Proceeds and Makeup Water Assessment	
17		Proceeds.....	39
18	29.	MWA Annual Report to the Watermaster.....	39
19	D.	SUBAREA ADVISORY COMMITTEES.....	40
20	30.	Authorization.....	40
21	31.	Composition and Election.....	40
22	32.	Compensation.....	41
23	33.	Powers and Functions.....	41
24	E.	TRANSFERABILITY.....	41
25	34.	Assignment, Transfer, etc. of Rights.....	41
26	F.	MISCELLANEOUS PROVISIONS.....	41
27	35.	Water Quality	41
28	36.	Review Procedures.....	41
	(a)	Effective Date of Watermaster Action.	41
	(b)	Notice of Motion.....	42
	(c)	Time for Motion.....	42
	(d)	De Novo Nature of Proceeding.....	42
	(e)	Decision.....	43
	(f)	Payment of Assessments.....	43

1	37. Designation of Address for Notice	
2	and Service.....	43
3	38. Service of Documents.....	44
4	39. No Abandonment of Rights.....	44
5	40. Intervention After Judgment.....	44
6	41. Recordation of Notice.....	45
7	42. Judgment Binding on Successors, etc.....	45
8	43. Costs.....	45
9	44. Entry of Judgment.....	45

10 Exhibit "A" - Map entitled, "Map showing Mojave Water
11 Agency, Mojave River, Mojave Basin Area and Hydrologic Subareas and
12 Limits of Adjudicated Area Together with Geologic and Other
Pertinent Features."

13 Exhibit "B" - Tables entitled, "Table B-1: Table Showing
14 Base Annual Production, Base Annual Production Right of Each
15 Producer Within Each Subarea, and Free Production Allowance for
16 Subareas for First Five Years of the Judgment" and "Table B-2:
17 Table Showing Total Water Production for Aquaculture and
18 Recreational Lake Purposes."

19 Exhibit "C" - Engineering Appendix.

20 Exhibit "D" - Time Schedules.

21 Exhibit "E" - List of Producers and Their Designees.

22 Exhibit "F" - Transfers of Base Annual Production Rights.

23 Exhibit "G" - Subarea Obligations.

24 Exhibit "H" - Biological Resource Mitigation.

25 Exhibit "I" - Map Showing Potential Groundwater Recharge
26 Areas

27

28

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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- 1 cc. Recirculated Water - Water that is Produced but not
2 consumed by the Parties listed in Table B-2 of
3 Exhibit "B" and then returned either to the Mojave
4 River or to the Groundwater basin underlying the
5 place of use.
- 6 dd. Replacement Obligation - The obligation of a
7 Producer to pay for Replacement Water for
8 Production from a Subarea in any Year in excess of
9 the sum of such Producer's share of that Year's
10 Free Production Allowance for the Subarea plus any
11 Production pursuant to a Carry Over Right.
- 12 ee. Replacement Water - Water purchased by Watermaster
13 or otherwise provided to satisfy a Replacement
14 Obligation.
- 15 ff. Responsible Party - The Person designated by a
16 Party as the Person responsible for purposes of
17 filing reports and receiving notices pursuant to
18 the provisions of this Judgment.
- 19 gg. Stored Water - Water held in storage pursuant to a
20 Storage Agreement with Watermaster.
- 21 hh. Storm Flow - That portion of the total surface flow
22 originating from precipitation and runoff without
23 having first percolated to Groundwater storage in
24 the zone of saturation and passing a particular
25 point of reckoning, as determined annually by the
26 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.

28 ///

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.

1 IV. CONTINUING JURISDICTION

2 19. Jurisdiction Reserved. Full jurisdiction, power and
3 authority are retained by and reserved to the Court for purposes of
4 enabling the Court upon the application of any Party, by a motion
5 noticed in accordance with the notice procedures of Paragraph 36
6 hereof, to make such further or supplemental order or directions as
7 may be necessary or appropriate for interim operation before the
8 Physical Solution is fully operative, or for interpretation,
9 enforcement or carrying out of this Judgement, and to modify, amend
10 or amplify any of the provisions of this Judgment or to add to the
11 provisions thereof consistent with the rights herein decreed;
12 provided, that nothing in this paragraph shall authorize either a
13 reduction of the Base Annual Production Right of any Party, except
14 in accordance with the rules set forth in Exhibit "F", or a
15 reduction of the Base Flow portion of any Subarea Obligation.

16
17 V. Physical Solution

18 A. GENERAL

19 20. Purpose and Objective. The Court hereby declares
20 and decrees that the Physical Solution herein contained: 1) is a
21 fair and equitable basis for satisfaction of all water rights in
22 the Mojave Basin Area; 2) is in furtherance of the mandate of the
23 State Constitution and the water policy of the State of California;
24 and 3) takes into account applicable public trust interests; and
25 therefore adopts and orders the Parties to comply with the Physical
26 Solution. As noted in Paragraph 3 of this Judgment, the
27 declaration of rights and obligations of the Parties and Subareas
28 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

percentages of the aggregate Base Annual Production for that Subarea:

	<u>Judgment Year</u>	<u>Percentage</u>
1993-1994	First Full Year	100
1994-1995	Second Full Year	95
1995-1996	Third Full Year	90
1996-1997	Fourth Full Year	85
1997-1998	Fifth Full Year	80

The extent of Overdraft now varies between Subareas and the reasonableness of any physical solution as applied to each Producer depends in part upon such Producer's foreseeable needs and the present and future availability of water within the Subarea in which each Producer is located. The Physical Solution described in this Judgment in part generally contemplates (i) initially allowing significant unassessed production on a substantially uniform basis for all Producers and Subareas and (ii) a phasing in of the monetary obligations necessary to obtain Supplemental Water. The above two provisions will affect each Subarea differently, may not be sufficient to ultimately eliminate the condition of Overdraft in each Subarea and could result in increased Overdraft within a Subarea. Any adverse impact to any Subarea caused by the implementation of the provisions shall be the responsibility of the Producers in each such Subarea.

B. ADMINISTRATION.

23. Administration by Watermaster. Watermaster shall administer and enforce the provisions of the Judgment and any subsequent instructions or orders of this Court.

///

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 Judgement 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.

28 ///

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.

28 ///

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.

28 ///

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

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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 1 PRODUCTION (ACRE-FEET)		BASE ANNUAL 2 PRODUCTION (PERCENT)		FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
					FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
ABSHIRE, DAVID V	24	0.1093	24	22	21	20	20	19	19
ANDERSON, ROSS C & BETTY J	34	0.1548	34	32	30	28	28	27	27
BAR H MUTUAL WATER COMPANY	53	0.2414	53	50	47	45	45	42	42
BELL, CHUCK	494	2.2497	494	469	444	419	419	395	395
BURNS, BOBBY J & EVELYN J	1,300	5.9204	1,300	1,235	1,170	1,105	1,040	1,040	1,040
CASA COLINA FOUNDATION	90	0.4099	90	85	81	76	76	72	72
CENTER WATER CO	40	0.1822	40	38	36	34	34	32	32
CLUB VIEW PARTNERS	1,276	5.8111	1,276	1,212	1,148	1,084	1,020	1,020	1,020
CROSS, LAWRENCE B	23	0.1047	23	21	20	19	19	18	18
CRYSTAL HILLS WATER COMPANY	194	0.8835	194	184	174	164	155	155	155
DAHLQUIST, GEORGE R	594	2.7052	594	564	534	504	475	475	475
DELPERDANG, ROBERT H	56	0.2550	56	53	50	47	44	44	44
DESERT DAWN MUTUAL WATER COMPANY	15	0.0683	15	14	13	12	12	12	12
GAETA, TRINIDAD	512	2.3317	512	486	460	435	409	409	409
GAYUKIAN, SAMUEL & HAZEL	102	0.4645	102	96	91	86	81	81	81
GRACETOWN INVESTMENT CO - JETCO PROP FUND	752	3.4247	752	714	676	639	601	601	601
GUELER, HANS	30	0.1366	30	28	27	25	24	24	24
HAL-DOR LTD	23	0.1047	23	21	20	19	18	18	18
HANDLEY, DON R & MARY ANN	73	0.3325	73	69	65	62	58	58	58
HART, MERRILL W	473	2.1541	473	449	425	402	378	378	378
HERT, SCOTT	276	1.2569	276	262	248	234	220	220	220
HI-GRADE MATERIALS	442	2.0129	442	419	397	375	353	353	353
HITCHIN LUCERNE, INC	16	0.0729	16	15	14	13	12	12	12
JAMS RANCH	28	0.1275	28	26	25	23	22	22	22

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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 ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH 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, CHAMHO	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
PLAUSS-STAUPEL 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 1 PRODUCTION (ACRE-FOOT)		BASE ANNUAL 2 PRODUCTION RIGHT (PERCENT)		FREE PRODUCTION ALLOWANCES (ACRE-FOOT)									
					FIRST YEAR		SECOND YEAR		THIRD YEAR		FOURTH YEAR		FIFTH YEAR	
SPILLMAN, JAMES R & NANCY J	23	0.1047	23	0.1047	23	21	21	20	19	18				
STENART WATER COMPANY	54	0.2459	54	0.2459	54	51	51	48	45	43				
STRINGER, W EDWARD	573	2.6095	573	2.6095	573	544	544	515	487	458				
THE CUSHENBURY TRUST, C/O SPECIALTY MINERALS, INC	10	0.0455	10	0.0455	10	9	9	9	8	8				
TURNER, LOYD & CAROL	77	0.3507	77	0.3507	77	73	73	69	65	61				
VISOSEKY, JOSEPH P JR	1,120	5.1006	1,120	5.1006	1,120	1,064	1,064	1,008	952	896				
WEISER, SIDNEY & RAQUEL	90	0.4099	90	0.4099	90	85	85	81	76	72				
WILLOW WELLS MUTUAL WATER COMPANY	30	0.1366	30	0.1366	30	28	28	27	25	24				

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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 ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH 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 =	21,950	100					

- 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.
- Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 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 ORSTE SUBAREA
 TOGETHER WITH FREE PRODUCTION ALLOWANCES
 FOR FIRST FIVE YEARS OF THE JUDGMENT

