San Bernardino Special Districts Department

CSA 70 J – OAK HILLS

URBAN WATER MANAGEMENT PLAN

Engineering Resources of Southern California, Inc.

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2017

Contents

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 70 Zone J (CSA 70J) service area. The San Bernardino County Board of Supervisors is the governing agency for CSA 70J. 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 70J supplies more than 1,500 acre-feet annually to nearly 3,120 customer connections.

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 70J to provide a safe and reliable water supply to meet existing and future needs of its customers. CSA 70J 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 70J goal based on conservative water supply and demand assumptions over the next 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 70J will address the latest changes to the Water Code because CSA 70J is completing their first version of the UWMP.

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 70J, as well as planning efforts related to CSA 70J. CSA 70J follows City of Hesperia's General Plan that guides land use activities, and a Water System Master Plan, which was reviewed and considered in the development of the 2015 UWMP.

This plan was also developed in coordination with the MWA, a regional water provider and wholesale water supplier to CSA 70J. 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 70J's combined efforts may be found in the 2014 Mojave Integrated Regional Water Management Plan. CSA 70J 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 70J 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 70J delivers water to approximately 3,120 service connections, therefore CSA 70J is required to prepare and adopt an UWMP and this Plan has been prepared to meet that requirement.

2.1.1 Public Water Systems

CSA 70J is a Public Water System (PWS) as defined in CA 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 Systems in CSA 70J.

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
CA 36-10125	CSA 70J	3,120	1,513
	TOTAL	3,120	1,513

NOTES: Based on information received from 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 70J. Only one PWS exists within the service area.

2.2 Regional Planning

CSA 70J cooperates with the MWA managing the region's water resources. CSA 70J 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 70J 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 70J only.

Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* *drop down list*
☑	**Individual UWMP**		
	☑	Water Supplier is also a member of a RUWMP	Other
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		
NOTES: CSA 70J is also a part of the Mojave Region Integrated Regional Water Management Plan.			

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 70J records and operates all water delivery and measurement data using the fiscal year. All information presented in this UWMP will also be in fiscal years, except where noted (see Table 2-3). The Plan includes complete water use and planning data for the fiscal year of 2015 from July 1st to June 30th. 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)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☐	UWMP Tables Are in Calendar Years
☑	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
7/1	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

2.5 Coordination and Outreach

CSA 70J has made efforts to coordinate with the region's wholesale water supplier (MWA), and the surrounding communities.

2.5.1 Wholesale and Retail Coordination

Mojave Water Agency is the region's wholesale water provider. MWA has provided CSA 70J with water demand projections for use in its 2015 UWMP.

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

2.5.2 Coordination with Other Agencies and the Community

CSA 70J has and continues to actively encourage community participation in its on-going water management activities and specific water related projects. CSA 70J public participation programs include mailings, public meetings, and web-based communication. CSA 70J water conservation program involves a variety of public awareness programs. The San Bernardino County Board of

Supervisors governs CSA 70J and has regularly scheduled Oak Hills Municipal Advisory Council meetings that include public comment on water issues.

Chapter 3 System Description

This chapter includes a description of the CSA 70J service area and climate, CSA 70J's organizational structure and history, and population and demographics.

3.1 General Description

County Service Area 70 Improvement Zone J (CSA 70J) is located in the Victor Valley High Desert Region of San Bernardino County, 35 miles northwest of the City of San Bernardino. CSA 70J was formed by the County in 1972. It resulted in the formation of four prior assessment districts, to provide water and road maintenance services primarily to the unincorporated community of Oak Hills, California, one of several unincorporated communities with the Victor Valley Region. The community is bordered by the City of Hesperia to the east, the unincorporated community of Phelan (County Service Area 70 Improvement Zone L, now Phelan Pinon Hills CSD) to the west, the City of Victorville to the north and the unincorporated area of Summit Valley to the southwest.

The study area lies in Township 3N and 4N, and within Range 5 W, SBBM. The total study area includes approximately 19,584 acres (30.55 square miles) of land. The study area includes 17,042 acres (26.59 square miles) of land within the CSA 70J official boundaries and the City of Hesperia has approximately 2,542 acres (3.96 square miles) of land that has been annexed to the City of Hesperia, but is still served by the CSA 70J water system. Of this total, there are approximately 1,760 acres of open space land within the official CSA 70J boundaries, not supplied water but are part of CSA 70J service area and were not counted as part of this study area. The total project area covers approximately 19,584 acres (30.55 square miles) of land.

CSA 70J provides domestic water from five (5) active wells within Alto Subbasin which is within the Mojave River Groundwater Basin under the control of the MWA. The existing distribution system consists of waterlines from 2 to 16 inches in diameter. CSA 70J has 12 storage reservoirs in the system with a total capacity of approximately 12 AF or 3.94 million gallons.

3.2 CSA 70J Service Area

Figure 3-1 depicts the service area boundary of CSA 70J. No significant changes have been made to the service area boundary from the baseline period through 2015.

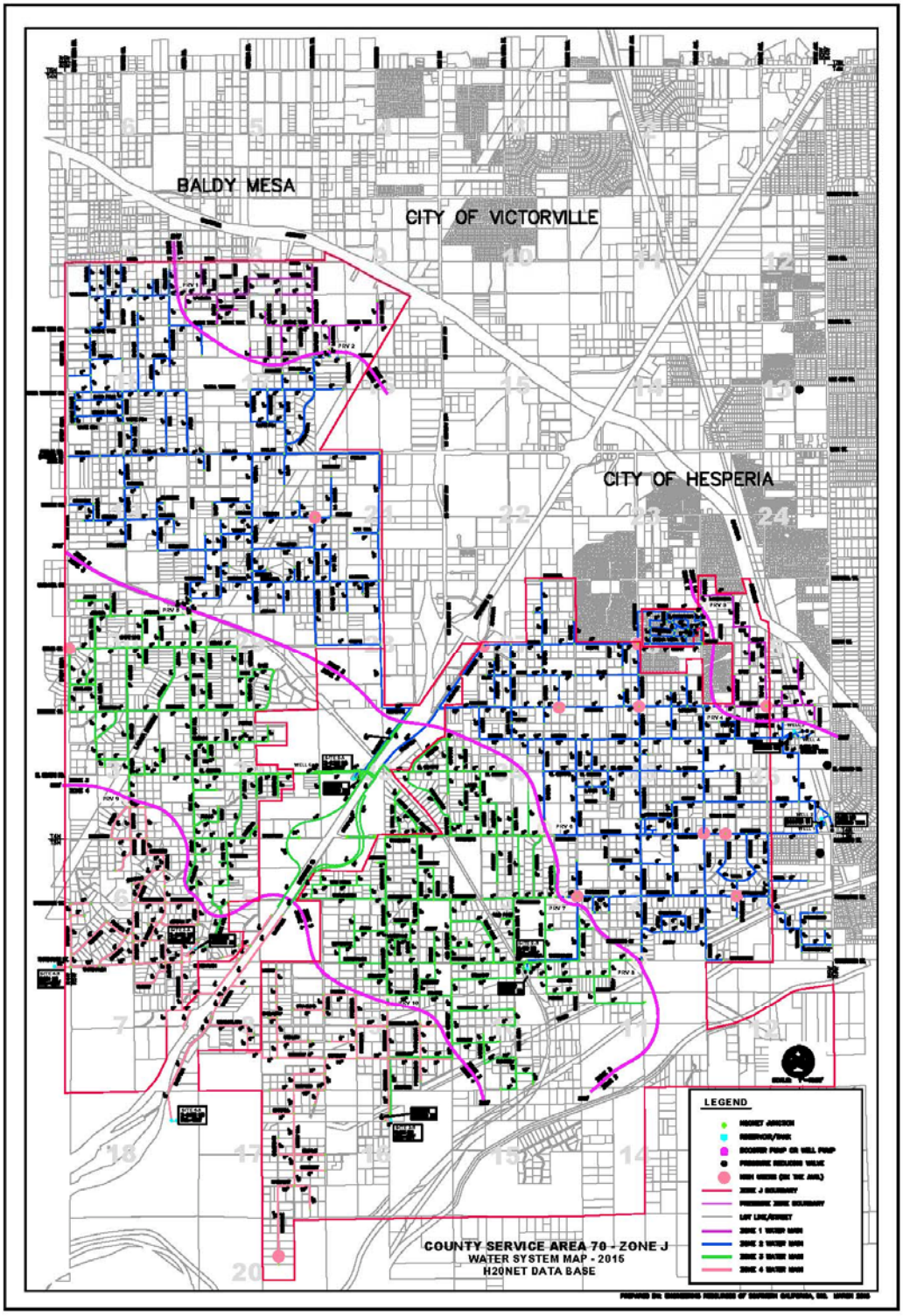

Figure 3-1. CSA 70J Water Service Area

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 north of the service area, and is considered to be representative of the climate in CSA 70J. Representative precipitation, temperature, and reference evapotranspiration (ETo) data for CSA 70J 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 19 inches in 2010 to as low as only 1 inch in all of 2013.

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

3.4 Service Area Population and Demographics

The current service area population was estimated using the California Department of Finance (DOF) population data reported for CSA 70J. The projected population for CSA 70J 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 70J. 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 2060. 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
	10,227	11,433	13,049	14,906	16,811	18,597

NOTES: 2015-2040 data source is Beacon Economics, 2015.

3.4.2 Other Demographic Factors

The service area includes a significant acreage of currently un-developed land. Anticipated growth in these undeveloped areas has been included in the population projections.

Chapter 4 System Water Use CSA 70J

This chapter describes current water usage and projected future demands within CSA 70J's service area. Water usage is divided into use sectors including single-family residential, multi-family residential, commercial, industrial, landscape and other purposes. Past and current water usage are based on actual water delivery records from CSA 70J; 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 70J does not currently deliver any recycled water; all water demands are met with potable groundwater supplies.

4.2 Water Uses by Sector

In 2015, CSA 70J produced 1,513 AF of water into the distribution system. Metered water deliveries to customers were 1,289 AF, and all water demands were met with potable water. By far the largest water use type within the service area is Single Family, comprising nearly 78% of all metered deliveries in 2015. Water demands in 2015 are broken out by type in Table 4-1.

The difference between water production and metered deliveries is shown in Table 4-1 as "Losses" and totals 224 AF for 2015, or approximately 15 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 others. A detailed water audit and leak detection program of 47 California water utilities found an average loss of 10 percent and CSA 70J is above this statewide average. Utilizing the American Water Works Association water audit tool for CSA 70J's system yielded a different water loss number than that shown in Table 4-1, and is described further in Section 4.3.

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type *(Add additional rows as needed)*	2015 Actual		
Drop down list *May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool*	Additional Description *(as needed)*	Level of Treatment When Delivered *Drop down list*	Volume
Single Family		Drinking Water	1,173
Commercial		Drinking Water	77
Industrial		Drinking Water	26
Institutional/Governmental		Drinking Water	13
Losses		Drinking Water	224
		TOTAL	1,513
NOTES: Based on area use type.			

4.2.1 Future Demands

Based upon the population growth projections provided by Beacon Economics, MWA developed water demand projections by region as well as by purveyor service area, including CSA 70J. The MWA methodology utilized historical water production and population data (2010 through 2015) to develop trend in GPCD that was then applied to the Beacon population growth numbers to generate gross water demand forecasts.

MWA provided gross water demand projections, in 5-year increments, which were then allocated to individual user types in proportion to the actual user type water demand in 2015. The demands for potable water based upon the MWA projection are included in Table 4-2 below.

Table 4-2 Retail: Demands for Potable and Raw Water - Projected						
Use Type *(Add additional rows as needed)*	Additional Description *(as needed)*	Projected Water Use *Report To the Extent that Records are Available*				
Drop down list *May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool*		2020	2025	2030	2035	2040-opt
Single Family		1,477	1,656	1,865	2,077	2,273
Commercial		97	109	123	137	150
Industrial		32	36	41	46	50
Institutional/Governmental		16	18	20	23	25
Losses		286	321	362	403	441
	TOTAL	1,908	2,140	2,411	2,686	2,939
NOTES: Projected water use information obtained from MWA UWMP Table 2-5. Water demand information was then adjusted to match area use type.						

Potable water demands are summarized in Table 4-3 below.

Table 4-3 Retail: Total Water Demands						
	2015	2020	2025	2030	2035	2040 *(opt)*
Potable and Raw Water *From Tables 4-1 and 4-2*	1,513	1,908	2,140	2,411	2,686	2,939
Recycled Water Demand* *From Table 6-4*	0	0	0	0	0	0
TOTAL WATER DEMAND	1,513	1,908	2,140	2,411	2,686	2,939
**Recycled water demand fields will be blank until Table 6-4 is complete.*						
NOTES: CSA 70J does not use recycled water.						

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 is likely to occur in Single Family development.

4.3 Distribution System Water Losses

An audit of CSA 70 J'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 beginning July 2014, with 1,784 AF entering the distribution system and an estimated 210 AF of water losses. The data in Excel format will be provided electronically to DWR and the results are summarized in Table 4-4 below.

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
07/2014	209.7
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES: From the AWWA water audit software program.	

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.

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	No
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	No
NOTES: Future Water Savings was not included in the projections. CSA 70J does not have Low Income Residential Demands placed on the system.	

4.5 Water Use for Lower Income Households

Senate Bill 1087 requires that water use projections of an UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the house element of any city, county, or city and county in the service area of the supplier. As noted previously, Low-Income housing is not found within CSA 70J boundary.

Chapter 5 Baseline and Targets

Consistent with SB X7-7, the 2015 UWMPs must determine baseline water use and 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 E.

CSA 70J's baseline population data have been revised to reflect updates to population numbers, which in turn have resulted in revisions to its target per-capita water use reductions. CSA 70J met its 2015 target for per capita water use.

5.2 Updating Calculations from 2010 UWMP

Due to CSA 70J being located in the unincorporated areas, 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* *(select one from the drop down list)*
Acre Feet
**The unit of measure must be consistent with Table 2-3*
NOTES:

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 70J service area and for this reason the Base Daily Per Capita Water Use is based on a 10-year period.

CSA 70J has selected the 10-year period ending December 31, 2005 as its baseline period. In addition, CSA 70J evaluated the 5-year period ending December 31, 2007 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	2,141	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	1996	
	Year ending baseline period range[3]	2005	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range[4]	2007	

[1] *If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.*

[2] *The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.*

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

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

NOTES:

5.4 Service Area Population

CSA 70J utilized DWR Population Tool (Methodology 3) for CSA 70J to determine population within the service area. This is because the service area boundary is not located within a City boundary and is part of the unincorporated area. See SB X7-7 Table 2.

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES: The DWR Population Tool was used to find the appropriate number of connections based on the population information provided.	

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

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	1996	4,680
Year 2	1997	4,910
Year 3	1998	5,172
Year 4	1999	5,496
Year 5	2000	5,894
Year 6	2001	6,257
Year 7	2002	6,653
Year 8	2003	7,276
Year 9	2004	7,907
Year 10	2005	8,655
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	7,276
Year 2	2004	7,907
Year 3	2005	8,655
Year 4	2006	9,381
Year 5	2007	9,571
2015 Compliance Year Population		
2015		10,735
NOTES: Since the percent of recycled water is below 10%, a 10-year continuous base period will be used for analysis purposes.		

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 the CSA 70J, 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 70J's distribution system and the tables have been filled out to show no exclusions.

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

70J's own water source produced by groundwater wells. There were no meter error adjustments made to the data.

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)FPA			
This water source is:				
☑	The supplier's own water source			
☐	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment * *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1996	905	-	905
Year 2	1997	905	-	905
Year 3	1998	804	-	804
Year 4	1999	804	-	804
Year 5	2000	804	-	804
Year 6	2001	804	-	804
Year 7	2002	804	-	804
Year 8	2003	754	-	754
Year 9	2004	711	-	711
Year 10	2005	660	-	660
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2003	754	-	754
Year 2	2004	711	-	711
Year 3	2005	660	-	660
Year 4	2006	609	-	609
Year 5	2007	609	-	609
2015 Compliance Year - Water into Distribution System				
2015		609	-	609
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES: Amount of water CSA 70J can pump from the groundwater aquifer without need for replacement.				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Imported Water (Above FPA)			
This water source is:				
☐	The supplier's own water source			
☑	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment * *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1996	282	0	282
Year 2	1997	269	0	269
Year 3	1998	226	0	226
Year 4	1999	530	0	530
Year 5	2000	864	0	864
Year 6	2001	686	0	686
Year 7	2002	977	0	977
Year 8	2003	1,066	0	1,066
Year 9	2004	1,422	0	1,422
Year 10	2005	1,273	0	1,273
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	1,066	0	1,066
Year 2	2,004	1,422	0	1,422
Year 3	2,005	1,273	0	1,273
Year 4	2,006	1,506	0	1,506
Year 5	2,007	1,590	0	1,590
2015 Compliance Year - Water into Distribution System				
2015		904	0	904
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES: Amount pumped by CSA 70J from aquifer above Free Production Allowance. Leased on open market.				

5.6 Baseline Daily Per Capita Water use

Utilizing the population 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 70J's Baseline GPCD is 220, based upon the 10-year period from 1996 to 2005.

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Annual Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1996	4,680	1,187	226
Year 2	1997	4,910	1,174	213
Year 3	1998	5,172	1,030	178
Year 4	1999	5,496	1,334	217
Year 5	2000	5,894	1,668	253
Year 6	2001	6,257	1,490	213
Year 7	2002	6,653	1,781	239
Year 8	2003	7,276	1,820	223
Year 9	2004	7,907	2,133	241
Year 10	2005	8,655	1,933	199
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**220**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2003	7,276	1,820	223
Year 2	2004	7,907	2,133	241
Year 3	2005	8,655	1,933	199
Year 4	2006	9,381	2,115	201
Year 5	2007	9,571	2,199	205
5 Year Average Baseline GPCD				**214**
2015 Compliance Year GPCD				
2015		10,735	1,513	**126**

NOTES: Based on information obtained from Beacon Economics CSA 70J population projections.

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 70J 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 176 GPCD (See SB X 7-7 Table 7-A).

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☑	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator
NOTES: Used the 20% baseline reduction method.		