ORSTE SUBAREA PRODUCER	BASE ANNUAL ¹		BASE ANNUAL ²		FREE PRODUCTION ALLOWANCES (ACRE-FRET)									
	PRODUCTION (ACRE-FRET)	RIGHT (PERCENT)	PRODUCTION (PERCENT)	RIGHT (PERCENT)	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
ABROCHEN, INC	660	5.3645	660	5.3645	660	627	594	561	528					
BROWN, DOUG & SUE	46	0.3729	46	0.3729	46	43	41	39	36					
CHEMISAL MUTUAL	96	0.7803	96	0.7803	96	91	86	81	76					
DAVIS, PAUL	19	0.1544	19	0.1544	19	18	17	16	15					
DOSSEY, D A	14	0.1138	14	0.1138	14	13	12	11	11					
MEADOWBROOK DAIRY	2,335	18.9791	2,335	18.9791	2,335	2,218	2,101	1,984	1,868					
RESSEGUIE, JOHN & BILL	259	2.1052	259	2.1052	259	246	233	220	207					
SAN BERNARDINO CO SERVICE AREA 700	110	0.8941	110	0.8941	110	104	99	93	88					
SAN BERNARDINO CO SERVICE AREA 701	1,306	10.6153	1,306	10.6153	1,306	1,240	1,175	1,110	1,044					
THORSON, ROBERT P & A KATHLEEN	40	0.3251	40	0.3251	40	38	36	34	32					
TROEGER, RICHARD H	112	0.9103	112	0.9103	112	106	100	95	89					
VAN DAM BROTHERS	1,860	15.1183	1,860	15.1183	1,860	1,767	1,674	1,581	1,488					

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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 PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH 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					

- 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.
- Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- Values based on production ramp down of five percent (5t) per year. Free Production Allowance for the fifth year is equal to eighty percent (80t) 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 PRODUCTION (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH 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	1,494	1,415	1,337	1,258	1,179
ADELANTO, CITY OF - GEORGE A P B	3,433	2.8055	3,433	3,261	3,089	2,918	2,746
ADCON, 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
CARDOSO, MANUEL & MARIA	909	0.7429	909	863	818	772	727

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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 ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
				FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
CDPG - MOJAVE NARROWS REGIONAL PARK		2,107	1.7219	2,107	2,001	1,896	1,790	1,685
CDPG - MOJAVE RIVER FISH HATCHERY		20	0.0163	20	19	18	17	16
CLARK, KENNETH R		223	0.1822	223	211	200	189	178
CLARK VIEW FARMS		501	0.4094	501	475	450	425	400
COPPLAND, 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
GOMEZ, 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
HLENDALE 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 ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH 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	3,568	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
LENHART, 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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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 ¹		BASE ANNUAL ²		FREE PRODUCTION ALLOWANCES (ACRE-FHEFT)				
	PRODUCTION (ACRE-FHEFT)	RIGHT (PERCENT)	PRODUCTION	RIGHT (PERCENT)	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH 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
MUNN, DONALD & PEARL	66	0.0539			66	62	59	56	52
O'BRYANT, ROBERT C & BARBARA	107	0.0874			107	101	96	90	85
ORMEY, 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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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 ¹		BASE ANNUAL ²		FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
	PRODUCTION (ACRE-FEET)	RIGHT (PERCENT)	PRODUCTION (PERCENT)	RIGHT (PERCENT)	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
SAN BERNARDINO CO SERVICE AREA 70J	1,005	0.8213	1,005	0.8213	1,005	954	904	854	804
SAN BERNARDINO CO SERVICE AREA 70L	355	0.2901	355	0.2901	355	337	319	301	284
SAN FILIPPO, JOSEPH & SHELLEY	35	0.0286	35	0.0286	35	33	31	29	28
SILVER LAKES ASSOCIATION	3,987	3.2583	3,987	3.2583	3,987	3,787	3,588	3,388	3,189
SOUTHDOWN, INC	1,519	1.2414	1,519	1.2414	1,519	1,443	1,367	1,291	1,215
SOUTHERN CALIFORNIA WATER COMPANY	940	0.7682	940	0.7682	940	893	846	799	752
SPRING VALLEY LAKE ASSOCIATION	3,056	2.4974	3,056	2.4974	3,056	2,903	2,750	2,597	2,444
SPRING VALLEY LAKE COUNTRY CLUB	977	0.7984	977	0.7984	977	928	879	830	781
STORCK, RANDALL	62	0.0507	62	0.0507	62	58	55	52	49
SUDMEIER, GLENN W	121	0.0989	121	0.0989	121	114	108	102	96
SUMMIT VALLEY RANCH	452	0.3694	452	0.3694	452	429	406	384	361
TATRO, RICHARD K & SANDRA A	280	0.2288	280	0.2288	280	266	252	238	224
TATUM, JAMES B	829	0.6775	829	0.6775	829	787	746	704	663
TAYLOR, ALLEN C / HAYMAKER RANCH	456	0.3727	456	0.3727	456	433	410	387	364
THOMAS, S DALE	440	0.3596	440	0.3596	440	418	396	374	352
THOMAS, WALTER	36	0.0294	36	0.0294	36	34	32	30	28
THOMPSON, JAMES A	418	0.3416	418	0.3416	418	397	376	355	334
THOMPSON, ROGER	76	0.0621	76	0.0621	76	72	68	64	60
THRASHER, GARY	373	0.3048	373	0.3048	373	354	335	317	298
THUNDERBIRD COUNTY WATER DISTRICT	118	0.0964	118	0.0964	118	112	106	100	94
TURNER, ROBERT	70	0.0572	70	0.0572	70	66	63	59	56
VAIL, JOSEPH B & PAULA B	126	0.1030	126	0.1030	126	119	113	107	100
VAN BURGER, CARL	710	0.5802	710	0.5802	710	674	639	603	568
VAN LEEUWEN FAMILY TRUST	341	0.2787	341	0.2787	341	323	306	289	272

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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 ¹		BASE ANNUAL ²		FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
	PRODUCTION (ACRE-FEET)	RIGHT (PERCENT)	PRODUCTION (PERCENT)	RIGHT (PERCENT)	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
VANNI, MIKE	54	0.0441	54	0.0441	54	51	48	45	43
VICTOR VALLEY COMMUNITY COLLEGE DIST	240	0.1961	240	0.1961	240	228	216	204	192
VICTOR VALLEY WATER DISTRICT	13,354	10.9133	13,354	10.9133	13,354	12,686	12,018	11,350	10,683
VICTORVILLE, CITY OF	12	0.0098	12	0.0098	12	11	10	10	9
VOGLER, ALBERT H	132	0.1079	132	0.1079	132	125	118	112	105
WACKERN, CAESAR	1,635	1.3362	1,635	1.3362	1,635	1,553	1,471	1,389	1,308
WAKULA, JOHN	291	0.2378	291	0.2378	291	276	261	247	232
WARD, KEN & BARBARA	65	0.0531	65	0.0531	65	61	58	55	52
WEBER, DAVE	80	0.0654	80	0.0654	80	76	72	68	64
WEST, CAROLYN & SMITH, RICHARD	24	0.0196	24	0.0196	24	22	21	20	19
WEST, HOWARD & SUZY	72	0.0588	72	0.0588	72	68	64	61	57
WHITTINGHAM, RICHARD V	15	0.0123	15	0.0123	15	14	13	12	12
YEAGER, E L - CONSTRUCTION COMPANY INC	34	0.0278	34	0.0278	34	32	30	28	27

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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 ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH 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					

- 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.
- Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 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 CENTRO SUBAREA
 TOGETHER WITH FREE PRODUCTION ALLOWANCES
 FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA PRODUCER	BASE ANNUAL ¹		BASE ANNUAL ²		FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
	PRODUCTION (ACRE-FEET)	RIGHT (PERCENT)	PRODUCTION (PERCENT)	RIGHT (PERCENT)	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
AGCON, INC	0	0.0000	0	0.0000	0	0	0	0	0
AGUAYO, JEANETTE L	212	0.3742	212	0.3742	212	201	190	180	169
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	120	0.2118	120	0.2118	120	114	108	102	96
AVDESF, THOMAS	34	0.0600	34	0.0600	34	32	30	28	27
AZTEC FARM DEVELOPMENT COMPANY	220	0.3883	220	0.3883	220	209	198	187	176
BARNES, FAY - EXECUTOR OF ESTATE OF WAYNE BARNES	243	0.4289	243	0.4289	243	230	218	206	194
BROWNER, HARVIN	361	0.6372	361	0.6372	361	342	324	306	288
BURNS, RITA J & PAMELA E	16	0.0282	16	0.0282	16	15	14	13	12
CHAFRA, LARRY R	96	0.1694	96	0.1694	96	91	86	81	76
CHOI, YONG IL & JOUNG AE	38	0.0671	38	0.0671	38	36	34	32	30
CHRISTISON, JOEL	75	0.1324	75	0.1324	75	71	67	63	60
COOK, KWON W	169	0.2983	169	0.2983	169	160	152	143	135
DE VRIES, NEIL	3,800	6.7070	3,800	6.7070	3,800	3,610	3,420	3,230	3,040
DESERT COMMUNITY BANK	156	0.2753	156	0.2753	156	148	140	132	124
DURAN, FRANK T	50	0.0883	50	0.0883	50	47	45	42	40
GAINES, JACK	117	0.2065	117	0.2065	117	111	105	99	93
GESTREICH, WAYNE	121	0.2136	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	0.2436	138	131	124	117	110
GRIEDER, RAYMOND H & DORISANNE	30	0.0530	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & WILLIE D	21	0.0371	21	0.0371	21	19	18	17	16
GROHN, CORNELIS	1,043	1.8409	1,043	1.8409	1,043	990	938	886	834
HANIFY, DBA - WHITE BEAR RANCH	152	0.2683	152	0.2683	152	144	136	129	121
HARNSSEN, JAMES & RUTH ANN	1,522	2.6863	1,522	2.6863	1,522	1,445	1,369	1,293	1,217
HARPER LAKE COMPANY	1,433	2.5293	1,433	2.5293	1,433	1,361	1,289	1,218	1,146

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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 ¹		BASE ANNUAL ²		FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
	PRODUCTION (ACRE-FEET)	RIGHT (PERCENT)	PRODUCTION (PERCENT)	RIGHT (PERCENT)	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
HI DESERT MUTUAL WATER CO	34	0.0600	34	0.0600	34	32	30	28	27
HILSMAN, KATHERINE	19	0.0335	19	0.0335	19	18	17	16	15
HILL, MELVIN	2,335	4.1213	2,335	4.1213	2,335	2,218	2,101	1,984	1,868
HOY, MIKE	632	1.1155	632	1.1155	632	600	568	537	505
JORDAN, RAYMOND	460	0.8119	460	0.8119	460	437	414	391	368
JUSTICE, CHRIS	421	0.7431	421	0.7431	421	399	378	357	336
KING, GENEVIEVE E	69	0.1218	69	0.1218	69	65	62	58	55
LEE, SEPOONG ETAL & WOO FOONG	77	0.1359	77	0.1359	77	73	69	65	61
LEYERLY, GENEVA	65	0.1147	65	0.1147	65	61	58	55	52
LEYERLY, RICHARD	862	1.5214	862	1.5214	862	818	775	732	689
LUDWINGTON, JAMES E & JO ANN	58	0.1024	58	0.1024	58	55	52	49	46
LYON, LOUIS & BRIKA	130	0.2295	130	0.2295	130	123	117	110	104
MARTIN, LENDRELL	14	0.0247	14	0.0247	14	13	12	11	11
MCCOLLUM, CHARLES L	347	0.6125	347	0.6125	347	329	312	294	277
MEAD, G C	90	0.1589	90	0.1589	90	85	81	76	72
MEYERS, LONNIE	27	0.0477	27	0.0477	27	25	24	22	21
MITCHELL, CHARLES A	201	0.3548	201	0.3548	201	190	180	170	160
NOFFITT, THOMAS R & EDITH I	62	0.1094	62	0.1094	62	58	55	52	49
MOST, MILTON W	9,660	17.0500	9,660	17.0500	9,660	9,177	8,694	8,211	7,728
NELSON, MILDRED L	52	0.0918	52	0.0918	52	49	46	44	41
NEWBERRY SPRINGS COMPANY, INC	2,489	4.3931	2,489	4.3931	2,489	2,364	2,240	2,115	1,991
OHAI, REYNOLDS & DOROTHY	137	0.2418	137	0.2418	137	130	123	116	109
OROPEZA, JOSE M	190	0.3354	190	0.3354	190	180	171	161	152
OSTERKAMP, GEROLD	260	0.4589	260	0.4589	260	247	234	221	208

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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 1		BASE ANNUAL 2		FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
	PRODUCTION (ACRE-FEET)		PRODUCTION RIGHT (PERCENT)		FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
OWL ROCK PRODUCTS COMPANY	466		0.8225		466	442	419	396	372
PG & E	1,657		2.9246		1,657	1,574	1,491	1,408	1,325
REDDY, BONMI 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
TILLENA, HAROLD	874		1.5426		874	830	786	742	699
VAN DAM, ELBERT & SUSAN	722		1.2743		722	685	649	613	577
VAN LERUWEN, 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
VANHOY, 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 HARMSEN DAIRY	1,000		1.7650		1,000	950	900	850	800

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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 1 PRODUCTION (ACRE-FEET)	BASE ANNUAL 2 PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND 3 YEAR	THIRD 3 YEAR	FOURTH 3 YEAR	FIFTH 3 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 ¹ PRODUCTION (ACRE-FEET)		BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)		FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
					FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
AKE, CHARLES J & MARJORIE M	23	0.0333	23	21	20	19	18		
ANGERSER, ROBERT J & PEGGY	24	0.0247	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, TOPSKA, SANTA FE RAILWAY CO	80	0.1158	80	76	72	68	64		
BAGLEY, ROY	20	0.0289	20	19	18	17	16		
BALDERAMA, ALFRED & LINDA	250	0.1619	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		
BRIDGFIELD, LYNDELL & 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		
BOHMAN, EDWIN L	31	0.0449	31	29	27	26	24		
BROWN, RONALD A	1,080	1.5632	1,080	1,026	972	918	864		
BROWN, 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 1 PRODUCTION (ACRE-FEET)	BASE ANNUAL 2 PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
CHANG, TIMOTHY & JANE	18	0.0261	18	17	16	15	14
CHASTAIN, M C	100	0.1447	100	95	90	85	80
CHRYSTEN LAKE, INC	122	0.1766	122	115	109	103	97
CHIAO WEI 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	1,555	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
EYKMANIAN, JAMES H	110	0.1592	110	104	99	93	88
FANCETT, EDWARD C	20	0.0289	20	19	18	17	16
FELIX, ALAN E & CAROL L	16	0.0521	16	14	13	12	11
FERRO, 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 ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
				FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH 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, WHILDYN & 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 B & BECKY J		47	0.0680	47	44	42	39	37
HARRISON, 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	85	80	76	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 P		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 SUBAREA
 TOGETHER WITH FREE PRODUCTION ALLOWANCES
 FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA	PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
				FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH 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 & MARCELINE		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
KIN, 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
LEE, MOON & OKBEA		49	0.0709	49	46	44	41	39
LEE, 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 ¹ PRODUCTION (ACRE-PEET)		BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)		FREE PRODUCTION ALLOWANCES (ACRE-PEET)				
					FIRST	SECOND	THIRD	FOURTH	FIFTH
					YEAR	YEAR	YEAR	YEAR	YEAR
MAHJOURI, APSAR S	63	0.0912	59	56	53	50			
HALIN, LILY	54	0.0782	51	48	45	43			
MALONEY, JANICE	36	0.0521	34	32	30	28			
MARCROFT, JAMES A & JOAN	38	0.0550	36	34	32	30			
MARSHALL, CHARLES	20	0.0289	19	18	17	16			
MAYBERRY, DONALD J	41	0.0593	38	36	34	32			
MILBRAT, IRVING	73	0.1057	69	65	62	58			
MITCHELL, CHARLOTTE	115	0.1665	109	103	97	92			
MITCHELL, JAMES L & CHERYL A	155	0.2244	147	139	131	124			
MOORE, WAYNE G & JULIA H	103	0.1491	97	92	87	82			
MORRIS, KARL	304	0.4400	288	273	258	243			
MULLIGAN, ROBERT & INEZ	35	0.0507	33	31	29	28			
NEWBERRY COMMUNITY SERVICE DIST	23	0.0133	21	20	19	18			
HU VIEW DEVELOPMENT, INC	2,839	4.1962	2,754	2,609	2,464	2,319			
O P D L INC	109	0.1578	103	98	92	87			
O'KEEFE, SARAH-LEE & JOKE E	50	0.0724	47	45	42	40			
P & H ENGINEERING & DEV CORP	667	0.9654	633	600	566	533			
PARKER, GEORGE R	144	0.2084	136	129	122	115			
PATHFINDER INVESTORS	472	0.6832	448	424	401	377			
PAYAN, PAUL	32	0.0463	30	28	27	25			
PERKO, BERT K	132	0.1911	125	118	112	105			
FITTS, JOE	30	0.0434	28	27	25	24			
POHL, ANDREAS & CATHLYN	17	0.0246	16	15	14	13			
POLAND, JOHN R & SANDRA M	92	0.1332	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 ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
				FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
PRICE, ALAN E		37	0.0536	37	36	33	31	29
PRICE, DONALD		42	0.0608	42	39	37	35	33
FUCKHABER, 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 & DYANA		24	0.0347	24	22	21	20	19
RINGER, WALTER M		62	0.0897	62	58	55	52	49
RIKUU 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, KYRL 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 ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST	SECOND	THIRD	FOURTH	FIFTH
			YEAR	YEAR	YEAR	YEAR	YEAR
ST ANTHONY COPTIC ORTHODOX MONASTERY	130	0.1882	130	123	117	110	104
STENHART, STANLEY & PATRICIA	27	0.0391	27	25	24	22	21
SUGA, TAKEAKI	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 NEMBERTY 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 EASTELAAR, 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
VERMOLA, 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 & JUNEELL	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	1,059	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 ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR
NET 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
WORSLEY, 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 TURP)	312	0.4516	312	296	280	265	249
MINIMAL PRODUCER POOL	2,500	5.0661	2,500	2,325	2,150	2,975	2,800
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	320	0.4632					
BAJA SUBAREA TOTALS =	69,087	100					

- 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.
- Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 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 ¹ PRODUCTION	(ACRE-FEET)	
		BASE ANNUAL ² PRODUCTION	RECIRCULATED ³ WATER
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.

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.

EXHIBIT B
TABLE B-2
TABLE SHOWING TOTAL WATER PRODUCTION
FOR AQUACULTURE AND RECREATIONAL LAKE PURPOSES
BAJA SUBAREA

PRODUCER	TOTAL WATER ¹ PRODUCTION	BASE ANNUAL ² PRODUCTION	RECIRCULATED ³ WATER
	(ACRE- FEET)		
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
S MITH, 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 ¹ PRODUCTION	BASE ANNUAL ² PRODUCTION	RECIRCULATED ³ 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.

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 is less than the amount indicated by the Base Flow Scalping Curves, then the actual recorded amount is used.

2. Determination of Surface Flow Components at Waterman Fault. The total amount of surface flow passing the Waterman Fault (under current riverbed conditions) is considered to be Storm Flow and can be estimated from the Storm Flow passing the USGS gauging station Mojave River at Barstow. The following table was developed to provide a method for estimating flow at Waterman Fault:

<u>Storm Flow At Barstow Gage¹ (Acre-Feet)</u>	<u>Estimated Surface Flow at Waterman Fault (Acre-Feet)</u>
2,000	0
10,000	6,200
20,000	14,300
30,000	22,600
40,000	31,400
50,000	40,500
60,000	49,200
70,000	58,400
80,000	67,800
90,000	76,800
100,000	85,400

¹From Recorded Flow at USGS Gaging Station Mojave River at 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 mount 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.

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 was less than the amount indicated by the Base
5 Flow Scalping Curves, then the actual recorded amount was used.

6 4. Engineers' Work Papers. These procedures are
7 reflected in the Work Papers of the Engineers, copies of which are
8 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)

WATER SUPPLY	Este	Oeste	Alto	Centro	Baja	Basin Totals
Surface Water Inflow						
Gaged	0	0	65,000	0 ¹	0 ²	65,000 ³
Ungaged	1,700	1,500	3,000	37,300	14,300	6,500 ⁴
Subsurface Inflow	0	0	1,000	2,000	1,200	0
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
TOTAL	3,700	1,500	74,000	39,300	15,600	78,600
CONSUMPTIVE USE AND OUTFLOW						
Surface Water Outflow						
Gaged	0	0	0	0	8,200	8,200
Ungaged	0	0	37,300	14,000	0	0
Subsurface Outflow	200	800	2,000	12,200	0	0
Consumptive Use						
Agriculture	6,800	2,900	16,100	20,300	30,200	76,500
Urban	1,900	1,200	36,300	9,500	9,700	58,600
Phreatophytes	0	0	5,100	900	1,500	7,500 ⁶
Exports	0	0	0	0	0	0
TOTAL	8,900	4,900	97,000	45,900	49,600	150,800
Surplus / (Deficit)	5,200	(3,400)	(23,000)	(6,600)	(34,000)	(72,200)
Total Estimated Production (Current Year) ⁷	15,700	7,600	98,900	46,500	54,300	223,000
PRODUCTION SAFE YIELD (Current Year)	10,500	4,200	75,900	39,900	20,300	150,800

¹ Estimated from reported flows at USGS gaging station, Mojave River at Victorville Narrows.