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**
220	**176**
NOTES: A 20% reduction from the 10-year baseline GPCD.	

SB X7-7 Table 7-F, below, confirms the minimum GPCD reduction for CSA 70J's 2020 target.

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
214	203	176	**176**

[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: Used Method 1 to calculate the 2020 target.

5.8 Compliance with 2015 Daily per Capita Water Use Target

CSA 70J's actual 2015 Gross Water Use was 1,513 acre-feet and the population was 10,735. The resulting compliance year 2015 per-capita water use is 126 GPCD. CSA 70J's 2015 Interim Target GPCD is 198, so CSA 70J did achieve its Interim Target. See SB X7-7 Table 9 below. CSA 70J did not adjust the 2015 Gross Water Use.

SB X7-7 Table 9: 2015 Compliance								
		Optional Adjustments *(in GPCD)*						
		Enter "0" if Adjustment Not Used						
Actual 2015 GPCD	2015 Interim Target GPCD	Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
126	198	-	-	-	-	126	126	**YES**

NOTES: Adjustment was not used.

Chapter 6 System Supplies

This chapter will describe and quantify the current and projected sources of water available to CSA 70J. A description and quantification of potential recycled water uses and supply availability is also included in this chapter. CSA 70J has historically utilized groundwater as its sole source of water supply. Water supply sources and quantities are described in more detail in the following sections.

6.1 Purchased or Imported Water

Historically CSA 70J has relied solely on groundwater pumped from its own wells (described further in Section 6.2). CSA 70J has a Free Production Allowance (FPA) available to pump groundwater to use as a potable water source. Once CSA 70J 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.

6.2 Groundwater

Groundwater has been the CSA 70J's sole source of water supply. CSA 70J pumps groundwater from the Alto Subarea of the Mojave Basin Area as defined in the Judgment. 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 Mojave River Groundwater Basin overlies a broad hydrologic region also defined in DWR Bulletin 118 as the South Lahontan (Region 6) hydrologic region. CSA 70J boundaries overly the following DWR basin as identified in Bulletin 118:

- Basin 6-42, Upper Mojave River Valley

The entire Mojave Groundwater Basin encompasses a total of 1,400 square miles and has an estimated total water storage capacity of nearly 5 million acre-feet (MAF) (Bookman-Edmonston Engineering, Inc., 1994). For the purposes of this report, the large groundwater basin area is referred to as the Mojave Basin Area, coinciding with the adjudicated basin boundaries. The Mojave Basin Area has been further divided into subareas for groundwater management and/or adjudication purposes. Subareas within the Mojave River Groundwater Basin include Oeste, Alto, Este, Centro and Baja as defined in the Mojave Basin Judgment (see Appendix F for text of the Judgment) and are shown on Figure 6-2. CSA 70J overlies the Alto subarea, which is in the southern portion of the Mojave Basin Area. Figure 6-3 shows the adjudicated subarea boundaries as compared to service area boundaries, including all of the urban water suppliers in the basin.

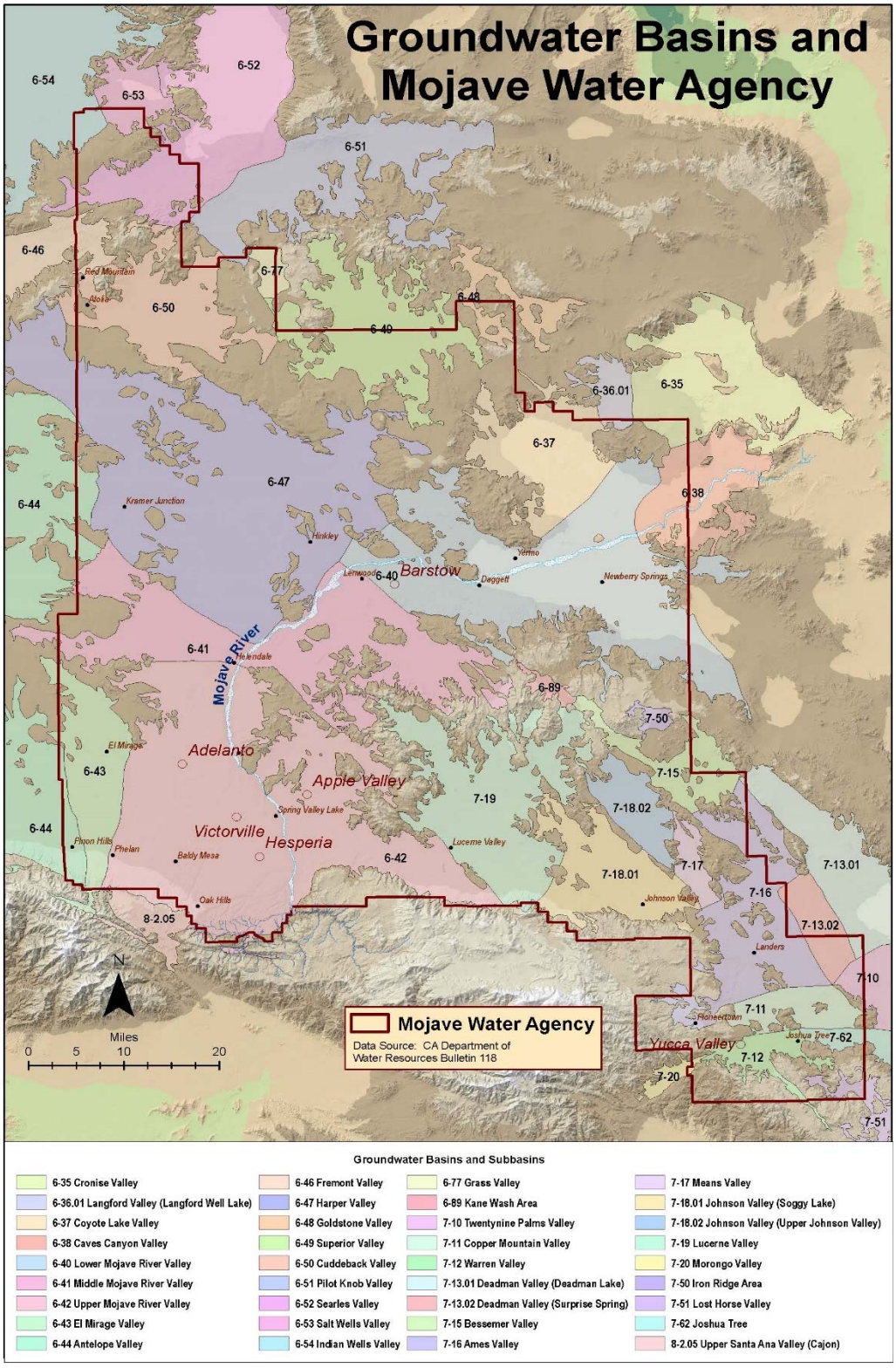

Figure 6-2. DWR Groundwater Basins with MWA

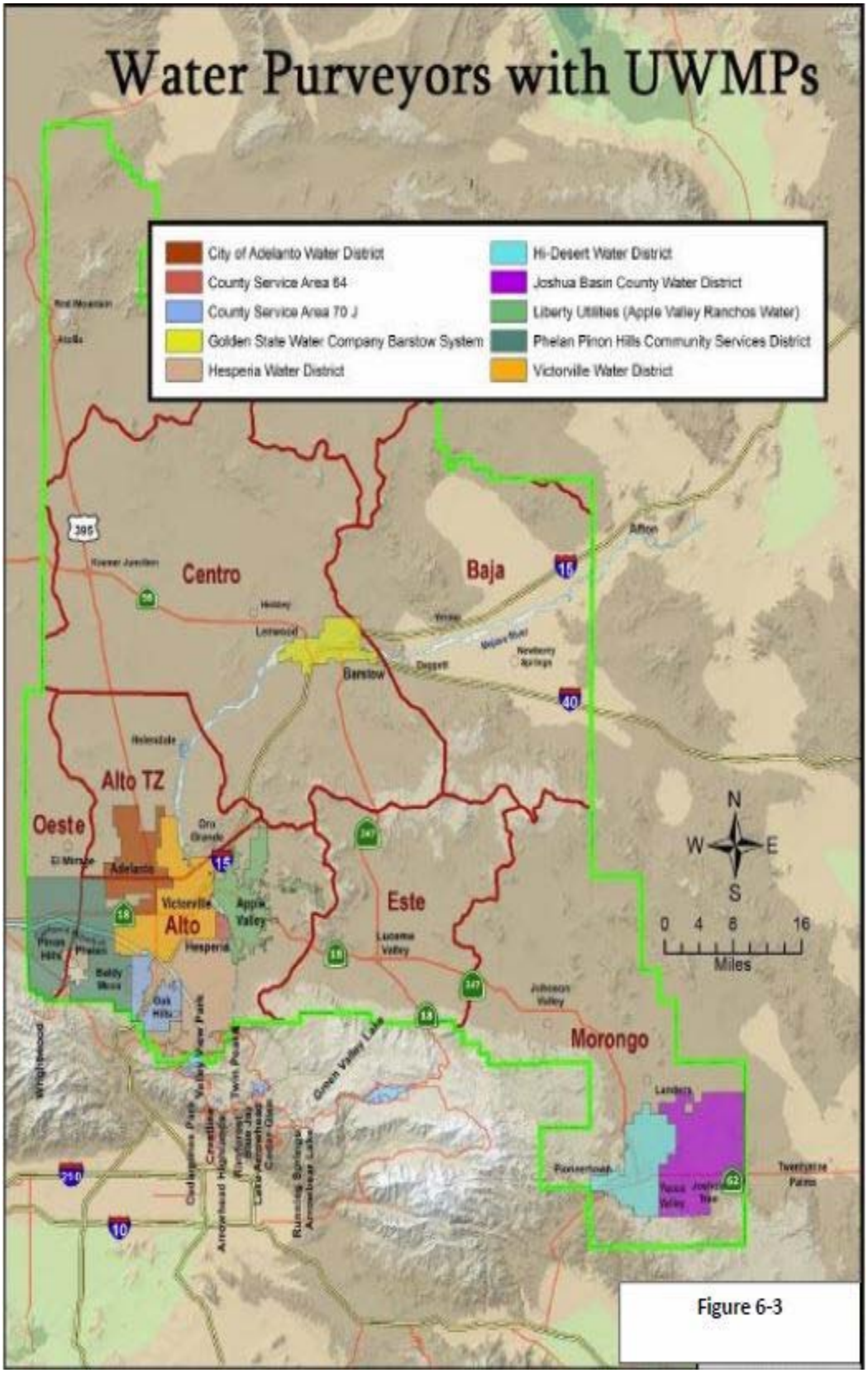

Figure 6-3. Urban Water Supplier Boundaries

In the Mojave Basin Area, the Mojave River is the largest stream, originating near the Cajon Pass - a low elevation gap in the San Bernardino Mountains. With the exception of small streams in the San Gabriel and the San Bernardino Mountains and short reaches of the Mojave River, there are no perennial streams in the Mojave Basin Area. Prior to groundwater development, the Mojave River flowed at a series of discharge areas near Victorville, at Camp Cady, at Afton Canyon, and at other areas where faults cause groundwater to discharge at land surface, such as near the Helendale or the Waterman Faults. Under present-day conditions the Mojave River does not flow perennially except at the Narrows near Victorville, downstream from the VVWRA Regional Wastewater Treatment Plant (RWWTP) (an area known locally as the "Transition Zone"), and near Afton Canyon.

The Mojave River Groundwater Basin Area is essentially a closed basin – very little groundwater enters or exits the basin. However, within the basin groundwater movement occurs between the different subareas, as well as groundwater-surface water and groundwater-atmosphere interchanges. Groundwater is recharged into the basin 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 enhanced 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.

Recent investigations by the MWA, US Geological Survey (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 aerial extent of the Floodplain and Regional aquifers is shown on Figure 6-4. In the Mojave Basin Area, Alto, Centro, and Baja subareas contain both the Floodplain Aquifer and the Regional Aquifer while Oeste and Este subareas only contain the Regional Aquifer.

The Floodplain Aquifer is composed of sand and gravel weathered from granitic rocks of the San Gabriel and the 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 (Figure 6-4). Recharge is greater near the mountain front where surface flows are more frequent.

The Regional Aquifer underlies and surrounds the Floodplain Aquifer with interconnected alluvial fan and basin fill deposits that drain toward the Mojave River (Figure 6-4). In some areas, 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 altitudes of the San Gabriel and San Bernardino Mountains, and smaller amounts of runoff from local intermittent streams.

Groundwater production was initially developed along the Mojave River in the early 1900s, and prior to recent population growth, most of the groundwater production occurred in the Floodplain Aquifer. In the mid-1950's, 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 the re-distribution 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.

Essentially all water supplies within MWA are pumped from the local groundwater basins and groundwater levels generally have been declining for the past 50 years or more. Adjudication proceedings were initiated due to concerns that rapid population growth would lead to further overdraft. The resulting Mojave Basin Area Judgment requires that additional surface water be imported to help balance the basins.

Alto subarea 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. Water levels in the western portion of Alto in the Regional Aquifer exhibit declines consistent with heavy pumping and limited local recharge. Water levels in the eastern portion of Alto indicate similar 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 the 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 water quality problems. As a whole, the Alto subarea appears to be in regional balance although portions of the subarea have shown continued historical declines.

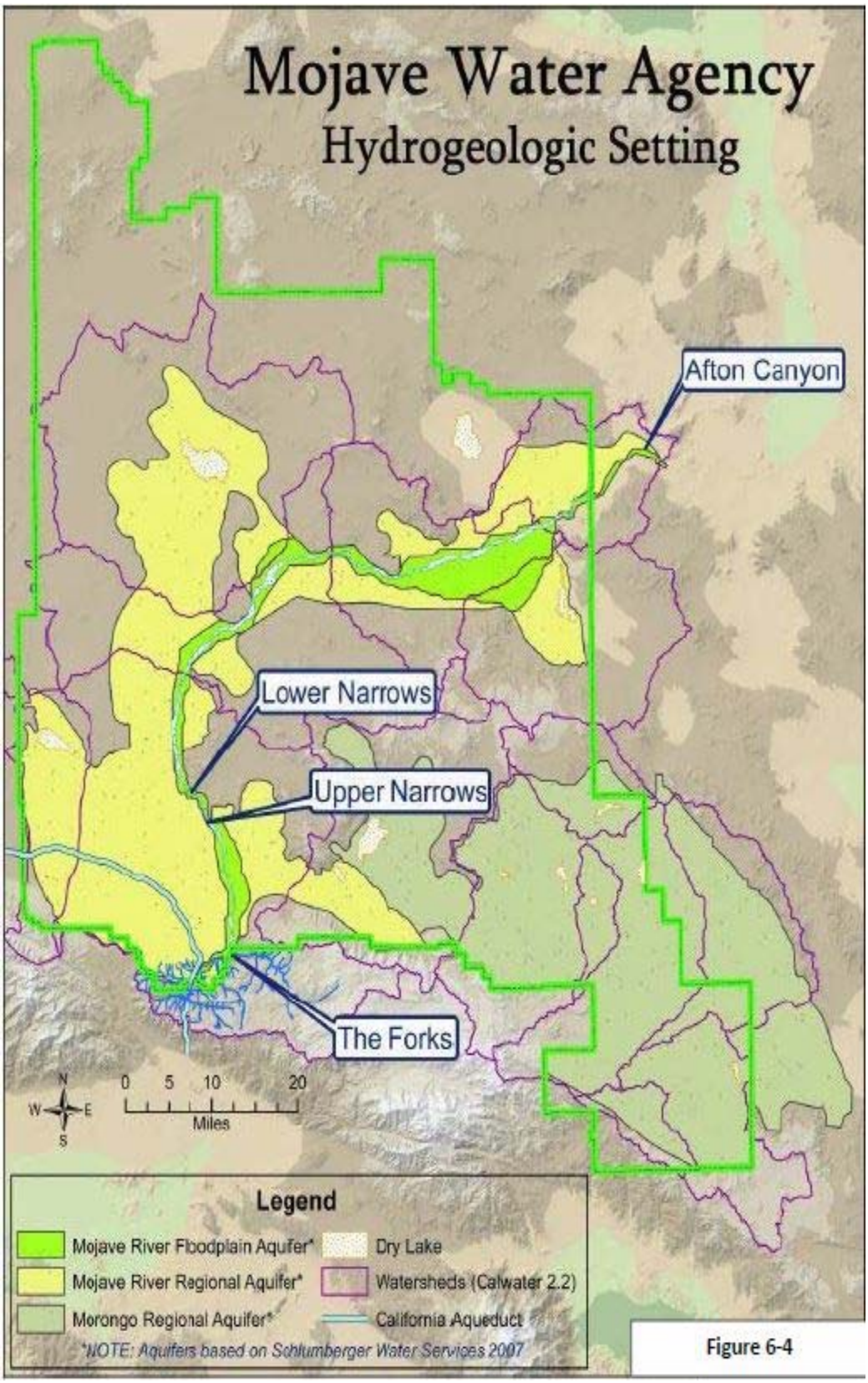

Figure 6-4. Hydrogeologic Setting

6.2.2 Groundwater Management

CSA 70J is entirely within, and pumps groundwater entirely from, an adjudicated basin. The final Judgment for the Mojave Basin Area is attached to this UWMP as Appendix F. As described earlier, the Judgment divided the basin into five subareas, and CSA 70J is located in the Alto subarea as shown on Figure 6-3. The Judgment established a physical solution to overdraft conditions within the basin, which included the identification and eventual ramping down of groundwater production rights, as well as the importation and recharge of SWP water to offset over-pumping.

The Judgment assigned Base Annual Production (BAP) amounts to each party (producer) in the basin using more than 10 AFY, based on historical production. Production Safe Yield (PSY) was also determined for each subarea within the Mojave River Groundwater Basin for each year. The PSY in each subarea is assumed to equal the average net natural water supply plus the expected return flow from the previous year's water production. Users are assigned a variable Free Production Allowance (FPA), which is a uniform percentage of BAP set for each subarea as an annual maximum amount of water a producer can withdraw without incurring a Replacement Obligation. This percentage is reduced or "ramped-down" over time until total FPA comes into balance with PSY. The current FPA for the Alto Subarea is 80 percent of BAP for agriculture and 60 percent of BAP for municipal and industrial, and is currently within five percent (5%) of PSY. CSA 70J is categorized as municipal and industrial and therefore is allowed an FPA of 60% of its BAP.