² 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.

³ Represents the sum of Este (1,700 af), Oeste (1,500 af), Alto (3,000 af) and Baja (300 af from Kane Wash).

⁴ Inter subarea subsurface flows do not accrue to the total basin water supply.

⁵ Estimated from reported flows at USGS gaging station, Mojave River at Barstow.

⁶ Estimated by Bookman-Edmonston.

⁷ 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

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SAN BERNARDINO CSA #70L
SAN BERNARDINO CO. BARSTOW-DAGGETT AIRPORT
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SHEPPARD, THOMAS & GLORIA
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SHORT, CHARLES & MARGARET
SHORT, JEFF
SILVER LAKES ASSOCIATION
SILVER VALLEY RANCH, INC
SMITH, ROBERT A
SMITH, WILLIAM E
SNYDER, KRYL K & ROUTH, RICHARD J
SON'S RANCH
SOPPELAND, WAYNE
SOUTHERN CALIFORNIA EDISON CO - AGRICULTURE
SOUTHERN CALIFORNIA EDISON CO - INDUSTRIAL
SOUTHERN CALIFORNIA GAS COMPANY
SOUTHERN CALIFORNIA WATER CO
SOUTHDOWN, INC.
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VAN BASTELAAR, ALPHONSE
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VAN DAM, ELDERT & SUSAN
VAN DIEST, CORNELIUS
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WESTERN ROCK PRODUCTS
WET SET, INC
WHITTINGHAM, RICHARD V
WILLOW WELLS MUTUAL WATER COMPANY
WITTE, E DANIEL & MARCIA
WLSR INC
WOO, CHEN C/O ASTER DUCK CO
WORSEY, JOSEPH A & REVAE
YANG, YOUNG MO
YARD, WILLIAM & BETTY
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YERMO WATER COMPANY
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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.

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

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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 C-1
HYPOTHETICAL EXAMPLE
ACCOUNTING FOR COMPLIANCE WITH SUBAREA OBLIGATIONS

OBLIGATION OF SUBAREA A TO SUBAREA B											
AVERAGE ANNUAL: 23,000 AFA BASEFLOW + 2,000 AFA SUBSURFACE FLOW)											
MINIMUM ANNUAL: 10,400 AFA + 1/3 OF ANY NET CUMULATIVE DEBIT; OR 10,400 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	
STATUS AT BEGINNING OF YEAR	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	
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	50,800	69,067	87,067	107,111	139,978	168,378	198,978	
NET CUMULATIVE CREDIT (DEBIT)	0	(6,000)	(13,400)	(10,200)	(22,933)	(27,933)	(30,889)	(21,022)	(15,622)	(8,022)	
FLOW DURING THE YEAR (HYPOTHETICAL)											
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	7,800	8,000	8,200	8,400	8,600	8,800	
MAKEUP WATER PURCHASED	0	1,400	4,800	4,667	6,200	8,044	7,667	0	0	0	
TOTAL FLOW	17,000	15,600	18,200	18,267	18,000	20,044	32,867	28,400	30,600	33,800	
MINIMUM OBLIGATION DURING THE YEAR	10,400	20,400	22,867	24,467	26,044	27,711	28,696	25,407	23,607	21,074	
MAKEUP OBLIGATION INCURRED	1,400	4,800	4,667	6,200	8,044	7,667	0	0	0	0	
STATUS AT END OF YEAR											
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	50,800	69,067	87,067	107,111	139,978	168,378	198,978	232,778	
NET CUMULATIVE CREDIT (DEBIT)	(6,000)	(13,400)	(18,200)	(22,933)	(27,933)	(30,889)	(21,022)	(15,622)	(8,022)	2,778	
FOLLOWING YEAR MINIMUM OBLIGATION											
10,400 + 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	
10,400 - CUM. CREDIT, BUT NOT 15,000	0	0	0	0	0	0	0	0	0	15,622	
MINIMUM OBLIGATION	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 1. 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.

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

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
Purple Monkeyflower	6							
Mohave Monkeyflower	6		6	6	6	6		
Mohave Tarweed	5							
Desert Cymopterus	6							
Barstow Woolly Sunflower					6	6		
Victorville Shoulderband	6	6						
Mohave Tul Chub							1, 3	
California Red-legged Frog	6	6	6					
Southwestern Pond Turtle	6		6	6		6	6	6
Desert Tortoise	2, 4		2, 4	2, 4	2, 4	2, 4		
San Diego horned Lizard	6							
Cooper's Hawk	8	8						
Ferruginous Hawk	8	8						
Swainson's Hawk	4	4						
Bald Eagle	1, 3	1, 3						
Merlin	6, 8	6, 8						
Prairie Falcon	6, 8	6, 8	6, 8	6, 8	6, 8	6, 8		
Western Yellow-billed Cuckoo	3, 7			3, 7	3, 7			
Southwestern Willow Flycatcher	8							
Brown-crested Flycatcher		8						
Vermillion Flycatcher	8					8	8	8
Le Conte's Thrasher	8							
Least Bell's Vireo	1, 3							1, 3

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**

ZONE	WELL NUMBER	MAXIMUM DEPTH BELOW GROUND
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

HI-2



Riparian Forest Habitat Area

SCALE



FIGURE H-1: LOWER NARROWS - TRANSITION RIPARIAN ZONE

LEGEND



Water Table Monitoring well

H7-1



Riparian Forest Habitat Area

SCALE



Feet

**FIGURE H-1: LOWER
NARROWS-TRANSITION
RIPARIAN ZONE**

LEGEND



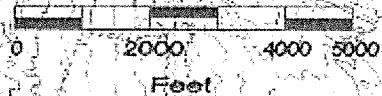
Water Table Monitoring well

H2-1



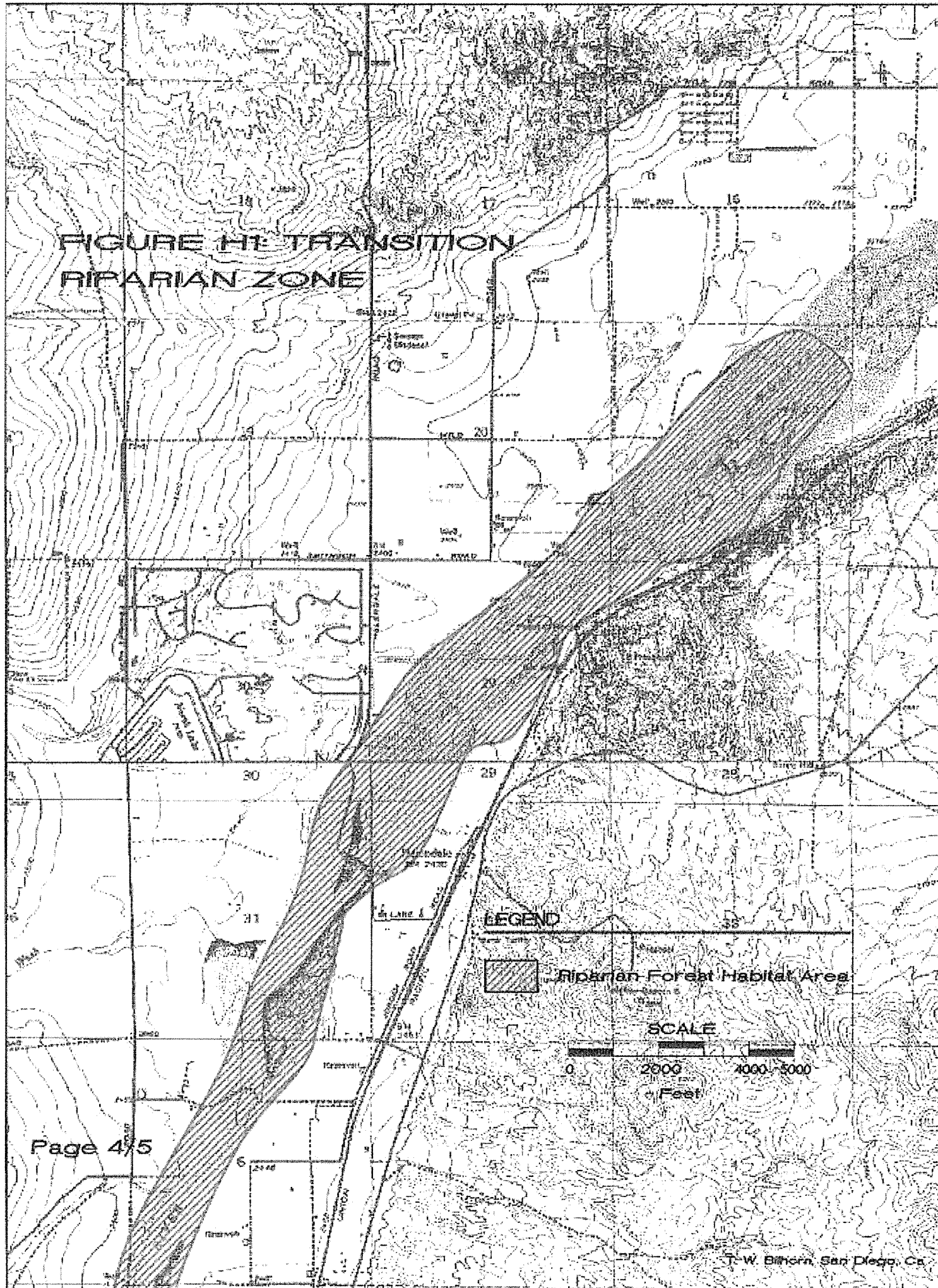
Riparian Forest Habitat Area

SCALE



Feet

FIGURE 11- TRANSITION RIPARIAN ZONE



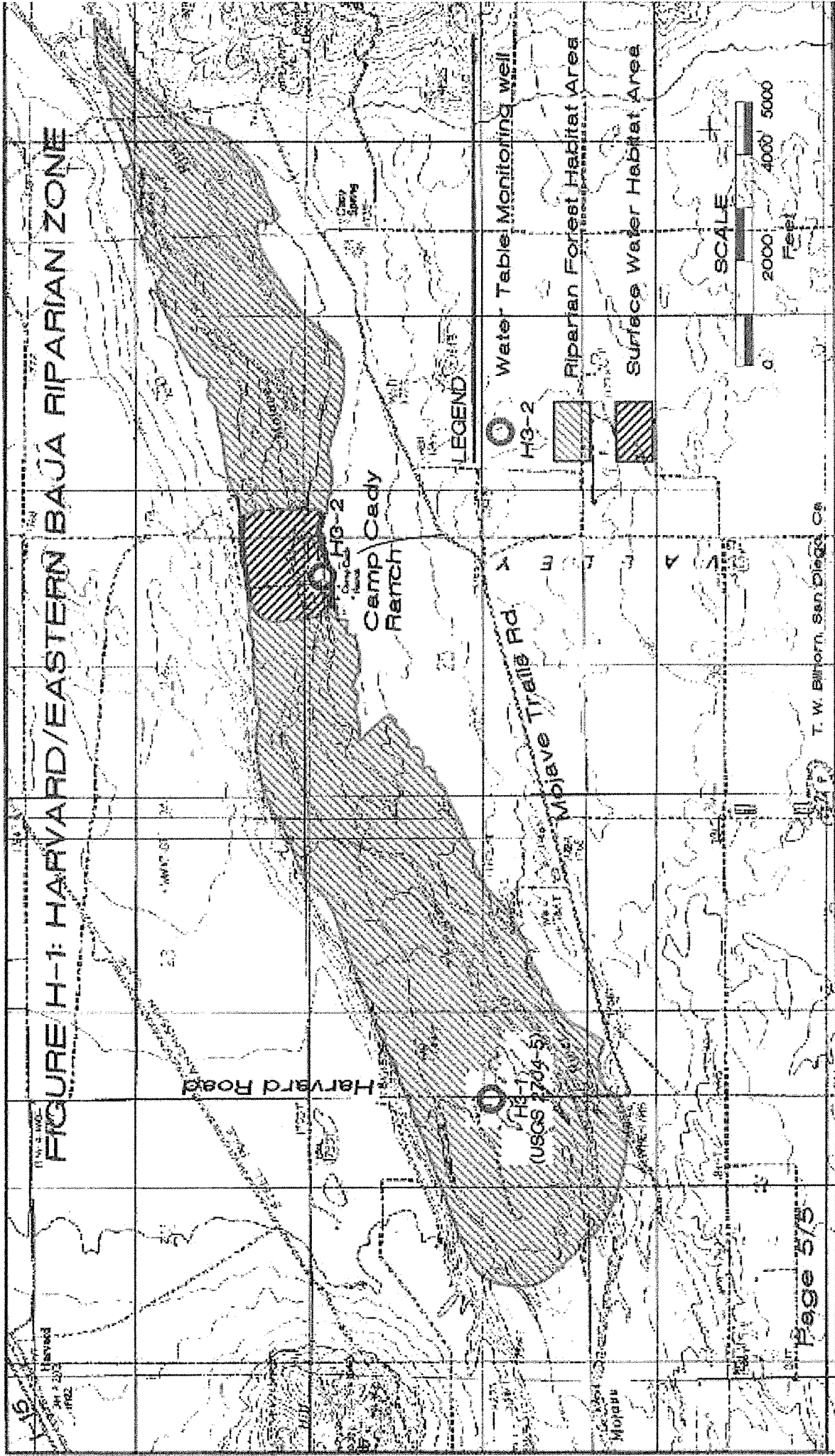


FIGURE H-1: HARVARD/EASTERN BAJA RIPARIAN ZONE

Appendix H – Ordinance No. SD 15-04 (Water Conservation Program)

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ORDINANCE NO. SD 15-04

**AN ORDINANCE OF THE COUNTY OF SAN BERNARDINO,
STATE OF CALIFORNIA, BOARD OF SUPERVISORS,
ACTING IN ITS CAPACITY AS THE GOVERNING BODY OF
NAMED COUNTY SERVICE AREAS AND ZONES THEREOF,
ESTABLISHING A WATER CONSERVATION PROGRAM TO
COMPLY WITH THE STATEWIDE DROUGHT REGULATIONS
AND REPEALING ORDINANCE NO. SD 90-11.**

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

WHEREAS, regulation of the time of certain water use, manner of certain water use, method of application of water for certain uses, installation and use of water-saving devices, provide an effective and immediately available means of conserving water; and

WHEREAS, on January 17, 2014, Governor Edmund G. Brown issued a proclamation declaring a State of Emergency due to severe drought conditions; and

WHEREAS, on April 25, 2014, the Governor proclaimed a Continued State of Emergency to exist throughout the State of California due to the ongoing drought; and

WHEREAS, California's water supplies continue to be severely depleted, severe drought conditions continue to present urgent challenges, and new expedited actions are needed to reduce the harmful impacts of the drought; and

WHEREAS, on July 15, 2014, the State Water Resources Control Board ("State Water Board") adopted Resolution No. 2014-0038 which adopted Emergency Regulations For Statewide Urban Water Conservation Regulations which became effective July 28, 2014; and

WHEREAS, on March 17, 2015, the State Water Board adopted Resolution No. 2015-0013 which expanded emergency conservation regulations to safeguard the state's remaining water supplies as California enters a fourth consecutive dry year,

1 which became effective on March 27, 2015, and which remains in place for up to 270
2 days (9 months), unless extended by the State Water Board; and

3 **WHEREAS**, on April 1, 2015, the Governor issued Executive Order B-29-15,
4 which, in part, mandates a 25% statewide reduction in urban water use, and provides
5 that the orders in the January 17, 2014, and April 25, 2014, proclamations and
6 Executive Orders B-26-14 and B-28-14 remain in full force except as modified by
7 Executive Order B-29-15. The Governor directed the State Water Board to impose
8 restrictions to achieve the statewide 25% reduction; and

9 **WHEREAS**, on May 18, 2015, the State Water Board proposed regulations
10 ("Regulations") became effective, mandating water use restrictions in order to comply
11 with the Governor's 25% cutback mandate; and

12 **WHEREAS**, the Regulations impose certain requirements on water users
13 throughout the state, such as prohibiting the use of water, for instance, to wash down
14 driveways, and prohibiting irrigation that causes water runoff; and

15 **WHEREAS**, the Regulations also impose mandatory cutback requirements on
16 "urban water suppliers," defined as suppliers providing water to over 3,000 customers or
17 providing over 3,000 acre-feet per year to municipal customers. Two of the County
18 Service Areas serve over 3,000 customers and, therefore, qualify as "urban water
19 suppliers" subject to mandatory reductions of 28% and 32% from 2013 usage levels;
20 and

21 **WHEREAS**, the Regulations also require public water distributors serving less
22 than 3,000 customers to either cutback their water use by 25% from 2013 levels or limit
23 outdoor irrigation to no more than twice per week; and

24 **WHEREAS**, California Water Code sections 375 *et seq.* empower any public
25 entity which supplies water at retail or wholesale to adopt and enforce a water
26 conservation program to reduce the quantity of water used by those within its service
27 area after holding a public hearing and making appropriate findings of necessity for the
28 adoption of a water conservation program; and

1 **WHEREAS**, Water Code section 375, subdivision (c) defines "public entity" to
2 include a city, county, special district, water authority, or any other municipal public
3 corporation or district; and

4 **WHEREAS**, the County desires to repeal Ordinance No. SD 90-11, which
5 established water conservation measures, and to adopt a water conservation program
6 that conforms to the mandatory restrictions set forth in the Regulations; and

7 **WHEREAS**, the adoption and enforcement of a comprehensive water
8 conservation program will allow the County to delay or avoid declaring a water shortage
9 emergency pursuant to Water Code section 350 *et seq.* as well as comply with the State
10 Board Regulations; and

11 **WHEREAS**, the County has the authority to impose monetary fines and penalties
12 and take other applicable actions pursuant to Water Code sections 375 through 377;
13 and

14 **WHEREAS**, on June 23, 2015, the County held a public hearing and made
15 appropriate findings of necessity for the adoption of a water conservation program; and

16 **NOW THEREFORE**, based upon the above, the Board of Supervisors of the
17 County of San Bernardino, acting in its capacity as the governing body of the County
18 Service Areas and Zones named in Section 4(b) of this ordinance, ordains as follows:

19
20 **SECTION 1. Incorporation of Recitals.** All of the foregoing recitals are true
21 and correct and the Board of Supervisors so finds and determines. The recitals set
22 forth above are incorporated herein and made an operative part of this ordinance.
23

24 **SECTION 2. Public Hearing.** The Board of Supervisors conducted a noticed
25 public hearing on June 23, 2015, at 10:00 a.m., or as soon thereafter as practicable, at
26 the Covington Chambers, 385 N. Arrowhead Avenue, San Bernardino, CA 92415, as
27 part of the Regular Meeting of the Board of Supervisors.
28

1 **SECTION 3. Repeal.** Ordinance SD 90-11 is hereby repealed.

2
3 **SECTION 4. Water Conservation Program**

- 4
5 (a) Findings and Purpose.
6 (b) Application.
7 (c) Mandatory Restrictions.
8 (d) Conservation Stages.
9 (e) Determination and Declaration of Conservation Stages.
10 (f) Duration of Conservation Stages.
11 (g) Fines and Penalties.
12 (h) Citation Appeal Process.

13
14 (a) **Findings and Purpose**

15 (1) The Board of Supervisors finds and determines that because of the
16 prevailing conditions in the state, and the declared policy of the state, it is necessary
17 and appropriate for the Board of Supervisors to adopt, implement and enforce this water
18 conservation program to reduce the quantity of water used within the County Service
19 Areas and Zones identified in Section 4 (b) herein to ensure that there is sufficient water
20 for human consumption, sanitation, and fire protection. The Board of Supervisors
21 further finds and determines that during periods of drought, water shortages, and water
22 shortage emergencies, the general welfare requires that the County maximize the
23 beneficial use of its available water resources to the extent that it is capable, and that
24 the unreasonable use, or unreasonable method of use of water shall be prevented and
25 the conservation of water is to be extended with the view to the reasonable and
26 beneficial use thereof in the interests of the people of the County and for the public
27 health, safety, and welfare.