If any producer pumps more than the assigned FPA, then it incurs Replacement Water Obligations to the Watermaster (MWA) equal to the cost to purchase the amount of production in excess of the FPA. MWA then purchases and recharges to the groundwater imported water from the SWP to satisfy those obligations.

In June 2014, MWA formally adopted its 2014 Regional Water Management Plan Update (Regional WMP), which also serves as the Groundwater Management Plan (GWMP). The 2014 Regional WMP both complements and formalizes a number of existing water supply and water resource planning and management activities in the MWA service area that overlies the Alto subarea of the Mojave River Groundwater Basin and several groundwater basins, as defined by DWR in Bulletin 118.

6.2.3 Overdraft Conditions

CSA 70J is entirely within an adjudicated basin. Therefore, this section does not apply.

6.2.4 Historical Groundwater Pumping

Groundwater pumping by CSA 70J ranges from 1,513 AF to 1,906 AF over the past five years from 2011 to 2015. Historical groundwater pumping volumes by CSA 70J for the last five years is summarized in Table 6-1. As described is 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 user 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 pumping within the basin. Water levels in the basin have generally remained stable because of implementation of the physical solution contained in the Judgment (Appendix F).

Table 6-1 Retail: Groundwater Volume Pumped						
☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type *Drop Down List* *May use each category multiple times*	Location or Basin Name	2011	2012	2013	2014	2015
Add additional rows as needed						
Alluvial Basin	Mojave Basin Area	1,824	1,870	1,906	1,784	1,513
	TOTAL	1,824	1,870	1,906	1,784	1,513
NOTES: Taken CSA 70J Production Consumption Information provided by the District.						

6.3 Surface Water

CSA 70J does not directly divert or use surface water. Volumes of water projected for delivery are included in Tables 6-9. Surface water is not used as a potable water source.

6.4 Stormwater

CSA 70J does not have a stormwater recovery system in place and does not use stormwater as a potable water source.

6.5 Wastewater and Recycled Water

CSA 70J does not use recycled water. The following tables have been filled out showing that CSA 70J does not use wastewater or recycled water as a potable source. Many of the residents in CSA 70J use septic systems for wastewater purposes and returning flows to be treated and recycled is not possible at this time.

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015	
☑	There is no wastewater collection system. The supplier will not complete the table below.

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015	
☑	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area	
☑	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual	
☑	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.

6.6 Actions to Encourage and Optimize Future Recycled Water Use

CSA 70J has yet to develop incentives to encourage recycled water use (as shown in Table 6-6). The incentive's methods will be developed if implementation of CSA 70J's recycled water program begins.

Table 6-6 Retail: Methods to Expand Future Recycled Water Use	
☑	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.

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 70J 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 70J, and CSA 70J 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 70J to consider development of desalination, 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 70J 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 70J 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 70J/MWA from the SWP contractor. A list summarizing the groundwater desalination plans of other SWP contractors is not available; however, CSA 70J would begin this planning effort in coordination with MWA should the need arise.

Because CSA 70J is not in a coastal area, it is neither practical nor economically feasible for CSA 70J to implement a seawater desalination program. However, similar to the brackish water and groundwater desalination opportunities described above, CSA 70J 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

In addition to groundwater, CSA 70J and MWA continue to explore opportunities to purchase water supplies from other water agencies and sources. Transfers, exchanges, and groundwater banking programs are important opportunities to investigate in order to enhance the long-term reliability of CSA 70J's supplies currently available to meet the demands.

6.8.1 Exchanges

CSA 70J 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

CSA 70J has taken advantage of water transfers with other agencies, individual water rights holders, and between County Service Areas for the last ten (10) plus years.

Voluntary water transfer programs are an opportunity available to CSA 70J 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 70J, 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 70J has production and treatment programs planned in 2017. CSA 70J plans to construct Well No. 6 which is expected to increase the water supply for the service area by approximately 2,020 AF/YR. Hexavalent Chromium has been determined to be problematic in the CSA 70J service area nearby some existing production wells. For this reason, future water projects will include the treatment and removal of Hexavalent Chromium from the groundwater source. Removing Hexavalent Chromium from the water source will improve supply reliability, but it is difficult to quantify the increase in supply that would occur in the service area. The Hexavalent Chromium treatment is essential to keep the current wells in production. If the wells begin to produce a quality of water that fails the Hexavalent Chromium MCL, production will be lost and supply interruptions could occur.

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

☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
☑	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
41	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	Expected Increase in Water Supply to Agency
	Drop Down List (y/n)	*If Yes, Agency Name*			*Drop Down List*	*This may be a range*
Add additional rows as needed						
Construction of Well No. 6	No		Provide CSA 70J with another groundwater production well	2017	All Year Types	2,020 AF/YR
Chromium 6 Treatment	No		Treat affected wells to address MCL concerns	2017	All Year Types	N/A

NOTES: The future water projects include both water production and water treatment for CSA 70J.

6.10 Summary of Existing and Planned Sources of Water

In 2015, all of CSA 70J's water supplies were from groundwater pumped from the Mojave Basin Area. This source of supply is described in more detail in Section 6.2. Water supplies in 2015 are depicted in Table 6-8 below.

Table 6-8 Retail: Water Supplies — Actual

Water Supply	Additional Detail on Water Supply	2015		
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		Actual Volume	Water Quality *Drop Down List*	Total Right or Safe Yield *(optional)*
Add additional rows as needed				
Groundwater		1,513	Drinking Water	609
	Total	1,513		609
NOTES:				

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 Mojave Basin Area) is detailed in Section 6.2. The "Purchased or Imported" supply (water purchased from MWA that is above CSA 70J FPA) is detailed in Section 6.1. The "Recycled Water" supplies do not exist for CSA 70J as mentioned 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*									
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		**2020**		**2025**		**2030**		**2035**		**2040** *(opt)*	
			Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*
Add additional rows as needed											
Groundwater		1,908		2,140		2,411		2,686		2,939	
	Total	1,908	0	2,140	0	2,411	0	2,686	0	2,939	0
NOTES: Information from MWA UWMP Table 2-5.											

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 70J water service area. This Plan helps CSA 70J 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

Per the Mojave Basin Area Judgment, CSA 70J is assigned FPA of 609 AFY. The Mojave Water Agency, the Watermaster for the Judgment, has contracted with the California Department of Water Resources (DWR) for delivery of SWP water, providing an imported water supply for recharging the Mojave River Groundwater Basin. Each water supply source has its own reliability characteristics. In any given year, the variability in weather patterns around the state may affect the availability of supplies to CSA 70J's service area. Typically, water management in southern California utilizes local groundwater supplies more heavily when imported surface supplies are less available due to dry conditions in the north, and larger amounts of imported surface supplies are utilized during periods when northern California has wetter conditions. This pattern of "conjunctive use" has been in effect since SWP supplies first came to the CSA 70J area. SWP supplies have supplemented the overall supply of the region including CSA 70J's service area, which previously depended solely on local groundwater supplies. While the variability in SWP supplies affects the ability of MWA to meet the overall water supply needs for the larger Mojave River Groundwater Basin service area; for CSA 70J, the added SWP supply is recharged into the groundwater basin in wet and dry years, thus providing needed stability to the adjudicated groundwater basin.

Each SWP contractor's Water Supply Contract contains a "Table A" amount that identifies the maximum amount of water that contractor may request. However, the amount of SWP water actually allocated to 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, environmental, and operational constraints, and the total amount of water requested by the contractors. The availability of SWP supplies to MWA and the other SWP contractors is generally less than their full "Table A" amounts in many years and can be significantly less in very dry years.

The quality of water sources for CSA 70J's service area is good, but with minor problems related to Hexavalent Chromium. CSA 70J's direct sources of potable water supply are entirely from groundwater and supplies are augmented with imported (banked SWP) water. Based on information contained in CSA 70J's Consumer Confidence Reports, from 2013 to 2015 only two exceedances of drinking water Maximum Contaminant Levels (MCL) occurred. These exceedances occurred in 2014 and 2015 when the State Water Resources Control Board (SWRCB) reduced the MCL for Hexavalent Chromium to 10 parts per billion (ppb). In 2014, some of CSA 70J's wells

exceeded the newly-reduced Hexavalent Chromium MCL. Potential treatment methods for Hexavalent Chromium include blending of water sources to provide a blended concentration that is below the MCL, adjust the depth of pumping for the production wells in order to get a better quality of water, and pilot testing has been conducted to determine the effectiveness of Weak Base Anion treatment method. On average CSA 70J-wide, Hexavalent Chromium levels have been as high as 19.0 ppb and can be considered above the MCL for Hexavalent Chromium. See Appendix H for the latest CSA 70J Consumer Confidence Report. All other constituents tested were well below the MCL. Hexavalent Chromium is not a huge health concern, prolonged consumption in large doses can lead to a greater risk in cancer. CSA 70J is investigating the best and most economical solutions available. If the issues with Hexavalent Chromium are addressed in a timely manner, water quality issues will not affect supply availability for CSA 70J in the future.

7.2 Reliability by Type of Year

Currently, CSA 70J has one source of direct water supply which is groundwater from the adjudicated Mojave River Groundwater Basin. 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 70J 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 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 70J can rely entirely on groundwater during dry years, allowing for 100% of average supply to be available even during dry years.

Table 7-1 Retail: Basis of Water Year Data			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	**Available Supplies if Year Type Repeats**	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year	1922-2003	See Note Below	100%
Single-Dry Year	1977	See Note Below	100%
Multiple-Dry Years 1st Year	1931	See Note Below	100%
Multiple-Dry Years 2nd Year	1932	See Note Below	100%
Multiple-Dry Years 3rd Year	1933	See Note Below	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 70J relies entirely on groundwater and therefore 100% of the volume available will be supplied by groundwater.			

Groundwater

In both dry year conditions (single-dry year and multiple-dry years), the groundwater supply is assumed to remain 100 percent available because the long-term average of the groundwater basin includes dry periods, and any single or multiple-year dry cycle does not impact the long-term yield of the basin.

7.3 Supply and Demand Assessment

The available supplies and water demands for CSA 70J's service area were analyzed to assess the service area's ability to satisfy demands during three scenarios: an average water year, single-dry year, and multiple-dry years. The tables in this section present the supplies and demands for the various drought scenarios for the projected planning period of 2020-2040 in five-year increments. As shown in the analyses, CSA 70J has adequate supplies to meet demands during average, single-dry, and multiple-dry years throughout the 25-year planning period because of the availability of groundwater.

Normal Year

Table 7-2 summarizes CSA 70J's water supplies available to meet demands over the 25-year planning period during an average/normal year. Demands are shown with the effects of an assumed urban demand reduction (conservation) resulting from SB X7-7 imposed reductions.

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 *(Opt)*
Supply totals *(autofill from Table 6-9)*	1,908	2,140	2,411	2,686	2,939
Demand totals *(autofill from Table 4-3)*	1,908	2,140	2,411	2,686	2,939
Difference	0	0	0	0	0
NOTES:					

Single Dry Year

The water supplies and demands for CSA 70J's service area over the 25-year planning period were analyzed in the event that a single dry year occurs, similar to the drought that occurred in California in 1977. Table 7-3 summarizes the existing and planned supplies available to meet demands during a single-dry year. Demand during dry years was assumed to decrease by 10 percent due to state and/or local conservation mandates that will be implemented during drought conditions.

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	1,717	1,926	2,170	2,417	2,645
Demand totals	1,717	1926	2,170	2,417	2,645
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.					

Multiple Dry Years

The water supplies and demands for CSA 70J's service area over the 25-year planning period were analyzed in the event that a multiple-dry year (up to three years) event occurs, similar to the drought that occurred during the years 1931 to 1934. Table 7-4 summarizes the existing and planned supplies available to meet demands during multiple-dry years. Demand during dry years was assumed to decrease by 10 percent, similar to the single dry year scenario, due to likely implementation of conservation measures and other actions to reduce demands. While 28 percent conservation mandates have been imposed on CSA 70J by the State of California during the current drought in 2015 and 2016, to be conservative a lower rate of conservation has been assumed for future drought planning purposes.

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison

		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	1,717	1,926	2,170	2,417	2,645
	Demand totals	1,717	1,926	2,170	2,417	2,645
	Difference	0	0	0	0	0
Second year	Supply totals	1,717	1,926	2,170	2,417	2,645
	Demand totals	1,717	1,926	2,170	2,417	2,645
	Difference	0	0	0	0	0
Third year	Supply totals	1,717	1,926	2,170	2,417	2,645
	Demand totals	1,717	1,926	2,170	2,417	2,645
	Difference	0	0	0	0	0

NOTES:

7.4 Regional Supply Reliability

CSA 70J 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 Section 9).

Chapter 8 Water Storage Contingency Planning

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 70J plans to respond to such emergencies so that emergency needs are met promptly and equitably.

CSA 70J 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 70J.

CSA 70J has water rights to the adjudicated Mojave River Groundwater Basin (Basin). The Basin's groundwater supply is replenished by MWA purchasing imported water from the SWP, when available, and recharging it into the Basin. During past shortages, CSA 70J 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, the CSA 70J has an emergency interconnection with the City of Hesperia on the east side of Interstate 15 and an emergency connection with Phelan Pinon Hills Community Service District of the west side of Interstate 15. Interties could be used in a time of crisis.

8.1 Stages of Action

Per Ordinance number SD 15-04, CSA 70J has developed four stages of conservation based on the level of drought emergency. The conservation measures range from drought warning to drought emergency measures. The conservation stages are listed in Table 8-1.

Table 8-1 Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction[1] *Numerical value as a percent*	Water Supply Condition (*Narrative description)*
Add additional rows as needed		
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 Ordiance No. SD 15-04		

Emergency response stage actions become effective when the Director declares that CSA 70J 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 judgment concerning the degree of the immediate or future supply deficiency.

- **Conservation Stage 1 – Drought Watch**
  During Conservation Stage 1, normal conditions shall be in effect when CSA 70J 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 percent from a comparative year selected by the Director or otherwise mandated by the State.
- **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 40% 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 percent from a comparative year, as designated by the Director or as may otherwise be mandated by the State.

- **Conservation Stage 4 – Drought Emergency**
  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 percent from a comparative year, as designated by the Director or as may otherwise be mandated by the state.

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 70J. 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 70J'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 or 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 ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? *Drop Down List*
Add additional rows as needed			
0		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 a week	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	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 permision	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:			

8.3 Penalties, Charges, Other Enforcement of Prohibitions

Pursuant to Section 377 of the Water each violation of this ordinance may be prosecuted as a) misdemeanor, publishable 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.

8.4 Consumption Reduction Methods by Agencies

CSA 70J will manage water supplies to minimize the social and economic impact of water shortages. The Contingency Plan is designed to provide a minimum 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 70J 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 ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference *(optional)*
Add additional rows as needed		
1	Improve Customer Billing	Bill for usage
1	Reduce System Water Loss	Improve System
NOTES:		

8.5 Determining Reductions

Water use is determined by meter records, which are read and recorded bi-monthly. All of CSA 70J's customers are metered; CSA 70J will use these devices to monitor the CSA 70J's actual reductions in water use.

8.6 Revenue and Expenditure Impacts

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 70J 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 70J's budget if water sales decrease dramatically. CSA 70J would make up for declining revenues by reducing operating and maintenance expenses, deferring some capital improvement projects until after the situation improves; deferring the purchase of computers, upgrades, and publications, and using the funds held in reserve for replacement of facilities.

8.6.1 Drought Rate Structures, Surcharges

CSA 70J does not currently have a drought rate structure or surcharge, other than what is described in Section 8.6. Because CSA 70J's rate structure is split between a fixed water availability charge and usage charges, it is not anticipated that surcharges are needed.

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 70J has built financial reserves that can be utilized for a limited time to cover expenses.

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 G.

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 70J'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 24 hour period. For example, following the 1994 Northridge earthquake, Edison was able to restore power within 19 hours. Edison experienced extensive damage to several key power stations, yet was still able to recover within a 24 hour timeframe. It is possible, although highly unlikely, that severe damage to southern California electric utility infrastructure could cause outages lasting 4 to 5 days.

CSA 70J 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. A backup power source electrical connection at every pump station to provide peak water demands is available via portable generator.

In the event of a natural or human caused disaster that could affect CSA 70J's ability to provide potable water for up to 30 days, the following measures would be implemented as needed:

- CSA 70J's Boil Water Notification Program would be activated. The notice would be provided to local radio stations and newspapers. CSA 70J'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 70J emergency services.
- Local bottled water companies would be contacted to begin deliveries of potable water tanks to selected sites within CSA 70J. The trucks would be manned by CSA 70J personnel to distribute water for drinking purposes.

A public information program would be initiated. A member of CSA 70J staff would appear on local television and provide daily reports to the local newspaper and radio stations. Members of the CSA 70J 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 1,550-1,670 AFY during the next three years. When comparing these supplies to the demand projections, CSA 70J 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	1,564	1,615	1,666

NOTES:

Chapter 9 Demand Management Measures

This chapter describes the water Demand Management Measures (DMMs) implemented by CSA 70J as part of the effort to reduce water demand. CSA 70J is subject to the Urban Water Management Planning Act, AB 1420 and the SB X7-7 requirement. CSA 70J realizes the importance of DMMs to ensure a reliable of future water supply and is committed to implementing water conservation to maximize sustainability in meeting future water needs for its customers.

Water conservation is important in the High Desert area of Southern California due to the limited groundwater supply. CSA 70J is a member of the Alliance for Water Awareness and Conservation (AWAC), formed in 2003 to develop a regional water conservation program. One of the goals of the AWAC is to provide "local communities with tools to effectively reduce per capita consumption to targeted goals." CSA 70J implements a number of the DMMs with assistance from AWAC. CSA 70J is also within the Mojave Water Agency service area, and has partnered with MWA to implement several water conservation incentives and rebate programs.

9.1 Demand Management Measures

The following sections describe the various programs and conservation activities implemented by CSA 70J. This section is organized to cover each of the six broad categories required for retail agencies, as well as DMMs that fall under the "other" category. Where applicable, the Nature and Extent of each DMM is described in the applicable area within Section 9.1.

9.1.1 Water Waste Prevention Ordinances

CSA 70J adopted Ordinance No. SD 15-04 preventing wasteful use of water. CSA 70J Water Code prohibits consumers from knowingly permitting leaks or wasting water. CSA 70J may discontinue service if conditions are not immediately corrected after giving the consumer notice.

Ordinance No. SD 15-04 outlines actions to address emergency or drought-related water shortages.

In an effort to make customers aware of wasted water runoff from their properties, CSA 70J staff will contact customers if they see a violation taking place. Often CSA 70J staff will leave a door hanger containing the Notice of Violation and Warning of Penalties. This notice will contain a written warning accompanied by a copy of Ordinance SD 15-04.

9.1.2 Metering

All of CSA 70J's customers are metered and billed with commodity rates. Customers are billed bimonthly. CSA 70J has begun upgrading a portion of the meters. These new meters provide consumption tracking to a resolution of one tenth of a cubic foot. Additionally, hourly meter readings will be uploaded to an online database that customers can access through the internet. Customers may track their usage and receive usage alerts on their smartphone or tablet.

9.1.3 Conservation Pricing

All of CSA 70J customers are charged a Facility Charge based on meter size. CSA 70J meter sizes include ¾", 1", 11/2", 2", 3", 4", 6", and 8" and they range in monthly fee from $33.40 for the ¾" meter to $972.50 for the 8" diameter meter. Bi-monthly water consumption is divided into 6 tiers

based on Water Consumption. Low consumption results in a bi-monthly Fee per hcf of approximately $2.09 and the highest consumption tier results in a bi-monthly Fee per hcf of approximately $3.77.

9.1.4 Public Education and Outreach

CSA 70J participates and promotes water conservation through a variety of information programs and media outlets (Table 9-1).

Nature

CSA 70J provides water conservation information through its new homeowner's packet that includes a water-efficient landscaping guide. CSA 70J's website also has a section dedicated to water conservation. It includes information regarding current County-wide restrictions, Statewide restrictions, and information on ways for customers to reduce consumption for indoor and outdoor use. Restrictions and other conservation mandates are also provided with customer's bills.

9.1.5 Programs to Assess and Manage Distribution System Real Loss

CSA 70J has completed AWWA's M36 Water Loss analysis, which consisted of a component analysis of leaks into "revenue" and "non-revenue" categories, among others, and an economic analysis of recoverable loss. Results of the preliminary audits show a water audit validity score of 59 for both and an Infrastructure Leakage Index (ILI) of 1.43. A validity score between 71 and 90 indicates that the validity of the data is good, with some opportunity for refinement. With a score of 59, CSA 70J needs to refine the audit to increase the score. According to general guidelines, an ILI below 1.0 indicates very low leakage levels among the top performing utilities or possible flaws in the data. CSA 70J having a value above 1.0 means that the potential for leaking infrastructure is possible. The audit highlights some strengths and weaknesses of the system. CSA 70J is evaluating the preliminary results and recommendations of the audit and will continue to update the audit as more information is received and reviewed.

Nature

CSA 70J has an ongoing maintenance program that helps minimize water losses. This program helps keep CSA 70J's production system in optimal condition, thus reducing water losses. This program includes, among other things, daily inspections of water wells and pumping equipment, weekly inspections of water tanks and exercising critical system valves.

Extent

CSA 70J's Water District's Distribution Division consists of 9 personnel who perform proactive and reactive maintenance to the distribution system and are available to fix leaks during their 8 hour work shift. Also, 3 personnel from the Customer Service division perform the same duties as those noted above. During non-working hours, CSA 70J dedicates one (1) Field Personnel and one (1) Field Supervisor to work a standby duty shift in order to respond to leaks and other situations. These employees must respond to a call within 15-30 minutes and be on-site within one (1) hour. During non-business hours CSA 70J utilizes an after-hours answering service to receive phone calls and dispatch crews accordingly.

9.1.6 Water Conservation Program Coordination and Staffing Report

Nature

CSA 70J staff assists in the development and presentation of department programs related to public information programs involving the conservation of groundwater supply in landscaping and irrigation, residential and business efficiency, and groundwater protection.

Extent

CSA 70J uses staff to check on consumers to ensure that the 28% reduction is being met and to enforce new regulations.

9.1.7 Other Demand Management Measures

The following sections describe the programs being implemented in the service area.

9.1.8 Residential Water Audit Program

Natures

CSA 70J has an audit program targeting high-use Single Family (SF) and Multi-family (MF) customers that are identified based on billing data; these customers are contacted and offered free audits. Audits are also offered to walk-in customers at the local Customer Service Area office.

During an audit the CSA 70J staff will assess both the indoor and landscape uses on the property, identify leaks and educate the customer about ways to improve efficiency. A free conservation kit is also offered to the customer, which contain low-flow shower heads, sink aerators, pistol grip hose nozzles, and leak detection tablets.

Extent

From 2011 to 2015, CSA 70J performed 201 water audits, an average of 40 per year.

9.1.9 High Efficiency Toilets

Nature

CSA 70J, in partnership with MWA, offers High Efficiency Toilets (HET) to customers living in single family dwellings built prior to 1992. The high efficiency toilets use 1.28 gallon per flush (gpf) and the pre-1992 toilets use 3.5 gpf or more.

Extent

In 2015, the District provided 12 rebates for low flow toilets. The total water savings from this program is estimated to be 0.90 AF by 2020. CSA 70J intends to continue implementing the HET program at current levels upon receiving grant funds through MWA.

9.1.10 Cash for Grass Program

Nature

CSA 70J, in partnership with MWA, offers property owners an incentive to remove lawn and replace it with water-efficient landscaping through the Cash for Grass Program.

Extent

Beginning in February 2008, rebates were offered to customers and property owners at $0.50 per square foot to replace lawn with eligible low water-use landscaping. However, the program ended in 2015. The State of California continues to offer a cash for grass program that CSA 70J customers can participate in.

9.1.11 Smart Irrigation Controllers

Nature

CSA 70J provides rebates to qualified residents for the purchase of Smart Irrigation Controllers (SIC). SICs help residents save water by automatically adjusting their irrigation system based on current weather conditions. Residents receive a free controller and weather station after attending an instructional class on the installation and use of their devices.

Extent

CSA 70J distributed 2 SIC rebates, totaling nearly $200, to residents in 2015.

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 70J met its 2020 Water Use Target of 176 gallons per capita per day. In 2015, CSA 70J's Gross Water Use was 126 GPCD (see Chapter 5).

Although the CSA 70J 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. CSA 70J has and continues to encourage community participation in its on-going water management activities and specific water related projects. CSA 70J's public participation programs include mailings, public meetings, and web-based communication. CSA 70J's water conservation program involves a variety of public awareness programs. The Board of Supervisors for CSA 70J has regularly scheduled meetings that include public comment on water issues. Table 10-1 presents a summary of the notifications to the CSA 70J 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
Add additional rows as needed		
	☐	☐
	☐	☐
	☐	☐
County Name *Drop Down List*	**60 Day Notice**	**Notice of Public Hearing**
Add additional rows as needed		
San Bernardino County	☐	☐
	☐	☐

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 70J began preparation of this Plan for its service area in 2015. 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 70J 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 70J'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.

California Department of Water Resources (DWR). 2015. *2015 Guidebook for Urban Water Suppliers.* Sacramento, California.

Kennedy/Jenks Consultants. 2011. 2010 Urban Water Management Plan. Mojave Water Agency, Apple Valley, California.

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List of Appendices

Appendix A – Water Conservation Act

Senate Bill No. 7

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.

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Appendix B – UWMP Checklist

Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.1	**Section 1.2**
10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5.2	**Section 1.3**
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**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 3.4**
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**
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	**Section 4.5 N/A**
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	**No Adjustment Has Been Made**
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 Retailer**
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 is 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 6.10**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 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 None Planned**
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 Retailer**
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 9.1**
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** **Retailer**
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** **Not a Member of CUWCC**
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 10.1**
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 10.1**
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 10.3**
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 10.3**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Section 10.3**
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

Mojave Water Agency

December 2015

BEACON ECONOMICS

Mojave Water Agency Population Forecast

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Mojave Water Agency

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Contents

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.

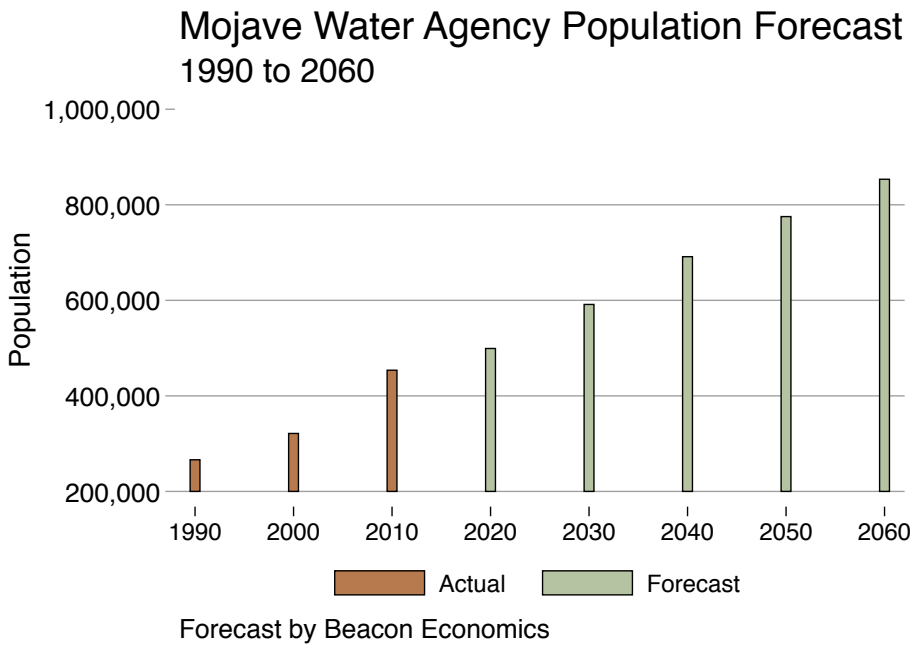
- Barstow: Out of the incorporated cities Barstow experienced some of the slowest growth from 1990 to 2010 – and the 2011 to 2015 estimates indicate the same trend. As such, this city is expected to be one of the slower growing over the life of the forecast.

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 it's 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]

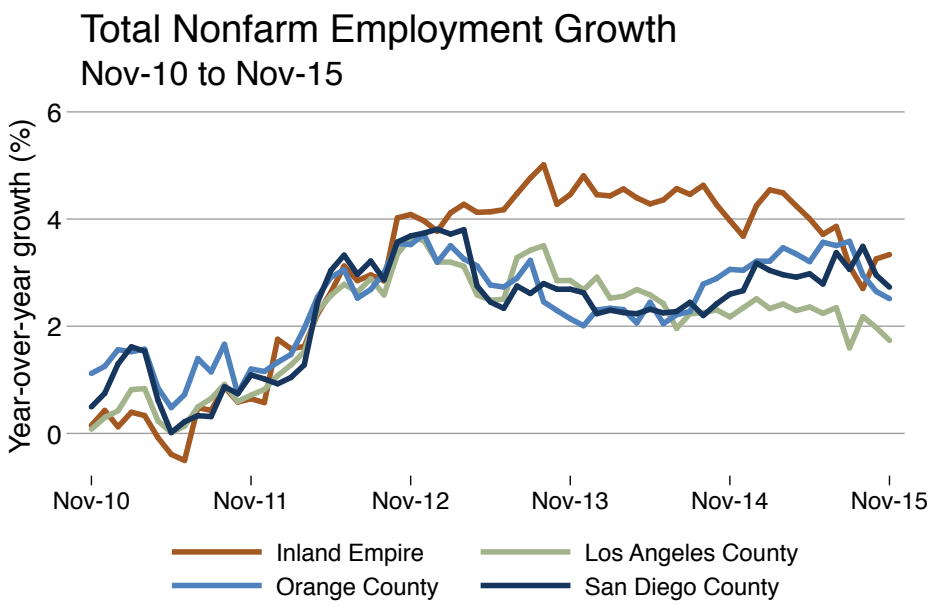
[1]For a more detailed description of the DOF methodology see State of California, Department of Finance, State and County Population Projections by Race/Ethnicity, Sex, and Age 2010-2060, Sacramento, California, December 2014.

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.



Source: California Employment Development Department

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 nonfarm job growth average 3.8%, noticeably higher than Los Angeles County (2.5%), Orange County (2.8%), and San Diego County (2.7%).

California Taxable Sales Growth (%)

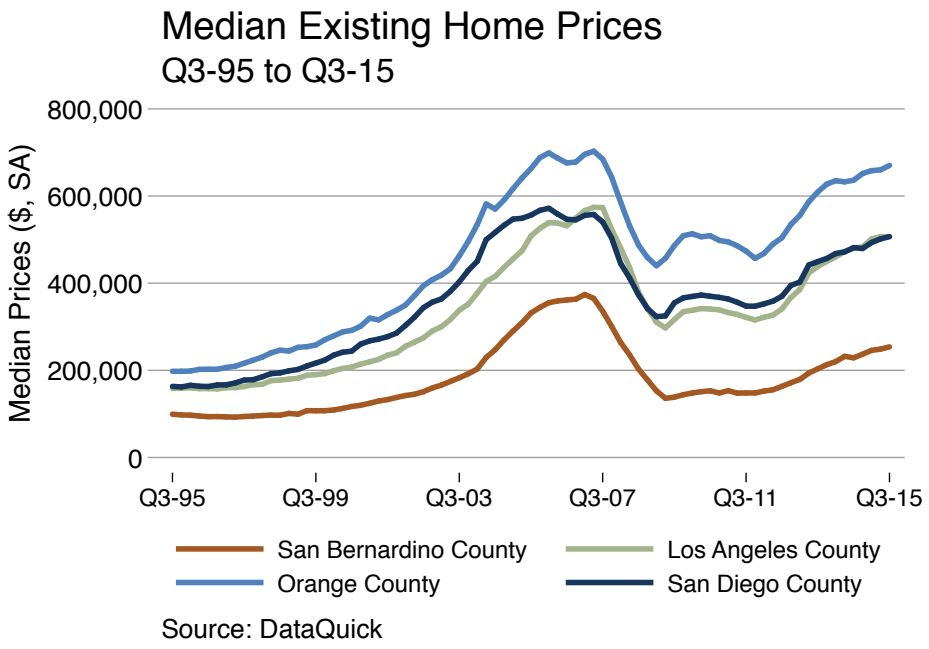
County	2009 to 2014	2015 YTD
Los Angeles	31.0	4.0
Orange	31.1	2.3
San Bernardino	38.7	7.6
San Diego	32.6	3.6

Source: California Board of Equalization

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.



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.

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

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.

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

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. Hespe-

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.

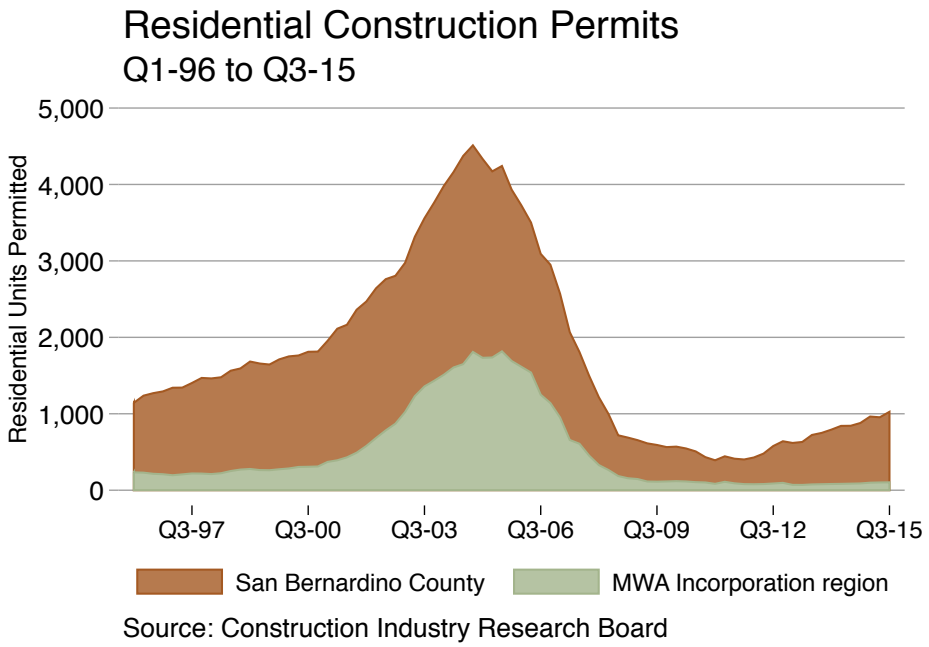
MWA IncorporatedTaxable Sales Growth (%)

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

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.



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

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Appendix E – 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:

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	2,141	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	1996	
	Year ending baseline period range[3]	2005	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range[4]	2007	

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

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

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

NOTES:

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES: The DWR Population Tool was used to find the appropriate number of connections based on the population information provided.	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1996	4,680
Year 2	1997	4,910
Year 3	1998	5,172
Year 4	1999	5,496
Year 5	2000	5,894
Year 6	2001	6,257
Year 7	2002	6,653
Year 8	2003	7,276
Year 9	2004	7,907
Year 10	2005	8,655
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	7,276
Year 2	2004	7,907
Year 3	2005	8,655
Year 4	2006	9,381
Year 5	2007	9,571
2015 Compliance Year Population		
2015		10,735
NOTES: Since the percent of recycled water is below 10%, a 10-year continuous base period will be used for analysis purposes.		