28 (2) This ordinance adopts a water conservation program which

1 establishes mandatory water use restrictions, regulations, and administrative fines
2 and/or penalties to be implemented during declared Conservation Stages 1 through 4.

3 (3) Due to the fact that the County Service Areas and Zones are
4 located in a semi-arid region, groundwater is of limited supply and in overdraft in some
5 aquifers in the County. Current surface water supplies in the County Service Areas and
6 Zones are limited. The purpose of the provisions of this ordinance and the water
7 conservation program are to assure the highest beneficial use of County Service Area
8 and Zone water supplies and to provide sufficient water supplies to meet the basic
9 needs of human consumption, sanitation, and fire protection within the County Service
10 Areas and Zones.

11 (b) **Application**

12 The provisions of this Ordinance shall apply to all water customers of the
13 following County Service Areas and Zones (collectively referred to herein as "County
14 Service Areas" or "CSAs"):

15 CSA 42 (Oro Grande)

16 CSA 53C (Fawnskin)

17 CSA 64 (Spring Valley Lake)

18 CSA 70 (Countywide)

19 Zone CG (Cedar Glen)

20 Zone F (Little Morongo)

21 Zone J (Oak Hills)

22 Zone W-3 (Hacienda Heights)

23 Zone W-4 (Pioneertown)

24 (c) **Mandatory Restrictions**

25 During Conservation Stages 2 through 4, all customers of the CSAs shall comply
26 with the following mandates, except where necessary to address an immediate health
27 and safety need or to comply with a term or condition in a permit issued by a state or
28 federal agency. To the extent that the mandatory restrictions set forth below conflict

1 with a Conservation Stage measure, the more restrictive requirement shall apply. All
2 references herein to "days" shall mean calendar days unless otherwise specified.

3 (1) Watering, sprinkling, aerial watering or irrigating of any landscaped
4 or vegetated areas, including lawns, trees, shrubs, grass, ground cover, plants, vine
5 gardens, vegetables, flowers, or other landscaping shall only occur between the hours
6 of 9:00 p.m. and 6:00 a.m. during the high use season (April 1 through October 31 of
7 each year). In the low use season (November 1 through March 31), such watering shall
8 only occur between the hours of 8:00 a.m. and 3:00 p.m. Commercial and Industrial
9 use shall only occur between the hours of 9:00 p.m. and 6:00 a.m. year-round. These
10 restrictions shall not apply to hand-held hose or drip irrigation systems.

11 (2) Use of a hose that dispenses potable water to wash a motor
12 vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it
13 that causes it to cease dispensing water immediately when not in use, is prohibited.

14 (3) The application of potable water to outdoor landscapes during and
15 within 48 hours after measurable rainfall is prohibited.

16 (4) There shall be no hose washing of sidewalks, walkways, driveways,
17 parking areas, patios, porches, verandas, tennis courts, or other paved, concrete, or
18 other hard surface areas.

19 (5) Potable water shall not be used in fountains or other decorative
20 water features, except where the water is a part of a recirculating system.

21 (6) No person shall permit water to leak from any facility or plumbing
22 fixture on his/her premises. Upon receiving notice of the existence of any such leak, the
23 water Customer shall identify the source of the water, and within 48 hours, stop the
24 source by turning off the valve that supplies the water, and within 7 days, evaluate the
25 extent of, and repair or correct the problem. Broken sprinklers shall be repaired within
26 24 hours of notification.

27 (7) Use of water for any purpose, which results in flooding or run-off,
28 such that water flows onto adjacent property, non-irrigated areas, private and public

walkways, parking lots, structures, in gutters, driveways or streets, is prohibited. Sprinklers and irrigation systems shall be adjusted to avoid overspray. Customers shall avoid the use of sprinklers for any type of irrigation during high winds.

(8) There shall be no irrigation with potable water of ornamental turf on public street medians.

(9) Water for construction purposes, including but not limited to debrushing of vacant land, compaction of fills and pads, trench backfill and other construction uses, shall use recycled or non-potable water when available and water application must be attended at all times.

(10) The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars or other public places where food and drink are served and/or purchased is prohibited.

(11) Hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. Hotels and motels shall prominently display notice of this option in each guestroom using clear and easily understood language.

(12) Water used for cooling systems must be recycled to the extent possible.

(13) Evaporation resistant covers are encouraged for all swimming pools and hot tubs.

(14) Customers are strongly encouraged to convert lawns to drought tolerant, low water use or native plants, incorporating the principals of Xeriscaping.

(15) Winterizing pipes and valves to prevent leaks and breakage is strongly encouraged.

(16) Home Owner Associations (HOAs) are strongly encouraged to adopt and enforce water use restrictions in their rules and regulations.

(d) Conservation Stages

- 1 (1) Conservation Stage 1 – “Drought Watch”
- 2 (A) The Director of Special Districts Department or designee
- 3 (hereinafter Director) shall conduct public outreach and provide public information to
- 4 educate customers on drought conditions and water conservation measures. Water
- 5 customers shall be requested to reduce their consumption by no more than fifteen
- 6 percent (15%) from a comparative year selected by the Director.
- 7 (B) Customer Restrictions:
- 8 (I) Customers shall be encouraged to install and use
- 9 water saving devices such as rain sensors, low-flow showerheads, faucet aerators and
- 10 sprinkler and irrigation watering valves; low-flow or waterless toilets; high-efficiency, low
- 11 water use washing machines and dishwashers; and automated irrigation timers and/or
- 12 controllers as well as other available water retrofit kits.
- 13 (II) Outdoor irrigation is limited to 4-days per week.
- 14 (2) Conservation Stage 2 – “Drought Alert”
- 15 (A) The Director shall continue all public information actions
- 16 specified for Conservation Stage 1 but shall request that customers reduce their usage
- 17 by no more than forty percent (40%) from a comparative year designated by the Board
- 18 of Supervisors or as otherwise mandated by the state.
- 19 (B) Customer Restrictions:
- 20 (I) Comply with all Conservation Stage 1 measures.
- 21 (II) Outdoor irrigation shall be limited to 3-days or 2-days
- 22 per week, with specific days of the week to be designated by the Director.
- 23 (3) Conservation Stage 3 – “Drought Critical Condition”
- 24 (A) The Director shall continue all public sector actions specified
- 25 for Conservation Stages 1 and 2 but shall request that customers reduce their usage by
- 26 no more than fifty percent (50%) from a comparative year, as designated by the Board
- 27 of Supervisors or as may otherwise be mandated by the state.
- 28 (B) Customer Restrictions:

1 (I) Except as otherwise set forth in this Conservation
2 Stage, all Conservation Stage 1 and 2 measures shall remain in effect.

3 (II) If the Director finds that insufficient conservation is
4 occurring, the Director may impose the following requirements:

5 (i) Outdoor irrigation shall be limited to 1-day per
6 week, with specific days of the week to be designated by the Director.

7 (ii) Washing of automobiles, trucks, trailers, boats,
8 airplanes, and other types of mobile equipment is prohibited unless conducted at a
9 commercial car or other facility wash utilizing recycling systems. The only exception to
10 this prohibition is where the public health, safety, and welfare of the public is contingent
11 upon frequent vehicle cleaning, such as garbage trucks and vehicles used to transport
12 food and perishables.

13 (iii) The use of fountains or other decorative water
14 features is prohibited unless necessary as habitat for aquatic pets, in which case
15 recirculating water shall be permitted.

16 (iv) Draining and refilling of private swimming pools
17 is prohibited unless necessary for public health and safety and approved by the
18 Director.

19 (4) Conservation Stage 4- "Drought Emergency"

20 (A) The Director shall continue all actions specified for
21 Conservation Stages 1, 2, and 3 but shall request that customers reduce their usage by
22 more than fifty percent (50%) from a comparative year, as designated by the Board of
23 Supervisors or as may otherwise be mandated by the state.

24 (B) Customer Restrictions:

25 (I) Except as otherwise set forth in this Stage, all Stage
26 1, 2, and 3 measures remain in effect.

27 (II) All residential, commercial and industrial outdoor
28 irrigation is prohibited except as determined on a case by case basis by the Director.

1 (III) Will-serve letters may no longer be issued, if the
2 Board of Supervisors finds that there exists insufficient water supply to serve new
3 connections.

4 (e) **Determination and Declaration of Conservation Stages**

5 The Director shall review and analyze all available water supply and conservation
6 data and shall regularly report his/her findings to the Board of Supervisors during
7 Conservation Stages 1 through 4.

8 The Director is authorized to declare and rescind Conservation Stage 1 but shall
9 provide notice to the Board of Supervisors of such declaration or rescission and the
10 factual circumstances under which such action was taken.

11 The Board of Supervisors shall declare the existence of a Conservation Stage 2
12 through 4 condition by resolution adopted at a regular or special public meeting held in
13 accordance with state law.

14 The existence of a Conservation Stage 4 condition may be declared by the Board
15 of Supervisors pursuant to California Water Code section 350 et seq., following a public
16 hearing, noticed at least seven (7) days in advance, or as otherwise may be required by
17 state law.

18 Within ten (10) days following the declaration of a conservation stage, the Clerk
19 of the Board of Supervisors shall publish a copy of the resolution, or summary thereof,
20 in accordance with applicable law, in a newspaper of general circulation of official
21 notices. The conservation measures applicable to the conservation stage shall take
22 effect on the day the resolution, or summary thereof, is published. The Board of
23 Supervisors may declare an end to Conservation Stages 2 through 4 by the adoption of
24 a resolution at any regular or special meeting held in accordance with state law.

25 (f) **Duration of Conservation Stages**

26 The declaration of any conservation stage shall remain in effect until such time
27 as another stage is declared or the current stage is rescinded.

28 (g) **Fines and Penalties**

1 (1) *Violations.* Pursuant to Section 377 of the Water Code, each
2 violation of this ordinance may be prosecuted as a misdemeanor, punishable by
3 imprisonment in the County jail for no more than thirty (30) days or by fine not
4 exceeding \$1,000, or by both. In addition to the Water Code penalties, violations of this
5 ordinance may result in the imposition of fines and restriction and/or termination of
6 water service as set forth below:

7 (A) First Violation – Notice of Violation and Warning of Penalties
8 – a written warning accompanied by a copy of this ordinance, delivered by U.S. Mail
9 and/or hung on customer's door.