SB X7-7 Table 4: Annual Gross Water Use *

Baseline Year *Fm SB X7-7 Table 3*		Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water *This column will remain blank until SB X7-7 Table 4-B is completed.*	Water Delivered for Agricultural Use	Process Water *This column will remain blank until SB X7-7 Table 4-D is completed.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1996	1,187	-	-	-	-	-	1,187
Year 2	1997	1,174	-	-	-	-	-	1,174
Year 3	1998	1,030	-	-	-	-	-	1,030
Year 4	1999	1,334	-	-	-	-	-	1,334
Year 5	2000	1,668	-	-	-	-	-	1,668
Year 6	2001	1,490	-	-	-	-	-	1,490
Year 7	2002	1,781	-	-	-	-	-	1,781
Year 8	2003	1,820	-	-	-	-	-	1,820
Year 9	2004	2,133	-	-	-	-	-	2,133
Year 10	2005	1,933	-	-	-	-	-	1,933
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**1,555**
5 Year Baseline - Gross Water Use								
Year 1	2003	1,820	-	-	-	-	-	1,820
Year 2	2004	2,133	-	-	-	-	-	2,133
Year 3	2005	1,933	-	-	-	-	-	1,933
Year 4	2006	2,115	-	-	-	-	-	2,115
Year 5	2007	2,199	-	-	-	-	-	2,199
5 year baseline average gross water use								**2,040**
2015 Compliance Year - Gross Water Use								
2015		1,513	-	-	-	-	-	**1,513**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES: CSA 70J does not export water and therefore will be no change in the distribution storage because the amount that is pumped above the Free Production Allowance is replaced with leased water. CSA 70J does not participate in water recycling. CSA 70J is primarily a residential distribution system and therefore the water delivered for agricultural and process water use is 0.

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)FPA
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1996	905	-	905
Year 2	1997	905	-	905
Year 3	1998	804	-	804
Year 4	1999	804	-	804
Year 5	2000	804	-	804
Year 6	2001	804	-	804
Year 7	2002	804	-	804
Year 8	2003	754	-	754
Year 9	2004	711	-	711
Year 10	2005	660	-	660
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2003	754	-	754
Year 2	2004	711	-	711
Year 3	2005	660	-	660
Year 4	2006	609	-	609
Year 5	2007	609	-	609
2015 Compliance Year - Water into Distribution System				
2015		609	-	609

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

NOTES: Amount of water CSA 70J can pump from the groundwater aquifer without need for replacement.

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Imported Water (Above FPA)			
This water source is:				
☐	The supplier's own water source			
☑	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1996	282	0	282
Year 2	1997	269	0	269
Year 3	1998	226	0	226
Year 4	1999	530	0	530
Year 5	2000	864	0	864
Year 6	2001	686	0	686
Year 7	2002	977	0	977
Year 8	2003	1,066	0	1,066
Year 9	2004	1,422	0	1,422
Year 10	2005	1,273	0	1,273
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2,003	1,066	0	1,066
Year 2	2,004	1,422	0	1,422
Year 3	2,005	1,273	0	1,273
Year 4	2,006	1,506	0	1,506
Year 5	2,007	1,590	0	1,590
2015 Compliance Year - Water into Distribution System				
2015		904	0	904
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES: Amount pumped by CSA 70J from aquifer above Free Production Allowance. Leased on open market.				

SB X7-7 Table 4-B: Indirect Recycled Water Use Deduction *(For use only by agencies that are deducting indirect recycled water)*

Baseline Year *Fm SB X7-7 Table 3*		Surface Reservoir Augmentation					Groundwater Recharge			Total Deductible Volume of Indirect Recycled Water Entering the Distribution System
		Volume Discharged from Reservoir for Distribution System Delivery	Percent Recycled Water	Recycled Water Delivered to Treatment Plant	Transmission/ Treatment Loss	Recycled Volume Entering Distribution System from Surface Reservoir Augmentation	Recycled Water Pumped by Utility*	Transmission/ Treatment Losses	Recycled Volume Entering Distribution System from Groundwater Recharge	
10-15 Year Baseline - Indirect Recycled Water Use										
Year 1	1996	1,187	0%	-		-	-		-	-
Year 2	1997	1,174	0%	-		-	-		-	-
Year 3	1998	1,030	0%	-		-	-		-	-
Year 4	1999	1,334	0%	-		-	-		-	-
Year 5	2000	1,668	0%	-		-	-		-	-
Year 6	2001	1,490	0%	-		-	-		-	-
Year 7	2002	1,781	0%	-		-	-		-	-
Year 8	2003	1,820	0%	-		-	-		-	-
Year 9	2004	2,133	0%	-		-	-		-	-
Year 10	2005	1,933	0%	-		-	-		-	-
Year 11	0			-		-			-	-
Year 12	0			-		-			-	-
Year 13	0			-		-			-	-
Year 14	0			-		-			-	-
Year 15	0			-		-			-	-
5 Year Baseline - Indirect Recycled Water Use										
Year 1	2003	1,820	0%	-		-	-		-	-
Year 2	2004	2,133	0%	-		-	-		-	-
Year 3	2005	1,933	0%	-		-	-		-	-
Year 4	2006	2,115	0%	-		-	-		-	-
Year 5	2007	2,199	0%	-		-	-		-	-
2015 Compliance - Indirect Recycled Water Use										
2015		1,513	0%	-		-	-		-	-

**Suppliers will provide supplemental sheets to document the calculation for their input into "Recycled Water Pumped by Utility". The volume reported in this cell must be less than total groundwater pumped - See Methodology 1, Step 8, section 2.c.*

NOTES: CSA 70J Does not participate in recyled water program.

SB X7-7 Table 4-C: Process Water Deduction Eligibility *(For use only by agencies that are deducting process water) Choose Only One*	
☐	**Criteria 1**- Industrial water use is equal to or greater than 12% of gross water use. Complete SB X7-7 Table 4-C.1
☐	**Criteria 2** - Industrial water use is equal to or greater than 15 GPCD. Complete SB X7-7 Table 4-C.2
☐	**Criteria 3** - Non-industrial use is equal to or less than 120 GPCD. Complete SB X7-7 Table 4-C.3
☐	**Criteria 4** - Disadvantaged Community. Complete SB x7-7 Table 4-C.4
NOTES: CSA 70J is not deducting process water because industry does not use Process Water in CSA 70J.	

SB X7-7 Table 4-C.1: Process Water Deduction Eligibility

Criteria 1

Industrial water use is equal to or greater than 12% of gross water use

Baseline Year *Fm SB X7-7 Table 3*		Gross Water Use Without Process Water Deduction	Industrial Water Use	Percent Industrial Water	**Eligible for Exclusion Y/N**
10 to 15 Year Baseline - Process Water Deduction Eligibility					
Year 1	1996	1,187	-	0%	NO
Year 2	1997	1,174		0%	NO
Year 3	1998	1,030		0%	NO
Year 4	1999	1,334		0%	NO
Year 5	2000	1,668		0%	NO
Year 6	2001	1,490		0%	NO
Year 7	2002	1,781		0%	NO
Year 8	2003	1,820		0%	NO
Year 9	2004	2,133		0%	NO
Year 10	2005	1,933		0%	NO
Year 11	0	-			NO
Year 12	0	-			NO
Year 13	0	-			NO
Year 14	0	-			NO
Year 15	0	-			NO
5 Year Baseline - Process Water Deduction Eligibility					
Year 1	2003	1,820		0%	NO
Year 2	2004	2,133		0%	NO
Year 3	2005	1,933		0%	NO
Year 4	2006	2,115		0%	NO
Year 5	2007	2,199		0%	NO
2015 Compliance Year - Process Water Deduction Eligiblity					
2015		1,513		0%	NO

NOTES: CSA 70J is not eligible for process water deduction.

SB X7-7 Table 4-C.2: Process Water Deduction Eligibility

Criteria 2

Industrial water use is equal to or greater than 15 GPCD

Baseline Year *Fm SB X7-7 Table 3*		Industrial Water Use	Population	Industrial GPCD	**Eligible for Exclusion Y/N**
10 to 15 Year Baseline - Process Water Deduction Eligibility					
Year 1	1996	-	4,680	-	NO
Year 2	1997		4,910	-	NO
Year 3	1998		5,172	-	NO
Year 4	1999		5,496	-	NO
Year 5	2000		5,894	-	NO
Year 6	2001		6,257	-	NO
Year 7	2002		6,653	-	NO
Year 8	2003		7,276	-	NO
Year 9	2004		7,907	-	NO
Year 10	2005		8,655	-	NO
Year 11	0		-		NO
Year 12	0		-		NO
Year 13	0		-		NO
Year 14	0		-		NO
Year 15	0		-		NO
5 Year Baseline - Process Water Deduction Eligibility					
Year 1	2003		7,276	-	NO
Year 2	2004		7,907	-	NO
Year 3	2005		8,655	-	NO
Year 4	2006		9,381	-	NO
Year 5	2007		9,571	-	NO
2015 Compliance Year - Process Water Deduction Eligibility					
2015			10,735	-	NO

NOTES: CSA 70J is not eligible for process water deduction.

SB X7-7 Table 4-C.3: Process Water Deduction Eligibility

Criteria 3

Non-industrial use is equal to or less than 120 GPCD

Baseline Year *Fm SB X7-7 Table 3*		Gross Water Use Without Process Water Deduction *Fm SB X7-7 Table 4*	Industrial Water Use	Non-industrial Water Use	Population *Fm SB X7-7 Table 3*	Non-Industrial GPCD	**Eligible for Exclusion Y/N**
10 to 15 Year Baseline - Process Water Deduction Eligibility							
Year 1	1996	1,187		1,187	4,680	226	NO
Year 2	1997	1,174		1,174	4,910	213	NO
Year 3	1998	1,030		1,030	5,172	178	NO
Year 4	1999	1,334		1,334	5,496	217	NO
Year 5	2000	1,668		1,668	5,894	253	NO
Year 6	2001	1,490		1,490	6,257	213	NO
Year 7	2002	1,781		1,781	6,653	239	NO
Year 8	2003	1,820		1,820	7,276	223	NO
Year 9	2004	2,133		2,133	7,907	241	NO
Year 10	2005	1,933		1,933	8,655	199	NO
Year 11	0	-		-	-		NO
Year 12	0	-		-	-		NO
Year 13	0	-		-	-		NO
Year 14	0	-		-	-		NO
Year 15	0	-		-	-		NO
5 Year Baseline - Process Water Deduction Eligibility							
Year 1	2003	1,820		1,820	7,276	223	NO
Year 2	2004	2,133		2,133	7,907	241	NO
Year 3	2005	1,933		1,933	8,655	199	NO
Year 4	2006	2,115		2,115	9,381	201	NO
Year 5	2007	2,199		2,199	9,571	205	NO
2015 Compliance Year - Process Water Deduction Eligiblity							
2015		1,513		1,513	10,735	126	NO

NOTES: CSA 70J is not eligible for process water deduction.

SB X7-7 Table 4-C.4: Process Water Deduction Eligibility

Criteria 4

Disadvantaged Community. A "Disadvantaged Community" (DAC) is a community with a median household income less than 80 percent of the statewide average.

SELECT ONE

"Disadvantaged Community" status was determined using one of the methods listed below:

☐ **1. IRWM DAC Mapping tool**
http://www.water.ca.gov/irwm/grants/resources_dac.cfm

If using the IRWM DAC Mapping Tool, include a screen shot from the tool showing that the service area is considered a DAC.

☐ **2. 2010 Median Income**

California Median Household Income		Service Area Median Household Income	Percentage of Statewide Average	**Eligible for Exclusion? Y/N**
2015 Compliance Year - Process Water Deduction Eligibility				
2010	$60,883		0%	YES

NOTES: CSA 70J is not part of a disadvantaged community and is not eligible for process water deduction.

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*						
Name of Industrial Customer		*Industrial Customer 1*				
Baseline Year *Fm SB X7-7 Table 3*		Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
10 to 15 Year Baseline - Process Water Deduction						
Year 1	1996					-
Year 2	1997					-
Year 3	1998					-
Year 4	1999					-
Year 5	2000					-
Year 6	2001					-
Year 7	2002					-
Year 8	2003					-
Year 9	2004					-
Year 10	2005					-
Year 11	0					-
Year 12	0					-
Year 13	0					-
Year 14	0					-
Year 15	0					-
5 Year Baseline - Process Water Deduction						
Year 1	2003					-
Year 2	2004					-
Year 3	2005					-
Year 4	2006					-
Year 5	2007					-
2015 Compliance Year - Process Water Deduction						
2015						-
NOTES: CSA 70J does not use process water and is therefore not eligible fore process water deduction.						

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*					
Name of Industrial Customer	*Industrial Customer 2*				
Baseline Year *Fm SB X7-7 Table 3*	Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Annual Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1996	4,680	1,187	226
Year 2	1997	4,910	1,174	213
Year 3	1998	5,172	1,030	178
Year 4	1999	5,496	1,334	217
Year 5	2000	5,894	1,668	253
Year 6	2001	6,257	1,490	213
Year 7	2002	6,653	1,781	239
Year 8	2003	7,276	1,820	223
Year 9	2004	7,907	2,133	241
Year 10	2005	8,655	1,933	199
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**220**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2003	7,276	1,820	223
Year 2	2004	7,907	2,133	241
Year 3	2005	8,655	1,933	199
Year 4	2006	9,381	2,115	201
Year 5	2007	9,571	2,199	205
5 Year Average Baseline GPCD				**214**
2015 Compliance Year GPCD				
2015		10,735	1,513	**126**

NOTES: Based on information obtained from Beacon Economics CSA 70J population projections.

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	220
5 Year Baseline GPCD	214
2015 Compliance Year GPCD	126
NOTES: Based on population and annual water production.	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☑	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator
NOTES: Used the 20% baseline reduction method.		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
220	**176**
NOTES: A 20% reduction from the 10-year baseline GPCD.	

SB X7-7 Table 7-E: Target Method 3				
Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
☐		North Coast	137	130
☐		North Lahontan	173	164
☐		Sacramento River	176	167
☐		San Francisco Bay	131	124
☐		San Joaquin River	174	165
☐		Central Coast	123	117
☐		Tulare Lake	188	179
☑	100%	South Lahontan	170	162
☐		South Coast	149	142
☐	0%	Colorado River	211	200
Target *(If more than one region is selected, this value is calculated.)*				**162**

NOTES: CSA 70J is located in the South Lahontan Hydrologic Region

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
214	203	176	**176**

[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: Used Method 1 to calculate the 2020 target.

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
176	220	**198**
NOTES:		

SB X7-7 Table 9: 2015 Compliance								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)* Enter "0" if Adjustment Not Used: Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments	Adjusted 2015 GPCD	2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
126	198	-	-	-	-	126	126	**YES**
NOTES: Adjustment was not used.								

Appendix F – 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

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.

~~12/10/02~~
~~01/30/03~~
~~02/03/03~~
~~04/18/03~~
~~04/28/03~~
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] 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
SAN BERNARDINO CO SERVICE AREA 70J	1,005	0.8213	1,005	954	904	854	804
SAN BERNARDINO CO SERVICE AREA 70L	355	0.2901	355	337	319	301	284
SAN FILIPPO, JOSEPH & SHELLEY	35	0.0286	35	33	31	29	28
SILVER LAKES ASSOCIATION	3,987	3.2583	3,987	3,787	3,588	3,388	3,189
SOUTHDOWN, INC	1,519	1.2414	1,519	1,443	1,367	1,291	1,215
SOUTHERN CALIFORNIA WATER COMPANY	940	0.7682	940	893	846	799	752
SPRING VALLEY LAKE ASSOCIATION	3,056	2.4974	3,056	2,903	2,750	2,597	2,444
SPRING VALLEY LAKE COUNTRY CLUB	977	0.7984	977	928	879	830	781
STORM, RANDALL	62	0.0507	62	58	55	52	49
SUDMEIER, GLENN W	121	0.0989	121	114	108	102	96
SUMMIT VALLEY RANCH	452	0.3694	452	429	406	384	361
TATRO, RICHARD K & SANDRA A	280	0.2288	280	266	252	238	224
TATUM, JAMES B	829	0.6775	829	787	746	704	663
TAYLOR, ALLEN C / HAYMAKER RANCH	456	0.3727	456	433	410	387	364
THOMAS, S DALE	440	0.3596	440	418	396	374	352
THOMAS, WALTER	36	0.0294	36	34	32	30	28
THOMPSON, JAMES A	418	0.3416	418	397	376	355	334
THOMPSON, RODGER	76	0.0621	76	72	68	64	60
THRASHER, GARY	373	0.3048	373	354	335	317	298
THUNDERBIRD COUNTY WATER DISTRICT	118	0.0964	118	112	106	100	94
TURNER, ROBERT	70	0.0572	70	66	63	59	56
VAIL, JOSEPH B & PAULA E	126	0.1030	126	119	113	107	100
* VAN BURGER, CARL	710	0.5802	710	674	639	603	568
VAN LEEUWEN FAMILY TRUST	341	0.2787	341	323	306	289	272

* Durston Well, location 06N/04W-18F, APN 468-151-11 - water production right of 357 acre/feet, claimed by Durston/Van Burger/CVB Investments and Industrial Asphalt. Product right to be determined in a subsequent severed proceeding, jurisdiction reserved.

~~12/10/92~~
~~01/20/93~~
~~03/03/93~~
~~04/16/93~~
~~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-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
AGCON, INC	0	0.0000	0	0	0	0	0
AGUAYO, JEANETTE L	212	0.3742	212	201	190	180	169
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	120	0.2118	120	114	108	102	96
AVDEEF, THOMAS	34	0.0600	34	32	30	28	27
AZTEC FARM DEVELOPMENT COMPANY (Now, Virgil Gorman)	220	0.3883	220	209	198	187	176
BARNES, FAY - EXECUTOR OF ESTATE OF WAYNE BARNES	243	0.4289	243	230	218	206	194
BROMMER, HARVIN	361	0.6372	361	342	324	306	288
BURNS, RITA J & PAMELA E	16	0.0282	16	15	14	13	12
CHAPA, LARRY R	96	0.1694	96	91	86	81	76
CHOI, YONG IL & JOUNG AE	38	0.0671	38	36	34	32	30
CHRISTISON, JOEL	75	0.1324	75	71	67	63	60
COOK, KWON W	169	0.2983	169	160	152	143	135
DE VRIES, NEIL	3,800	6.7070	3,800	3,610	3,420	3,230	3,040
DESERT COMMUNITY BANK	156	0.2753	156	148	140	132	124
DURAN, FRANK T	50	0.0883	50	47	45	42	40
GAINES, JACK	117	0.2065	117	111	105	99	93
GESIRICH, WAYNE	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	131	124	117	110
GRIEDER, RAYMOND H & DORISANNE	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & MILLIE D	21	0.0371	21	19	18	17	16
GROEN, CORNELIS	1,043	1.8409	1,043	990	938	886	834
HANIFY, DBA - WHITE BEAR RANCH	152	0.2683	152	144	136	129	121
HARMSEN, JAMES & RUTH ANN	1,522	2.6863	1,522	1,445	1,369	1,293	1,217
HARPER LAKE COMPANY	1,433	2.5293	1,433	1,361	1,289	1,218	1,146

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FILED
RIVERSIDE COUNTY
JAN 16 1996
ARTHUR A. [illegible], Clerk
By Y.A. Burns Y.A. Burns
Deputy

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.	CASE NO. 208568 ASSIGNED TO JUDGE KAISER DEPT.4 FOR ALL PURPOSES JUDGMENT AFTER TRIAL
MOJAVE WATER AGENCY, Cross-complainant, v. ANDERSON, RONALD H. et al, Cross-defendants.	

TABLE OF CONTENTS

I. INTRODUCTION

A. The Complaint. The original complaint herein was filed by the City of Barstow and Southern California Water Company (collectively "Plaintiffs") in San Bernardino Superior Court, North Desert District, on May 30, 1990 as Case No. BCV6672, and transferred to Riverside County Superior Court on November 27, 1990. Plaintiffs allege that the cumulative water Production upstream of the City of Barstow Overdrafted the Mojave River system, and request an average Annual flow of 30,000 acre-feet of surface water to the City of Barstow area. The complaint also includes a request for a writ of mandate to require the Mojave Water Agency ("MWA") to act pursuant to its statutory authority to obtain and provide Supplemental Water for use within the Mojave Basin Area.

B. The MWA Cross-Complaint. On July 26, 1991, the MWA filed its first amended cross-complaint in this case. The MWA first amended cross-complaint and its ROE amendments name Producers who collectively claim substantially all rights of water use within the Mojave Basin Area, including Parties downstream of the City of Barstow. The MWA cross-complaint, as currently amended, requests a declaration that the available native water supply to the Mojave Basin Area (not including water imported from the California State Water Project) is inadequate to meet the demands of the combined Parties and requests a determination of the water rights of whatever nature within the MWA boundaries and the Mojave Basin Area. The MWA has named as Parties several hundred Producers within the Basin Area.

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C. The Arc Las Flores Cross-Complaint. On July 3, 1991, Arc Las Flores filed a cross-complaint for declaratory relief seeking a declaration of water rights of certain named cross-defendants and a declaration that the appropriative, overlying and riparian rights of Arc Las Flores be determined to be prior and paramount to any rights of the Plaintiffs and other appropriators.

D. Stipulation and Trial. On October 16, 1991, the Court ordered a litigation standstill. The purpose of the standstill was to give the parties time to negotiate a settlement and develop a solution to the overdraft existing in the Mojave River Basin.

A committee of engineers and attorneys, representing a variety of water users and interests throughout the Mojave River Basin, was created to develop a physical solution to the water shortage problem. The work of the committee resulted in a stipulated interlocutory order and judgment, which was entered by the court on September 23, 1993.

Several non-stipulating parties requested a trial. On April 20, 1994, the Court issued a memorandum setting forth the trial issues. This cause came on regularly for trial on February 6, 1995, and was tried in Department 4 of the above-entitled Court, the Honorable E. Michael Kaiser, Judge, Presiding, without a jury. Oral and documentary evidence was introduced on behalf of the respective parties and the cause was argued and submitted for decision.

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II. DECREE

NOW, THEREFORE, IT IS ORDERED, ADJUDGED AND DECREED:

A. JURISDICTION, PARTIES, DEFINITIONS.

1. Jurisdiction and Parties.

a. Jurisdiction. This Court has jurisdiction to enter Judgment declaring and adjudicating the rights to reasonable and beneficial use of water by the Parties in the Mojave Basin Area pursuant to Article X, Section 2 of the California Constitution. This Judgment constitutes an adjudication of water rights of the Mojave Basin Area pursuant to Section 37 of Chapter 2146 of Statutes of 1959 ("the MWA Act").

b. Parties. All Parties to the MWA cross-complaint are included in this Judgment. The MWA has notified those Persons claiming any right, title or interest to the natural waters within the Mojave Basin Area to make claims. Such notice has been given: 1) in conformity with the notice requirements of Water Code §§ 2500 et seq.; 2) pursuant to Section 37 of the MWA Act; and 3) pursuant to order of this Court. Subsequently, all Producers making claims have been or will be included as Parties. The defaults of certain Parties have been entered, and certain named cross-defendants to the MWA cross-complaint who are not Producers have been dismissed. All named Parties who have not been dismissed have appeared herein or have been given adequate opportunity to appear herein. The Court has jurisdiction of the subject matter of this action and of the Parties hereto.

c. Minimal Producers. There are numerous Minimal Producers in the Basin Area and their number is expected to increase in the future. In order to minimize the cost of

administering this Judgment and to assure that every Person producing water in the Basin Area participates fairly in the Physical Solution, MWA shall:

i. within one Year following entry of this Judgment, prepare a report to the Court: 1) setting forth the identity and verified Base Annual Production of each Minimal Producer in each Subarea of the Basin Area; and 2) recommending a proposed system of Minimal Producer Assessments. The system of Minimal Producer Assessments shall achieve an equitable allocation of the costs of the Physical Solution that are attributable to Production of verified Base Annual Production amounts by Minimal Producers in each Subarea to and among such Minimal Producers. Minimal Producer Assessments need not be the same for existing Minimal Producers as for future Minimal Producers.

ii. within one Year following entry of this Judgment, prepare a report to the Court setting forth a proposed program to be undertaken by MWA, pursuant to its statutory authority, to implement the proposed system of Minimal Producer Assessments. The Court may order MWA to implement the proposed program or, if MWA's statutory authority is inadequate to enable implementation, or if either the proposed program or the proposed system of Minimal Producer Assessments is unacceptable to the Court, the Court may then order MWA either to implement an alternative program or system, or in the alternative, to name all Minimal Producers as Parties to this litigation and to serve them for the purpose of adjudicating their water rights.

Any Minimal Producer whose Annual Production exceeds ten (10) acre-feet in any Year following the date of entry of Judgment shall be made a Party pursuant to Paragraph 12 and shall be subject to Administrative, Replacement Water, Makeup Water and Biological Resources Assessments. Any Minimal Producer who produced during the 1986-1990 period may become a Party pursuant to Paragraph 40 with a Base Annual Production Right based on such Minimal Producer's verified Base Annual Production. To account properly for aggregate Production by Minimal Producers in each Subarea, Table B-1 of Exhibit B shall include an estimated aggregate amount of Base Annual Production by all Minimal Producers in each Subarea. The Base Annual Production of any Minimal Producer who becomes a Party shall be deducted from the aggregate amount and assigned to such Minimal Producer.

2. Physical and Legal Complexity. The physical and legal issues of the case as framed by the complaint and cross-complaints are extremely complex. Production of more than 1,000 Persons producing water in the Basin Area has been ascertained. In excess of 1,000 Persons have been served. The water supply and water rights of the entire Mojave Basin Area and its hydrologic Subareas extending over 4000 square miles have been brought into issue. Most types and natures of water right known to California law are at issue in the case. Engineering studies by the Parties, jointly and severally, leading toward adjudication of these rights and a Physical Solution, have required the expenditure of over two Years' time and hundreds of thousands of dollars.

3. Need for a Declaration of Rights and Obligations and for Physical Solution. A Physical Solution for the Mojave Basin

Area based upon a declaration of water rights and a formula for Intra- and Inter-Subarea allocation of rights and obligations is necessary to implement the mandate of Article X, Section 2 of the California Constitution and California water policy. Such Physical Solution requires the definition of the individual rights of all Producers within the Basin Area in a manner which will equitably allocate the natural water supplies and which will provide for equitable sharing of costs for Supplemental Water. Nontributary supplemental sources of water are or will be available in amounts, which when combined with water conservation, water reclamation, water transfers, and improved conveyance and distribution methods within the Basin Area, will be sufficient in quantity and quality to assure implementation of a Physical Solution. Sufficient information and data are known to formulate a reasonable and just allocation of existing water supplies as between the hydrologic Subareas within the Basin Area and as among the water users within each Subarea. Such Physical Solution will allow the public water supply agencies and individual water users within each hydrologic Subarea to proceed with orderly water resource planning and development. It will be necessary for MWA to construct conveyance facilities to implement the Physical Solution. Absent the construction of conveyance facilities, some Subareas may be deprived of an equitable share of the benefits made possible by the Physical Solution. Accordingly, this Physical Solution mandates the acquisition or construction of conveyance facilities for importation and equitable distribution of Supplemental Water to the respective Subareas. Such construction is dependent on the availability of appropriate financing, and any such financing

assessed to the Parties will be based upon benefit to the Parties in accordance with the MWA Act.

4. Definitions. As used in this judgment, the following terms shall have the meanings herein set forth:

a. Afton - The United States Geological Survey gauging station "Mojave River at Afton, CA."

b. Annual or Year - As used in this Judgment refers to the Annual period beginning October 1 and ending September 30 of the following Year.

c. Aquaculture Water - Water so identified in Exhibit "B". Such water may be used only for fish breeding and rearing. The Annual Consumptive Use of such water in acre-feet is equal to the water surface area, in acres, of the fish rearing facilities multiplied by seven (feet).

d. Assessments - Those Assessments levied and collected pursuant to this judgment including Replacement Water, Makeup Water, Administrative and Biological Resource Assessments.

e. Barstow - The United States Geological Survey Gauging Station "Mojave River at Barstow, CA."

f. Base Annual Production - The verified maximum Year Production, in acre-feet, for each Producer for the five Year Period 1986-1990 as set forth in Table B-1 of Exhibit "B", except where otherwise noted therein. The maximum Year Production for each Producer was verified based on one or more of the following: flow meter readings, electrical power

or diesel usage records or estimated applied water duty. The Base Annual Production for recreational lakes in the Baja Subarea and for Aquaculture shall be equal either to the area of water surface multiplied by seven feet or to verified Production, whichever is less. The five Year period 1986-1990 shall also be the time period for which Base Annual Production for Minimal Producers shall be calculated.

g. Base Annual Production Right - The relative Annual right of each Producer to the Free Production Allowance within a given Subarea, expressed as a percentage of the aggregate of all Producers' Base Annual Production in the Subarea. The percentage for each Producer is calculated by multiplying that Producer's Base Annual Production in a Subarea times one hundred (100) and dividing the result by the aggregate Base Annual Production for all Producers in the Subarea. The percentage shall be rounded off to the nearest one ten-thousandth of one per cent.

h. Base Flow - That portion of the total surface flow measured Annually at Lower Narrows which remains after subtracting Storm Flow.

i. Carry Over Right - The right of a Producer to delay and accumulate the Production of such Producer's share of a Subarea Free Production Allowance until

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and only until the following Year free of any Replacement Water Assessment.

j. Consumption or Consumptive Use - The permanent removal of water from the Mojave Basin Area through evaporation or evapo-transpiration. The Consumptive Use rates resulting from particular types of water use are identified in Paragraph 2 of Exhibit "F".

k. Free Production Allowance - The total amount of water, and any Producer's share thereof, that may be Produced from a Subarea each Year free of any Replacement Obligation.

l. Groundwater - Water beneath the surface of the ground and within the zone of saturation; i.e., below the existing water table, whether or not flowing through known and definite channels.

m. Harper Lake Basin - That portion of the Centro Subarea identified as such on Exhibit "A".

n. Lower Narrows - The United States Geological Survey gauging station "Mojave River near Victorville, CA."

o. Makeup Water - Water needed to satisfy a Minimum Subarea Obligation.

p. Makeup Obligation - The obligation of a Subarea to pay for Makeup Water to satisfy its Subarea Obligation.

q. Minimal Producer - Any Person whose Base Annual Production, as verified by MWA is not greater than

ten (10) acre-feet. A Person designated as a Minimal Producer whose Annual Production exceeds ten (10) acre-feet in any Year following the date of entry of Judgment is no longer a Minimal Producer.

r. Minimum Subarea Obligation - The minimum Annual amount of water a Subarea is obligated to provide to an adjoining downstream Subarea or the Transition Zone or, in the case of the Baja Subarea, the minimum Annual Subsurface Flow at the MWA eastern boundary toward Afton in any Year, as set forth in Exhibit "G".

s. Mojave Basin Area or Basin Area - The area shown on Exhibit "A" that lies within the boundaries of the line labelled "Limits of Adjudicated Area" which generally includes the area tributary to the Mojave River and its tributaries except for such area not included within the Mojave Water Agency's jurisdiction.

t. MWA - Cross complainant Mojave Water Agency.

u. Overdraft - A condition wherein the current total Annual Consumptive Use of water in the Mojave Basin Area or any of its Subareas exceeds the long term average Annual natural water supply to the Basin Area or Subarea.

v. Party (Parties) - Any Person(s) named in this action who has intervened in this case or has

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become subject to this Judgment either through stipulation, default, trial or otherwise.

w. Person(s) - Any natural person, firm, association, organization, joint venture, partnership, business, trust, corporation, or public entity.

x. Produce - To pump or divert water.

y. Producer(s) - A Person, other than a Minimal Producer, who Produces water.

z. Production - Annual amount of water produced, stated in acre-feet of water.

aa. Production Safe Yield - The highest average Annual Amount of water that can be produced from a Subarea: (1) over a sequence of years that is representative of long-term average annual natural water supply to the Subarea net of long-term average annual natural outflow from the Subarea, (2) under given patterns of Production, applied water, return flows and Consumptive Use, and (3) without resulting in a long-term net reduction of groundwater in storage in the Subarea.

bb. Purpose of Use - The broad category of type of water use including but not limited to municipal, irrigation, industrial, aquaculture, and lakes purposes. A change in Purpose of Use includes any reallocation of water among mixed or sequential uses, excluding direct reuse of municipal wastewater.

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cc. Recirculated Water - Water that is Produced but not consumed by the Parties listed in Table B-2 of Exhibit "B" and then returned either to the Mojave River or to the Groundwater basin underlying the place of use.

dd. Replacement Obligation - The obligation of a Producer to pay for Replacement Water for Production from a Subarea in any Year in excess of the sum of such Producer's share of that Year's Free Production Allowance for the Subarea plus any Production pursuant to a Carry Over Right.

ee. Replacement Water - Water purchased by Watermaster or otherwise provided to satisfy a Replacement Obligation.

ff. Responsible Party - The Person designated by a Party as the Person responsible for purposes of filing reports and receiving notices pursuant to the provisions of this Judgment.

gg. Stored Water - Water held in storage pursuant to a Storage Agreement with Watermaster.

hh. Storm Flow - That portion of the total surface flow originating from precipitation and runoff without having first percolated to Groundwater storage in the zone of saturation and passing a particular point of reckoning, as determined annually by the Watermaster.

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ii. Subareas - The five Subareas of the Mojave Basin Area -- Este, Oeste, Alto, Centro and Baja -- as shown on Exhibit "A".

jj. Subarea Obligation - The average Annual amount of water that a Subarea is obligated to provide to an adjoining downstream Subarea or the Transition Zone or, in the case of the Baja Subarea, the average Annual Subsurface Flow toward Afton at the MWA eastern boundary as set forth in Exhibit "G".

kk. Subsurface Flow - Groundwater which flows beneath the earth's surface.

ll. Supplemental Water - Water imported to the Basin Area from outside the Basin Area, water that would otherwise be lost from the Basin Area but which is captured and made available for use in the Basin Area, or any Producer's share of Free Production Allowance that is not Produced and is acquired by Watermaster pursuant to this Judgment.

mm. Transition Zone - The portion of the Alto Subarea, shown on Exhibit "A", that lies generally between the Lower Narrows and the Helendale Fault.

nn. Watermaster - The Person(s) appointed by the Court to administer the provisions of this Judgment.

5. Exhibits. The following exhibits are attached to this Judgment and made a part hereof.

Exhibit "A" - Map entitled, "Map showing Mojave Water Agency, Mojave River, Mojave Basin Area and Hydrologic Subareas and

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Limits of Adjudicated Area Together with Geologic and Other Pertinent Features."

Exhibit "B" - Table entitled, "Table B-1: Table Showing Base Annual Production and Base Annual Production Right of Each Producer Within Each Subarea, and Free Production Allowances for Subareas for First Five Years after entry of the Interlocutory Judgment" and "Table B-2: Table Showing Total Water Production for Aquaculture and Recreational Lake Purposes."

Exhibit "C" - Engineering Appendix.

Exhibit "D" - Time Schedules.

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

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

Exhibit "G" - Subarea Obligations.

Exhibit "H" - Biological Resource Mitigation.

Exhibit "I" - Map Showing Potential Groundwater Recharge Areas

B. DECLARATION OF HYDROLOGIC CONDITIONS.

6. Mojave Basin Area as Common Source of Supply. The area shown on Exhibit "A" as the Mojave Basin Area is comprised of five Subareas. The waters derived from the Mojave River and its tributaries constitute a common source of supply of the five Subareas and of the Persons producing therefrom.

7. Existence of Overdraft. In each and every Year, for a period in excess of five (5) years prior to the May 30, 1990 filing date of Plaintiffs' Complaint, the Mojave Basin Area and each of its respective Subareas have been and are in a state of Overdraft, and it is hereby found that there is no water available

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for Production from the Basin Area or any Subarea therein except pursuant to this Judgment.