10 (B) Second Violation (within one year of the first violation) – a
11 fine of \$100.00 or attendance and successful completion of a "Water Conservation
12 Education Course," within thirty (30) days of the violation notice. Course must be
13 approved by the Director.

14 (C) Third Violation (within one year of the first violation) - a fine
15 of \$200.00.

16 (D) Fourth Violation (within one year of the first violation) – a fine
17 of \$300.00 and fee for installation of flow restricting device by Special Districts
18 Department during the duration of the drought declaration.

19 (E) Fifth Violation (within one year of the first violation) – a fine
20 of \$500.00, and termination of service for such period as determined to be appropriate
21 under the circumstances.

22 (2) *Fines, Additional Charges.* Any fine hereunder shall be in addition
23 to the basic water rates and other charges for the account and shall appear on and be
24 payable with the billing statement for the period during which the violation occurred;
25 nonpayment shall be subject to the same remedies available for non-payment of basic
26 water rates.

27 In addition to any fine, a customer violating this ordinance shall be
28 responsible for payment of charges for installing and/or removing any flow restricting

1 device and for disconnecting and/or reconnecting service. Such charges shall be paid
2 prior to the removal of the flow restrictor or reconnection of service, whichever the case
3 may be.

4 Fines and penalties collected shall be used to offset any state-imposed
5 fines and penalties and water conservation education and the drought response
6 programs.

7 (3) *Variances.*

8 (A) If, due to unique circumstances, a specific requirement of
9 this ordinance would result in undue hardship to a customer that is disproportionate to
10 the impacts to County Service Area or Zone customers generally, then the customer
11 may apply for a variance pursuant to the requirements as provided in this section.

12 (B) The variance may be granted or conditionally granted, only
13 upon a written finding of the existence of facts demonstrating an undue hardship to the
14 customer that is disproportionate to the impacts to County Service Area or Zone
15 customers generally or due to specific and unique circumstances of the customer or the
16 customer's property.

17 (C) Application. Application for a variance shall be a form
18 prescribed by the Director.

19 (D) Supporting Documentation. The application shall be
20 accompanied by photographs, maps, drawings, and other information, including a
21 written statement of the applicant.

22 (E) Required Findings for Variance. An application for a
23 variance shall be denied unless the Director finds, based on the information provided in
24 the application, supporting documents, or such additional information as may be
25 requested, and on water use information for the property as shown by the records of the
26 County Service Area or Zone, all of the following:

27 (I) That the variance does not constitute a grant of
28 special privilege inconsistent with the limitations upon other customers.

1 (II) That because of special circumstances applicable to
2 the property or its use, the strict application of this ordinance would have a
3 disproportionate impact on the property or use that exceeds the impacts to customers
4 generally.

5 (III) That the authorizing of such variance will not be of
6 substantial detriment to adjacent properties, and will not materially affect the ability of
7 the County Service Area or Zone to effectuate the purpose of this ordinance and will not
8 be detrimental to the public interest.

9 (IV) That the condition or situation of the subject property
10 or the intended use of the property for which the variance is sought is not common,
11 recurrent or general in nature. Inconvenience or the potential for damage to
12 landscaping shall not be considered for a variance from any section of this ordinance.

13 (F) Approval Authority. The Director shall exercise approval
14 authority and act upon any completed application within a reasonable time after
15 submittal and may approve, conditionally approve, or deny the variance. The applicant
16 requesting the variance shall be promptly notified in writing of any action taken. Unless
17 specified otherwise at the time a variance is approved, the variance applies to the
18 subject property during the term of the conservation stage. The decision of the Director
19 on a variance application is final.

20 (h) **Citation Appeal Process**

21 (1) *Procedures.* The Director shall determine when violations have
22 occurred and shall issue to the customer a notice of violation by U.S. First Class mail to
23 the address on file for the customer for the receipt of water bill. Said notice shall
24 describe the action to be taken (notice of first violation shall be accompanied by a
25 copy of this ordinance).

26 A customer may appeal the notice of violation by filing a written notice
27 of appeal directed to the address specified in the notice of violation no later than thirty
28 (30) days from the due date for the payment of any fine. The customer must pay

1 the contested fine notwithstanding a timely appeal. Any notice of violation not
2 timely appealed shall be final. Upon receipt of a timely appeal, the Director shall set
3 the matter for hearing by a designated hearing officer or hearing panel. The
4 hearing shall be held within a reasonable time but not to exceed thirty (30) days
5 following receipt of the appeal. The Director shall mail written notice of the hearing via
6 U.S. first class mail to the customer at least ten (10) days before the date of said
7 hearing. The decision of the hearing officer or panel shall be final.

8 (2) *Interim Measures.* Pending receipt of a written appeal or pending a
9 hearing pursuant to an appeal, the Director may take appropriate steps to prevent the
10 unauthorized use of water as appropriate to the nature and extent of the violation and
11 the current declared conservation stage.

12 13 **SECTION 5. Severability**

14 If any section, subsection, sentence, clause, or phrase of this ordinance is for
15 any reason held to be unconstitutional or invalid, such provision shall not affect the
16 validity of the remaining portions of this ordinance. The Board of Supervisors hereby
17 declares that it would have passed this ordinance and each section, subsection,
18 sentence, clause, or phrase thereof irrespective of the fact that any one or more
19 sections, subsections, sentences, clauses or phrases may be unconstitutional or
20 invalid.


21 22 **SECTION 6. California Environmental Quality Act**

23 The Board of Supervisors finds that adopting and enforcing a water conservation
24 program and mandatory restrictions on water use in order to comply with state
25 emergency drought regulations is exempt from the California Environmental Quality Act
26 ("CEQA") pursuant to State CEQA Guidelines Section 15268 and Public Records Code
27 section 21080(b)(1) as a ministerial action. The regulations mandate that each urban
28 water supplier implement all requirements and actions of the stage of its water

1 conservation plan that imposes mandatory restrictions on outdoor irrigation. Therefore,
2 an action to implement a particular phase of a water conservation plan is not a
3 discretionary action and, as such, it is statutorily exempt from CEQA.
4

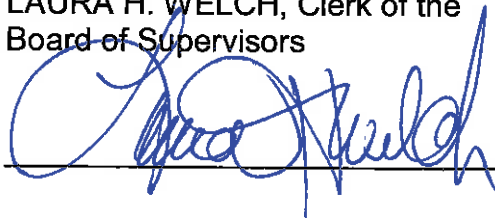
5 **SECTION 7. Effective Date and Publication**

6 This ordinance is adopted pursuant to Section 375 of the Water Code. This
7 ordinance shall take effect immediately pursuant to the provisions of Section 376(a) of
8 the Water Code. Pursuant to Water Code section 376 and Government Code section
9 6061, the Clerk of the Board shall publish in a newspaper of general circulation this
10 ordinance, or summary thereof, adopting a water conservation program within 10 days
11 after its adoption.
12

13 
14 JAMES RAMOS, Chairman
Board of Supervisors

15
16 SIGNED AND CERTIFIED THAT A COPY
17 OF THIS DOCUMENT HAS BEEN DELIVERED
TO THE CHAIRMAN OF THE BOARD

18 LAURA H. WELCH, Clerk of the
19 Board of Supervisors

20 
21

1 STATE OF CALIFORNIA)
2) ss.
3 COUNTY OF SAN BERNARDINO)

4 I, LAURA H. WELCH, Clerk of the Board of Supervisors of the County of San
5 Bernardino, State of California, hereby certify that at a regular meeting of the Board of
6 Supervisors of said County and State, held on the 23rd day of June, 2015,
at which meeting were present Supervisors: _____

Rutherford, Ramos, Hagman, Gonzales

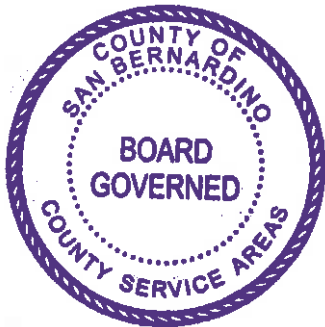
7 and the Clerk, the foregoing ordinance was passed and adopted by the following vote,
8 to wit:

9 AYES: SUPERVISORS: Rutherford, Ramos, Hagman, Gonzales


10 NOES: SUPERVISORS: None

11 ABSENT: SUPERVISORS: Lovingood

12 IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official
13 seal of the Board of Supervisors this 23rd day of June, 2015.



LAURA H. WELCH, Clerk of the
Board of Supervisors of the
County of San Bernardino,
State of California


Deputy

20 Approved as to Form:

21 JEAN-RENE BASLE
22 County Counsel

23 By: 

24 KENNETH C. HARDY
25 Deputy County Counsel

26 Date: 6/16/15
27
28

Appendix I – CSA 64 Consumer Confidence Report (2014 & 2015)



COUNTY SERVICE AREA 64

2014 CONSUMER CONFIDENCE REPORT

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Is routinely monitored for constituents in the District's drinking water according to Federal and State laws. The tables show the results of the District's monitoring for the period of January 1st through December 31st, 2014

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8:30am - 5:00pm
Closed on Holidays

MUY IMPORTANTE !

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

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It is important to keep customers informed about the quality of water delivered over the past year. This year's annual water quality report also known as a Consumer Confidence Report (CCR), contains information about the contaminants detected in 2014 and previous years. The Division's responsibility is to provide a safe and dependable supply of drinking water.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the California Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

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Jeff Rigney
Special Districts Department
Director

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Steve Samaras
Acting Deputy Director

"The Division Staff are working on your behalf each and every day to ensure your community's water needs are met. It continues to be our pleasure to serve as your water purveyor."



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Maximum Residual Disinfectant Level Goal (MRDLG) – The level of a disinfectant added for water treatment below which there is no known or expected health risk. MRDLGs are set by the U.S. Environmental Protection Agency.

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

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Public Health Goal (PHG) The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Primary Drinking Water Standard (PDWS)– MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Regulatory Action Level (AL) – The concentrations of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

Pesticides and herbicides, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.


Radioactive contaminants, that can be naturally-occurring or be the result of oil and gas production and mining activities.