C. DECLARATION OF RIGHTS AND OBLIGATIONS.

8. Production Rights of the Parties. The Base Annual Production and Base Annual Production Right of each Party are declared as set forth in Table B-1 of Exhibit "B". Certain Parties also have the right to continue to Produce Recirculated Water in the amounts set forth in Table B-2 of Exhibit "B", subject to the following:

a. Aquaculture. Two of the Producers listed in Table B-2 of Exhibit "B", California Department of Fish and Game Mojave River Fish Hatchery (Hatchery) and Jess Ranch Water Company (Jess), Produce Recirculated Water for Aquaculture. The Hatchery and Jess or their successors or assignees shall have the right to continue to Produce up to the amounts listed in Table B-2 of Exhibit "B" as Recirculated Water for Aquaculture on the property where it was used in the Year for which Base Annual Production was verified. Production of such amount of Recirculated water by Jess shall be free of any Replacement Water Assessments, Makeup Water Assessments or Administrative Assessments but shall be subject to Biological Resources Assessments and each Jess well producing Recirculated Water shall be subject to an Annual administrative fee equal to the lowest Annual fee paid to MWA by a Minimal Producer. Neither the Hatchery nor Jess Recirculated Water may be transferred or used for any other purpose or transferred for use on any other property, except as provided in Paragraph 7 of Exhibit "F" for the Hatchery. Any Production of Recirculated Water by Jess in excess of the amount shown in Table B-2 shall be subject to all

Assessments. Production of Recirculated Water by the Hatchery will be subject to the rules set forth in Paragraph 7 of Exhibit "F". All Jess Aquaculture Recirculated Water shall be discharged immediately and directly to the Mojave River.

b. Camp Cady. One Producer listed in Table B-2 of Exhibit "B", California Department of Fish and Game-Camp Cady (Camp Cady), Produces Recirculated Water for Lakes containing Tui Chub, an endangered species of fish. Camp Cady or its successors or assignees shall have the right to continue to Produce up to the amount listed in Table-B-2 of Exhibit "B" as Recirculated Water at Camp Cady. Production of each amount of Recirculated water shall be free of any Assessments. Camp Cady Recirculated Water may not be transferred or used for any other purpose or transferred for use on any other property. Any Production of Recirculated Water by Camp Cady in excess of the amount shown in Table B-2 of Exhibit "B" shall be subject to all Assessments except Biological Resource Assessments. All Camp Cady Recirculated Water shall be allowed to percolate immediately and directly to the Groundwater basin underlying Camp Cady.

c. Recreational Lakes in Baja Subarea. All Producers listed in Table B-2 of Exhibit "B" except the Hatchery, Jess and Camp Cady Produce Recirculated Water for recreational lakes in the Baja Subarea. Such Producers or their successors or assignees shall have the right to continue to Produce up to the amounts identified in Table B-2 of Exhibit "B" as Recirculated Water for use in recreational lakes on the property where it was used in the Year for which Base Annual Production was verified, free of any Replacement Water Assessments, Makeup Water

Assessments, or Administrative Assessments, but such Production shall be subject to any Biological Resource Assessment. Each well producing such Recirculated Water shall be subject to an Annual administrative fee equal to the lowest Annual fee paid by a Minimal Producer. Recirculated Water cannot be transferred or used for any other purpose. All recreational lake Recirculated Water shall be allowed to percolate immediately and directly to the Groundwater basin underlying the recreational lake.

9. MWA Obligations. The Physical Solution is intended to provide for delivery and equitable distribution to the respective Subareas by MWA of the best quality of Supplemental Water reasonably available. MWA shall develop conveyance or other facilities to deliver this Supplemental Water to the areas depicted in Exhibit "I," unless prevented by forces outside its reasonable control such as an inability to secure financing consistent with sound municipal financing practices and standards.

a. Secure Supplemental Water. MWA, separate and apart from its duties as the initial Watermaster designated under this Judgment, shall exercise its authority under Sections 1.5 and 15 of the MWA Act to pursue promptly, continuously and diligently all reasonable sources to secure Supplemental Water as necessary to fully implement the provisions of this Judgment.

b. Supplemental Water Prices. The MWA shall establish fair and equitable prices for Supplemental Water delivered to the Watermaster under this Judgment.

c. Supplemental Water Delivery Plan. Not later than September 30, 1996, MWA shall prepare a report on potential alternative facilities or methods to deliver Supplemental Water to

the areas shown on Exhibit "I." The report shall include, for each alternative, a development time schedule, a summary of cost estimates, an analysis of the relative benefits to Producers in each Subarea and an analysis of alternative methods of financing and cost allocation, including any state or federal sources of funding that may be available.

d. Water Delivery Cost Allocation. The report required by subdivision (c) above shall recommend methods of financing and cost allocation that are based on benefits to be received. MWA's cost allocation plan shall be subject to Court review as provided in subdivision (f) below to verify that costs are allocated fairly and according to benefits to be received. The MWA financing and cost allocation plan may include a mix of revenue sources including the following:

(1) Developer or connection fees to the extent MWA can demonstrate a nexus, as required by law, between the fees and the impact of the development upon the water resources of the Mojave Basin Area and each subarea thereof;

(2) Other methods of financing available to MWA, including but not limited to property based taxes, assessments or standby charges;

(3) Water sales revenues, but only to the extent other sources are not available or appropriate, and in no event shall the water sales price to cover facility

capital costs exceed a rate equal to fifty percent of the variable cost rate charged to MWA under its contract for water delivery from the California State Water Project;

e. Legislative Changes. MWA shall seek promptly to have enacted amendments to the MWA Act (Water Code Appendix, Part 97) that allow MWA to implement any methods of governmental financing available to any public entity in California.

f. Court Review and Determination of Benefit. Not later than September 30, 1996, MWA shall submit its report to the Court in a noticed motion pursuant to Paragraph 36. The report shall set forth MWA's recommendations as to the following: (1) which alternatives should be implemented; (2) methods of cost allocation for the recommended alternatives; (3) financing for the recommended alternatives; and (4) a time schedule to complete the recommended alternatives. The Court may approve or reject the recommendations. The Court may further order the use of alternatives and time schedules or it may order additional studies and resubmittals, as it may deem proper.

10. Priority and Determination of Production Rights. The water rights involved herein are of differing types and commenced at different times. Many of the rights involved are devoted to public uses. The Declaration of Water Rights that is part of the judgment and the Physical Solution decreed herein takes into consideration the competing priorities which have been asserted in addition to the equitable principles applicable to apportionment of water in this situation. The following factors

have been considered in the formulation of each Producer's Base Annual Production Right:

a. The Mojave Basin Area and each of its hydrologic Subareas have continuously for many Years been in a state of system-wide Overdraft;

b. All Producers have contributed to the Overdraft;

c. None of the priorities asserted by any of the Producers is without dispute;

d. Under the complex scheme of California water law, the allocation of water and rights mechanically based upon the asserted priorities would be extremely difficult, if not impossible, and would not result in the most equitable apportionment of water;

e. Such mechanical allocation would, in fact, impose undue hardship on many Parties;

f. There is a need for conserving and making maximum beneficial use of the water resources of the State;

g. The economy of the Mojave Basin Area has to a great extent been established on the basis of the existing Production;

h. The Judgment and Physical Solution take into consideration the unique physical and climatic conditions of the Mojave Basin Area, the Consumptive Use of water in the several sections of the Basin, the character and rate of return flows, the extent of established uses, the availability of storage water, the relative benefits and detriments between upstream areas and downstream areas if a limitation is imposed on one and not the

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other, and the need to protect public interest and public trust concerns.

In consideration of the foregoing factors, and in accordance with the terms and conditions of this Judgment, the Parties are estopped and barred from asserting special priorities or preferences.

11. Exercise of Carry Over Rights. The first water Produced by a Producer during any Year shall be deemed to be an exercise of any Carry Over Right. Such Carry Over Right may be transferred in accordance with Exhibit "F".

12. Production Only Pursuant to Judgment. This Judgment, and the Physical Solution decreed herein, addresses all Production within the Mojave Basin Area. Because of the existence of Overdraft, any Production outside the framework of this Judgment and Physical Solution will contribute to an increased Overdraft, potentially damage the Mojave Basin Area and public interests in the Basin Area, injure the rights of all Parties, and interfere with the Physical Solution. Watermaster shall bring an action or a motion to enjoin any Production that is not pursuant to the terms of this Judgment.

13. Declaration of Subarea Rights and Obligations. In the aggregate, Producers within certain Subareas have rights, as against those in adjoining upstream Subareas, to receive average Annual water supplies and, in any one Year, to receive minimum Annual water supplies equal to the amounts set forth in Exhibit "G", in addition to any Storm Flows. In turn, in the aggregate, Producers within certain Subareas have an obligation to provide to adjoining downstream Subareas such average Annual water supplies in

the amounts and in the manner set forth in Exhibit "G". In any one Year, Producers within certain Subareas have an obligation to provide to adjoining downstream Subareas such minimum Annual water supplies in the amounts and in the manner set forth in Exhibit "G". The Producers in the Baja Subarea have an obligation to provide average and minimum Subsurface Flows toward Afton at the MWA eastern boundary equal to the amounts shown in Exhibit "G". Producers in each of the Subareas have rights in the aggregate, as against each adjoining downstream Subarea or, in the case of the Baja Subarea, as against flows at the MWA eastern boundary toward Afton, to divert, pump, extract, conserve, and use all surface water and Groundwater supplies originating therein or accruing thereto, and so long as the adjoining downstream Subarea Obligations are satisfied under this Judgment and there is compliance with all of its provisions. Watermaster shall maintain a continuing account of the status of each Subarea's compliance with its Subarea Obligation, including any cumulative credits or debits and any requirement for providing Makeup Water. The accounting and determinations relative to Subarea Obligations shall be made in accordance with procedures set forth in Exhibit "G".

III. INJUNCTION

14. Injunction Against Unauthorized Production. Each and every Party, its officers, agents, employees, successors, and assigns, is ENJOINED AND RESTRAINED from Producing water from the Basin Area except pursuant to the provisions of the Physical Solution in this Judgment.

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15. Injunction Re Change in Purpose of Use Without Notice Thereof to Watermaster. Each and every Party, its officers, agents, employees, successors, and assigns, is ENJOINED AND RESTRAINED from changing its Purpose of Use at any time without first notifying Watermaster of the intended change.

16. Injunction Against Unauthorized Recharge. Each and every Party, its officers, agents, employees, successors and assigns, is ENJOINED AND RESTRAINED from claiming any right to recapture Water that has been recharged in the Basin Area except pursuant to a Storage Agreement with Watermaster. This provision does not prohibit Parties from importing Supplemental Water into the Basin Area for direct use.

17. Injunction Against Transportation from Mojave Basin Area. Except upon further order of the Court, each and every Party, its officers, agents, employees, successors and assigns, is ENJOINED AND RESTRAINED from transporting water hereafter Produced from the Basin Area to areas outside the Basin Area.

18. Injunction Against Diverting Storm Flows. No Party may undertake or cause the construction of any project that will directly reduce the amount of Storm Flow that would otherwise go through the naturally occurring hydrologic regime to a downstream Subarea or that will reduce the surface area over which Storm Flow currently occurs by alteration to the bed of the Mojave River. This paragraph shall not prevent any flood control agency or municipality from taking such emergency action as may be necessary to protect the physical safety of its residents and its structures from flooding. Any such action shall be done in a manner that will minimize any reduction in the quantity of Storm Flows.

IV. CONTINUING JURISDICTION

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

V. Physical Solution

A. GENERAL

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

the Physical Solution is to establish a legal and practical means for making the maximum reasonable beneficial use of the waters of the Basin Area by providing for the long-term conjunctive utilization of all water available thereto to meet the reasonable beneficial use requirements of water users therein.

21. Need for Flexibility. It is essential that this Physical Solution provide maximum flexibility and adaptability in order that the Court may be free to use existing and future technological, social, institutional and economic options in order to maximize reasonable beneficial use of the waters of the Basin Area. To that end, the Court's retained jurisdiction may be utilized where appropriate, to supplement the Physical Solution.

22. General Pattern of Operations. The Producers will be divided into five Subareas for purposes of administration. The Subarea rights and obligations are herein decreed. A fundamental premise of the Physical Solution is that all Parties will be allowed, subject to this Judgment, to Produce sufficient water to meet their reasonable beneficial use requirements. To the extent that Production by a Producer in any Subarea exceeds such Producer's share of the Free Production Allowance of that Subarea, Watermaster will provide Replacement Water to replace such excess Production according to the methods set forth herein. To the extent that any Subarea incurs a Makeup Obligation, Watermaster will provide Supplemental Water to satisfy such Makeup Obligation according to the methods set forth herein. For the initial five (5) full Years after entry of this Judgment (including any interlocutory Judgment), the Free Production Allowance for each Subarea shall be set as the amount of water equal to the following

percentages of the aggregate Base Annual Production for that Subarea:

	Judgment Year	Percentage
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.

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(a) Standard of Performance. Watermaster shall, in carrying out its duties, powers and responsibilities herein, act in an impartial manner without favor or prejudice to any Subarea, Producer, Party or Purpose of Use.

(b) Removal of Watermaster. Full jurisdiction, power and authority are retained and reserved by the Court for the purpose of enabling the Court on its own motion, or upon application of any Party, and upon notice in accordance with the notice procedures of paragraph 36 hereof, and after hearing thereon, to remove any appointed Watermaster and substitute a new Watermaster in its place. The Court shall find good cause for the removal of Watermaster upon a showing that Watermaster has failed to perform its duties, powers and responsibilities in an impartial manner, or has otherwise failed to act in the manner consistent with the provisions set forth in this Judgment or subsequent order of the Court.

(c) MWA Appointed as Initial Watermaster. The MWA is hereby appointed, until further order of the Court, as Watermaster to administer and enforce the provisions of this Judgment and any subsequent orders of this Court issued in the performance of its continuing jurisdiction. In carrying out this appointment, MWA shall segregate and separately exercise in all respects the Watermaster powers delegated by the Court under this Judgment from MWA's statutory powers. All funds received, held, and disbursed by MWA as Watermaster shall be by way of separate Watermaster accounts, subject to separate accounting and auditing. Meetings and hearings held by the MWA Board of Directors when acting as Watermaster shall be noticed and conducted separately from MWA

meetings. All Watermaster staff and consultant functions shall be separate and distinct from MWA staff and consultant functions; provided, however, that pursuant to duly adopted Watermaster rules, which shall be subject to review according to Paragraph 36 hereof, Watermaster staff and consultant functions may be accomplished by MWA staff and consultants, subject to strict time and cost accounting principles so that Watermaster functions, and the Assessments provided under this Judgment, do not subsidize, and are not subsidized by, MWA functions. Subject to these principles, MWA shall implement practicable cost efficiencies through consolidation of Watermaster and MWA staff and consultant functions.

24. Powers and Duties. Subject to the continuing supervision and control of the Court, Watermaster shall have and may exercise the following express powers, and shall perform the following duties, together with any specific powers, authority and duties granted or imposed elsewhere in this Judgement or hereafter ordered or authorized by the Court in the exercise of its continuing jurisdiction:

a. Rules and Regulations. To adopt any and all appropriate rules and regulations for conduct pursuant to this Judgment after public hearing. Notice of hearing and a copy of the proposed rules and regulations, and any amendments thereof, shall be mailed to all Parties thirty days prior to the date of the hearing thereon.

b. Employment of Experts and Agents. To employ such administrative personnel, engineering, legal, accounting, or other specialty services and consulting assistants as may be deemed appropriate in carrying out the terms of this Judgment.

c. Makeup and Replacement Obligations. To determine the Makeup Obligations for each Subarea and Replacement Obligations for each Producer and each Subarea, pursuant to the terms of the Judgment.

d. Measuring Devices, etc. To adopt rules and regulations regarding determination of amounts of Production and installation of individual water meters. The rules and regulations shall provide for approved devices or methods to measure or estimate Production. Producers who meter Production on the date of entry of this Judgment shall continue to meter Production. Thereafter, Producers who do not meter Production on the effective date of entry of this Judgment may be required by Watermaster rules and regulations to install water meters upon a showing that then employed measurement devices or methods do not accurately determine actual Production. The rules and regulations shall require that within three Years after the date of entry of this Judgment, any Producer who provides piped water for human Consumption to more than five service connections shall have installed an individual water meter on each service connection.

e. Hydrologic Data Collection. To install, operate and maintain such wells, measuring devices and/or meters necessary to monitor stream flow, precipitation and groundwater levels and to obtain such other data as may be necessary to carry out the provisions of this Judgment, including a study of the Basin Area phreatophyte consumptive use.

f. Assessments. To set, levy and collect all Assessments specified herein.

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g. Purchase of and Recharge with Supplemental Water. In accordance with Paragraph 27, to the extent Supplemental Water is available and is reasonably needed for Replacement Water or Makeup Water, to use Replacement Water Assessment proceeds to purchase Replacement Water, and to use Makeup Water Assessment proceeds to purchase Makeup Water and to have such Replacement Water and Makeup Water provided to the appropriate Subarea as soon as practicable. Watermaster may prepurchase Supplemental Water and apply subsequent Assessments towards the costs of such prepurchases.

h. Water Quality. To take all reasonable steps to assist and encourage appropriate regulatory agencies to enforce reasonable water quality regulations affecting the Basin Area, including regulation of solid and liquid waste disposal.

i. Notice List. To maintain a current list of Responsible Parties to receive notice hereunder.

j. Annual Administrative Budget. To prepare a proposed administrative budget for each Year, hold hearings thereon, and adopt an administrative budget according to the time schedule set forth in Exhibit "D". The administrative budget shall set forth budgeted items and Administrative Assessments in sufficient detail to show the allocation of the expense among the Producers. Following the adoption of the budget, expenditures within budgeted items may thereafter be made by Watermaster in the exercise of powers herein granted, as a matter of course.

k. Annual Report to Court.

(1) To file an Annual report with this Court not later than April 1 of each Year beginning April 1 following the

first full Year after entry of Judgment. Prior to filing the Annual report with the Court, Watermaster shall notify all Parties that a draft of the report is available for review and shall provide notice of a hearing to receive comments and recommendations for changes in the report. The public hearing shall be conducted on the same date and at the same place as the hearings required by Paragraphs 3 and 4 of Exhibit "D". The notice of hearing may include such summary of the draft report as Watermaster may deem appropriate. Watermaster shall also distribute the report to the Parties requesting copies.