Primary Drinking Water Standards

Detection of Lead and Copper							
Lead and Copper (CCR Units)	Sample Date	No. of Samples Collected	90th Percentile Level Detected	No. Sites Exceeding	AL	PHG	Typical Source
Lead (ppb)	2012	20	0	0	15	0.2	Internal corrosion of household plumbing; erosion of natural deposits
Copper (ppm)	2012	20	.32	0	1.3	0.3	Internal corrosion of household plumbing; erosion of natural deposits

Microbiological Contaminants							
Contaminants	Sample Date	Highest No. of Detections	No. of Months in Violation	MCL		MCLG	Typical Source
Total Coliform	2014	0	0	More than 1 sample in a month with a detection		ND	Human and animal fecal waste
E. Coli	2014	0	0	A routine sample and a repeat sample detect total Coliform and either sample also detects fecal coliform or E. Coli		ND	Human and animal fecal waste

Radioactive Contaminants							
Chemical or Constituent (CCR Units)	Sample Date	Average Level	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	MCL Violation	Typical Source of Contaminant
Gross Alpha (pCi/L)	2014	0.71	0 - 4.10	15	0	NO	Erosion of natural deposits

Inorganic Contaminants							
Chemical or Constituent (CCR Units)	Sample Date	Average Level	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	MCL Violation	Typical Source of Contaminant
Nitrate (ppm)	2014	5.07	0 - 8.60	45	45	NO	Runoff and leaching from fertilizer use; erosion of natural deposits
Fluoride (ppm)	2014	0.30	0.28 - 0.31	2	1	NO	Erosion of natural deposits; water additive that promotes strong teeth
Arsenic (ppb) 	2014	8.29	0 - 11	10	0.004	YES	Erosion of natural deposits; runoff from orchards; glass and electronics
Hexavalent Chromium (ppb)	2014	0.38	0 - 1.50	10	0.02	NO	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits

Disinfectant Byproducts and Chemical Disinfectant							
Chemical or Constituent (CCR Units)	Sample Date	Average Level	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	MCL Violation	Typical Source of Contaminant
Cl Res Total (ppm)	2014	0.68	0 - 1.77	4	4	NO	Drinking water disinfectant added for
Total Trihalomethanes - TTHM - (ppb)	2014	0	0 - 0	80	N/A	NO	Byproduct of drinking water chlorination
Total Haloacetic Acids - HAA5 - (ppb)	2014	0	0 - 0	60	N/A	NO	Byproduct of drinking water disinfection

Secondary Drinking Water Standards							
Chemical or Constituent (CCR Units)	Sample Date	Average Level	Range of Detections	MCL [MRDL]	PHG (MCLG)	MCL Violation	Typical Source of Contaminant
Odor Threshold (Units)	2014	1	1	3	N/A	NO	Naturally occurring organic materials
Turbidity (Units)	2014	<0.1	<0.1 - 0.1	5	N/A	NO	Soil runoff
Chloride (ppm)	2014	16.0	16.0	500	N/A	NO	Runoff/leaching from natural deposits; seawater influence
Specific Conductance (uS/cm)	2014	230	230	1,600	N/A	NO	Substances that form ions when in water; seawater influence
Total Dissolved Solids / TDS (ppm)	2014	160	160	1000	N/A	NO	Runoff/leaching from natural deposits
Sulfate (ppm)	2014	11	11	500	N/A	NO	Runoff/leaching from natural deposits

Additional Constituents						
Chemical or Constituent	Sample Date	Average Level	Range of Detections	MCL [MRDL]	PHG (MCLG)	Typical Source of Contaminant
pH (Lab)	2014	8	8	N/A	N/A	N/A
Aggressive Index	2014	11.63	11.63	N/A	N/A	N/A
Alkalinity, Total (as CaCO3)	2014	77	77	N/A	N/A	N/A
Bicarbonate (HCO3)	2014	94	94	N/A	N/A	N/A
Hardness, Total (as CaCO3)	2014	64	64	N/A	N/A	N/A
Calcium (Ca)	2014	21	21	N/A	N/A	N/A
Magnesium (Mg)	2014	2.60	2.60	N/A	N/A	N/A
Potassium (K)	2014	1.20	1.20	N/A	N/A	N/A
Sodium (Na)	2014	21	21	N/A	N/A	N/A
Carbonate	2013	3	0 - 12	N/A	N/A	N/A
Total Anions	2014	2.20	2.20	N/A	N/A	N/A

Detection of Unregulated Constituents					
Chemical or Constituent (CCR Units)	Sample Date	Average Level	Range of Detections	Notification Level	Health Effects Language
Vanadium (ppb)	2014	41.00	19 - 63	50	The babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.

SHOULD CUSTOMERS BE CONCERNED?


MCL's are set at very stringent levels. To understand the risk of possible health effects described for regulated contaminants, customers should know that a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe drinking water hotline (1-800-426-4791).

* Some people who drink water containing fluoride in excess of the federal MCL of 4mg/L over many years may get bone disease, including pain and tenderness of the bones. Children who drink water containing fluoride in excess of the State MCL of 2 mg/L may get mottled teeth.

Sample Dates: The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Special Districts Department, Water and Sanitation Division is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Water Hotline or at <http://www.epa.gov/safewater/lead>.

 While your drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

In 2014 Arsenic samples tested above the MCL of 10ppb in Well #4. Well #4 has been taken offline.



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"The Division appreciates our customer's commitment to water conservation during this extended drought. Your cumulative savings to date is 28.54%. Keep up the good work!"



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Primary Drinking Water Standards

Detection of Lead and Copper							
Lead and Copper (CCR Units)	Sample Date	No. of Samples Collected	90th Percentile Level Detected	No. Sites Exceeding	AL	PHG	Typical Source
Lead (ppb)	2015	20	0	0	15	0.2	Internal corrosion of household plumbing; erosion of natural deposits
Copper (ppm)	2015	20	.11	0	1.3	0.3	Internal corrosion of household plumbing; erosion of natural deposits

Microbiological Contaminants							
Contaminants	Sample Date	Highest No. of Detections	No. of Months in Violation	MCL		MCLG	Typical Source
Total Coliform	2015	0	0	More than 1 sample in a month with a detection		ND	Human and animal fecal waste
E. Coli	2015	0	0	A routine sample and a repeat sample detect total Coliform and either sample also detects fecal coliform or E. Coli		ND	Human and animal fecal waste

Radioactive Contaminants							
Chemical or Constituent (CCR Units)	Sample Date	Average Level	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	MCL Violation	Typical Source of Contaminant
Gross Alpha (pCi/L)	2015	4.45	0 - 10	15	0	NO	Erosion of natural deposits
Inorganic Contaminants							
Chemical or Constituent (CCR Units)	Sample Date	Average Level	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	MCL Violation	Typical Source of Contaminant
Nitrate (ppm)	2015	4.48	0 - 8.50	45	45	NO	Runoff and leaching from fertilizer use; erosion of natural deposits
Fluoride (ppm)	2014	0.30	0.28 - 0.31	2	1	NO	Erosion of natural deposits; water additive that promotes strong teeth
 Arsenic (ppb)	2014	8.29	0 - 11*	10	0.004	NO	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Hexavalent Chromium (ppb)	2015	0.45	0 - 1.8	10	0.02	NO	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits
Disinfectant Byproducts and Chemical Disinfectant							
Chemical or Constituent (CCR Units)	Sample Date	Average Level	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	MCL Violation	Typical Source of Contaminant
Cl Res Total (ppm)	2015	0.68	0 - 1.9	4	4	NO	Drinking water disinfectant added for treatment
Total Trihalomethanes - TTHM - (ppb)	2015	0.37	0 - 4.9	80	N/A	NO	Byproduct of drinking water chlorination
Total Haloacetic Acids - HAA5 - (ppb)	2015	0	0 - 0	60	N/A	NO	Byproduct of drinking water disinfection

Secondary Drinking Water Standards							
Chemical or Constituent (CCR Units)	Sample Date	Average Level	Range of Detections	MCL [MRDL]	PHG (MCLG)	MCL Violation	Typical Source of Contaminant
Odor Threshold (Units)	2015	1	0 - 2	3	N/A	NO	Naturally occurring organic materials
Turbidity (Units)	2015	2.82	0 - 57	5	N/A	NO	Soil runoff
Chloride (ppm)	2014	11.52	2.6 - 20	500	N/A	NO	Runoff/leaching from natural deposits; seawater influence
Specific Conductance (uS/cm)	2014	270	200 - 360	1,600	N/A	NO	Substances that form ions when in water; seawater influence
Total Dissolved Solids / TDS (ppm)	2014	176.67	120 - 220	1000	N/A	NO	Runoff/leaching from natural deposits
Sulfate (ppm)	2014	14.67	2.8 - 37	500	N/A	NO	Runoff/leaching from natural deposits

Additional Constituents						
Chemical or Constituent	Sample Date	Average Level	Range of Detections	MCL [MRDL]	PHG (MCLG)	Typical Source of Contaminant
pH (Lab)	2014	8	8	N/A	N/A	N/A
Aggressive Index	2014	11.63	11.63	N/A	N/A	N/A
Alkalinity, Total (as CaCO3)	2014	77	77	N/A	N/A	N/A
Bicarbonate (HCO3)	2014	94	94	N/A	N/A	N/A
Hardness, Total (as CaCO3)	2014	64	64	N/A	N/A	N/A
Calcium (Ca)	2014	21	21	N/A	N/A	N/A
Magnesium (Mg)	2014	2.60	2.60	N/A	N/A	N/A
Potassium (K)	2014	1.20	1.20	N/A	N/A	N/A
Sodium (Na)	2014	21	21	N/A	N/A	N/A
Carbonate	2013	3	0 - 12	N/A	N/A	N/A
Total Anions	2014	2.20	2.20	N/A	N/A	N/A

Detection of Unregulated Constituents					
Chemical or Constituent (CCR Units)	Sample Date	Average Level	Range of Detections	Notification Level	Health Effects Language
Vanadium (ppb)	2014	41.00	19 - 63	50	The babies of some pregnant women who drink water containing vanadium in excess of the notification level may have an increased risk of developmental effects, based on studies in laboratory animals.

Should Customers Be Concerned?

MCL’s are set at very stringent levels. To understand the risk of possible health effects described for regulated contaminants, customers should know that a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/ Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe drinking water hotline at 1-800-426-4791.

Sample Dates: The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

*Some people who drink water containing fluoride in excess of the federal MCL of 4mg/L over many years may get bone disease, including pain and tenderness of the bones. Children who drink water containing fluoride in excess of the State MCL of 2 mg/L may get mottled teeth.

*If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Special Districts Department, Water and Sanitation Division is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Water Hotline or at <http://www.epa.gov/safewater/lead>.



While your drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard **balances the current understanding of arsenic’s possible health** effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

*In 2014 Arsenic samples tested above the MCL of 10ppb in Well #4. Well #4 has been taken offline.