(2) The Annual report shall include an Annual fiscal report of the preceding Year's operation and shall include details as to operation of each of the Subareas and an audit of all Assessments and expenditures pursuant to this Physical Solution and a review of Watermaster activities pursuant to this Judgment. The Annual report shall include a compilation of at least the following:

Determinations and data required by:

i) Paragraph 24(c) (Makeup and Replacement Obligations)

ii) Paragraph 24(e) (Hydrologic Data Collection)

iii) Paragraph 24(g) (Purchase of and Recharge with Supplemental Water)

iv) Paragraph 24(i) (Notice List)

Rules and regulations adopted pursuant to:

v) Paragraph 24(a) (Rules and Regulations)

vi) Paragraph 24(d) (Measuring Devices, etc.)

vii) Paragraph 24(s) (Storage Agreements)

Reports required by:

viii) Paragraph 24(j) (Annual Administrative Budget)

ix) Paragraph 24(n) (Transfers)

x) Paragraph 24(o) (Free Production Allowance)

xi) Paragraph 24(p) (Production Reports)

xii) Exhibit "D" (Prior Year Report)

xiii) Exhibit "F" (Transfers of Base Annual Production Rights)

xiv) Exhibit "G" (Status of Subarea Obligation)

xv) Exhibit "H" (Biological Resource Mitigation)

l. Investment of Funds. To hold and invest any funds in investments authorized from time to time for public agencies in the State of California.

m. Borrowing. To borrow in anticipation of receipt of Assessment proceeds in an amount not to exceed the Annual amount of Assessments levied but uncollected.

n. Transfers. To prepare on an Annual basis and maintain a report or record of any transfer of Base Annual Production Rights. Such report or record shall be available for inspection by any Party upon reasonable notice to the Watermaster.

o. Free Production Allowance. Not later than the end of the 1997-1998 Water Year, and Annually thereafter, to recommend in the Watermaster Annual Report an adjustment, if needed, to the Free Production Allowance for any Subarea. In making its recommendation, Watermaster shall be guided by the factors set forth in Exhibit "C", including but not limited to an annual calculation of the change of water in storage. The Annual report shall include all assumptions and calculations relied upon in making its recommendations. Following the 1997-1998 Water Year,

or any time thereafter, Watermaster shall obtain prior Court approval for any increase or reduction of any Subarea's Free Production Allowance. In no event shall a reduction in any Year for a Subarea exceed five percent of the aggregate Base Annual Production of that Subarea. In the event Watermaster recommends in its report to the Court that the Free Production Allowance for any Subarea may need to be increased or reduced, the Court shall conduct a hearing, after notice given by Watermaster according to paragraph 36, upon Watermaster's recommendations and may order such changes in Subarea Free Production Allowance. The most recent Subarea Free Production Allowances shall remain in effect until revised according to this Paragraph 24(o).

p. Production Reports. To require each Producer to file with Watermaster, pursuant to procedures and time schedules to be established by Watermaster, a report on a form to be prescribed by Watermaster showing the total Production of such Party for each reporting period rounded off to the nearest tenth of an acre foot, and such additional information and supporting documentation as Watermaster may require.

q. Production Adjustment for Change in Purpose of Use. If Watermaster determines, using the Consumptive Use rates set forth in Exhibit "F", that a new Purpose of Use of any Producer's Production for any Year has resulted in a higher rate of Consumption than the rate applicable to the original Purpose of Use of that Producer's Production in the Year for which Base Annual Production was determined, Watermaster shall use a multiplier (1) to adjust upward such Production for the purpose of determining the Producer's Replacement Water Assessment and, (2) to adjust upward

the Free Production Allowance portion of such Production for the purpose of determining the Producer's Makeup Water Assessment. The multiplier shall be determined by dividing the number of acre feet of Consumption that occurred under the new Purpose of Use by the number of acre feet of Consumption that would have occurred under the original Purpose of Use for the same Production.

r. Reallocation of Base Annual Production Rights. To reallocate annually the Base Annual Production Rights in each Subarea to reflect any permanent transfers of such Rights among Parties.

s. Storage Agreements. To enter into Storage Agreements with any Party in order to accommodate the acquisition of Supplemental Water. Watermaster may not enter into Storage Agreements with non-Parties unless such non-Parties become subject to the provisions of this Judgment and the jurisdiction of the Court. Such Storage Agreements shall by their terms preclude operations which will have a substantial adverse impact on any Producer. If a Party pursuant to a Storage Agreement has provided for predelivery or postdelivery of Replacement Water for the Party's use, Watermaster shall at the Party's request credit such water to the Party's Replacement Obligation. Watermaster shall adopt uniformly applicable rules for Storage Agreements. Watermaster shall calculate additions, extractions and losses of water stored under Storage Agreements and maintain an Annual account of all such water.

t. Subarea Advisory Committee Meetings. To meet on a regular basis and at least semi-annually with the Subarea Advisory Committees to review Watermaster activities pursuant to

this Judgment and to receive advisory recommendations from the Subarea Advisory Committees.

u. Unauthorized Production. To bring such action or motion as is necessary to enjoin unauthorized Production as provided in Paragraph 12 hereinabove.

v. Meetings and Records. To ensure that all meetings and hearings by Watermaster shall be noticed and conducted according to then current requirements of the Ralph M. Brown Act, Government Code Sections 54950, et seq. Watermaster files and records shall be available to any person according to the provisions of the Public Records Act, Government Code §§ 6200 et seq.

w. Data, Estimates and Procedures. To rely on and use the best available records and data to support the implementation of this Judgment. Where actual records of data are not available, Watermaster shall rely on and use sound scientific and engineering estimates. Watermaster may use preliminary records of measurements, and, if revisions are subsequently made, Watermaster may reflect such revisions in subsequent accounting. Exhibit "C" sets forth methods and procedures for determining surface flow components. Watermaster shall use either the same procedures or procedures that will yield results of equal or greater accuracy.

x. Biological Resource Mitigation. To implement the Biological Resource Mitigation measures set forth in Exhibit "H" herein.

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C. ASSESSMENTS

25. Purpose. Watermaster shall levy and collect Assessments from the Parties based upon Production in accordance with the time schedules set forth in Exhibit "D". Watermaster shall levy and collect such Assessments as follows:

a. Administrative Assessments. Administrative Assessments to fund the Administrative Budget adopted by the Watermaster pursuant to Paragraph 24(j) shall be levied uniformly against each acre foot of Production. A Producer who does not Produce in a given Year shall pay an Administrative Assessment in amount equal to the lowest MWA assessment for Minimal Producers for that Year.

b. Replacement Water Assessments. Replacement Water Assessments shall be levied against each Producer on account of such Producer's Production, after any adjustment pursuant to Paragraph 24(q), in excess of such Producer's share of the Free Production Allowance in each Subarea during the prior Year.

c. Makeup Water Assessments. Makeup Water Assessments shall be levied against each Producer in each Subarea on account of each acre-foot of Production therein which does not bear a Replacement Assessment hereunder, after any adjustment pursuant to Paragraph 24(q), to pay all necessary costs of satisfying the Makeup Obligation, if any, of that Subarea.

d. Biological Resource Assessment. To establish and, to the extent needed, to maintain the Biological Resource Trust Fund balance at one million dollars (in 1993 dollars) pursuant to Paragraph 24(x) and Exhibit "H", a Biological Resource Assessment in an amount not to exceed fifty cents (in 1993 dollars)

for each acre-feet of Production shall be levied uniformly against each producer except the California Department of Fish and Game.

e. MWA Assessment of Minimal Producers. The MWA shall identify and assess Minimal Producers through its own administrative procedures, and not acting as Watermaster.

26. Procedure. Each Party hereto is ordered to pay the Assessments herein provided for, which shall be levied and collected in accordance with the procedures and schedules set forth in Exhibit "D". Any Assessment which becomes delinquent, as defined in Paragraph 7 of Exhibit "D", shall bear interest at the then current San Bernardino County property tax delinquency rate Said interest rate shall be applicable to any said delinquent Assessment from the due date thereof until paid. Such delinquent Assessment, together with interest thereon, costs of suit, attorneys fees and reasonable costs of collection, may be collected pursuant to motion giving notice to the delinquent Party only, or Order to Show Cause proceeding, or such other lawful proceeding as may be instituted by the Watermaster; and shall, if provided for in the MWA Act, constitute a lien on the property of the Party as of the same time and in the same manner as does the tax lien securing County property taxes. The Watermaster shall Annually certify a list of all such unpaid delinquent Assessments to the MWA (in accordance with applicable provisions of the MWA Act). The MWA (in accordance with applicable provisions of the MWA Act) shall include the names of those Parties and the amounts of the liens in its list to the County Assessor's Office in the same manner and at the same time as it does its administrative assessments. MWA shall account for receipt of all collections of Assessments collected pursuant to

this Judgment, and shall pay such amounts collected pursuant to this Judgment to the Watermaster. The Watermaster shall also have the ability to enjoin production of those Persons who do not pay Assessments pursuant to this Judgment.

27. Availability of Supplemental Water. All Replacement and Makeup Water Assessments collected by the Watermaster shall be used to acquire Supplemental Water from MWA. Watermaster shall determine when to request Supplemental Water from MWA and shall determine the amount of Supplemental Water to be requested. MWA shall use its best efforts to acquire as much Supplemental Water as possible in a timely manner. If MWA encounters delays in the acquisition of Supplemental Water which, due to cost increases, results in collected assessment proceeds being insufficient to purchase all Supplemental Water for which the Assessments were made, MWA shall purchase as much water as the proceeds will allow when the water becomes available. If available Supplemental Water is insufficient to meet all Makeup and Replacement Water obligations, Watermaster shall allocate the Supplemental Water for delivery to the Subareas on an equitable and practicable basis pursuant to duly adopted Watermaster rules and regulations, giving preference to: First, Transition Zone Replacement Water Obligations as set forth in Exhibit "G"; Second, Makeup Water Obligations; and Third, other Replacement Water Obligations. MWA may acquire Supplemental Water at any time. MWA shall be entitled to enter into a Storage Agreement with Watermaster to store water MWA acquires prior to being paid to do so by Watermaster. Such water, including such water acquired and stored prior to the date of this Judgment or prior to the entry of

a Storage Agreement, may later be used to satisfy MWA's duty under this paragraph.

28. Use of Replacement Water Assessment Proceeds and Makeup Water Assessment Proceeds. The Proceeds of Replacement Water Assessments and any interest accrued thereon shall only be used for the purchase of Replacement Water for that Subarea from which they were collected. In addition, the proceeds of Replacement Water Assessments collected on account of Production in the Transition Zone, except as provided in Exhibit "G", shall only be used for the purchase of Replacement Water for the Transition Zone, and the proceeds of Replacement Water Assessments collected on account of Production in that portion of the Baja Subarea downstream of the Calico-Newberry fault shall only be used for the purchase of Replacement Water for that portion of the Baja Subarea downstream of the Calico-Newberry fault. The proceeds of Makeup Water Assessments and any interest accrued thereon shall only be used for the purchase of Makeup Water to satisfy the Makeup Obligation for which they are collected.

29. MWA Annual Report to the Watermaster. MWA shall Produce and deliver to Watermaster an Annual written report regarding actions of MWA required by the terms of this Judgment. The report shall contain: 1) a summary of the actions taken by MWA in identifying and assessing Minimal Producers, including a report of Assessments made and collected; 2) a summary of other MWA activities in collecting Assessment on behalf of Watermaster; 3) a report of water purchases and water distribution for the previous Year; 4) actions taken to implement its Regional Water Management Plan, including actions relating to conveyance facilities referred

to in this Judgment. The MWA report will be provided to Watermaster not less than 30 days prior to the Annual Watermaster report to the Court required by this Judgment.

D. SUBAREA ADVISORY COMMITTEES.

30. Authorization. The Producers in each of the five Subareas are hereby authorized and directed to cause committees of Producer representatives to be organized and to act as Subarea Advisory Committees.

31. Composition and Election. Each Subarea Advisory Committee shall consist of five (5) Persons who shall be called advisors. In the election of advisors, every Party shall be entitled to one vote for every acre-foot of Base Annual Production for that Party in that particular Subarea. Parties may cumulate their votes and give one candidate a number of votes equal to the number of advisors to be elected multiplied by the number of votes to which the Party is normally entitled, or distribute the Party's votes on the same principle among as many candidates as the Party thinks fit. In any election of advisors, the candidates receiving the highest number of affirmative votes of the Parties are elected. Elections shall be held upon entry of this Judgment and thereafter every third year. In the event a vacancy arises, a temporary advisor shall be appointed by unanimous decision of the other four advisors to continue in office until the next scheduled election. The California Department of Fish and Game shall serve as a permanent ex-officio member of the Alto and Baja Subarea Advisory Committees. Rules and regulations regarding organization, meetings and other activities shall be at the discretion of the individual

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Subarea Advisory Committees, except that all meetings of the committees shall be open to the public.

32. Compensation. The Subarea Advisory Committee members shall serve without compensation.

33. Powers and Functions. The Subarea Advisory Committee for each Subarea shall act in an advisory capacity only and shall have the duty to study, review and make recommendations on all discretionary determinations made or to be made hereunder by Watermaster which may affect that Subarea.

E. TRANSFERABILITY.

34. Assignment, Transfer, etc. of Rights. In order to further the purposes of this Judgment and Physical Solution, any Base Annual Production Right, or any portion thereof, may be sold, assigned, transferred, licensed or leased pursuant to the rules and procedures set forth in Exhibit "F".

F. MISCELLANEOUS PROVISIONS.

35. Water Quality. Nothing in this Judgment shall be interpreted as relieving any Party of its responsibilities to comply with state or federal laws for the protection of water quality or the provisions of any permits, standards, requirements, or orders promulgated thereunder.

36. Review Procedures. Any action, decision, rule or procedure of Watermaster pursuant to this Judgment shall be subject to review by the Court on its own motion or on timely motion by any Party, as follows:

a. Effective Date of Watermaster Action. Any order, decision or action of Watermaster pursuant to this Judgment on noticed specific agenda items shall be deemed to have occurred

on the date of the order, decision or action.

b. Notice of Motion. Any Party, may, by a regularly noticed motion, petition the Court for review of Watermaster's action or decision pursuant to this Judgment. The motion shall be deemed to be filed when a copy, conformed as filed with the Court, has been delivered to Watermaster together with the service fee established by Watermaster sufficient to cover the cost to photocopy and mail the motion to each Party. Watermaster shall prepare copies and mail a copy of the motion to each Party or its designee according to the official service list which shall be maintained by Watermaster according to Paragraph 37. A Party's obligation to serve notice of a motion upon the Parties is deemed to be satisfied by filing the motion as provided herein. Unless ordered by the Court, any such petition shall not operate to stay the effect of any Watermaster action or decision which is challenged.

c. Time for Motion. A motion to review any Watermaster action or decision shall be filed within ninety (90) days after such Watermaster action or decision, except that motions to review Watermaster Assessments hereunder shall be filed within thirty (30) days of mailing of notice of the Assessment.

d. De Novo Nature of Proceeding. Upon filing of a petition to review Watermaster action, the Watermaster shall notify the Parties of a date when the Court will take evidence and hear argument. The Court's review shall be de novo and the Watermaster decision or action shall have no evidentiary weight in such proceeding.

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e. Decision. The decision of the Court in such proceeding shall be an appealable Supplemental Order in this case. When the same is final, it shall be binding upon Watermaster and the Parties.

f. Payment of Assessments. Payment of Assessments levied by Watermaster hereunder shall be made pursuant to the time schedule in Exhibit "D"; notwithstanding any motion for review of Watermaster actions, decisions, rules or procedures, including review of Watermaster Assessments.

37. Designation of Address for Notice and Service. Each Party shall designate the name and address to be used for purposes of all subsequent notices and service herein, either by its endorsement on the Stipulation for Judgment or by a separate designation to be filed within thirty (30) days after Judgment has been entered. Said designation may be changed from time to time by filing a written notice of such change with Watermaster. Any Party desiring to be relieved of receiving notices of Watermaster activity may file a waiver of notice on a form to be provided by Watermaster. Watermaster shall maintain at all times a current list of Parties to whom notices are to be sent and their addresses for purposes of service. Watermaster shall also maintain a full current list of names and addresses of all Parties or their successors, as filed herein. Copies of such lists shall be available to any Person. If no designation is made, a Party's designee shall be deemed to be, in order of priority: i) the Party's attorney of record; ii) if the Party does not have an attorney of record, the Party itself at the address on the Watermaster list.

38. Service of Documents. Delivery to or service upon any Party by Watermaster, by any other Party, or by the Court, of any document required to be served upon or delivered to a Party under or pursuant to the Judgment shall be deemed made if made by Deposit thereof (or by copy thereof) in the mail, first class, postage prepaid, addressed to the designee of the Party and at the address shown in the latest designation filed by that Party.

39. No Abandonment of Rights. It is in the interest of reasonable beneficial use of the Basin Area and its water supply that no Party be encouraged to take and use more water in any Year than is actually required. Failure to Produce all of the water to which a Party is entitled hereunder shall not, in and of itself, be deemed or constitute an abandonment of such Party's right, in whole or in part.

40. Intervention After Judgment. Any person who is not a Party or successor to a Party and who proposes to Produce water from the Basin Area may seek to become a Party to this Judgment through a Stipulation for Intervention entered into with Watermaster. Watermaster may execute said Stipulation on behalf of the other Parties herein but such Stipulation shall not preclude a Party from opposing such Intervention at the time of the Court hearing thereon. Said Stipulation for Intervention must thereupon be filed with the Court, which will consider an order confirming said intervention following thirty (30) days' notice to the Parties. Thereafter, if approved by the Court, such intervenor shall be a Party bound by this Judgment and entitled to the rights and privileges accorded under the Physical Solution herein.

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41. Recordation of Notice. MWA shall within sixty (60) days following entry of this Judgment record in the Office of the County Recorder of the County of San Bernardino a notice substantially complying with the notice content requirements set forth in Section 2529 of the California Water Code.

42. Judgment Binding on Successors, etc. Subject to specific provisions hereinbefore contained, this Judgment and all provisions thereof are applicable to and binding upon and inure to the benefit of not only the Parties to this action, but as well to their respective heirs, executors, administrators, successors, assigns, lessees, licensees and to the agents, employees and attorneys in fact of any such Persons.

43. Costs. No Party stipulating to this Judgment shall recover any costs or attorneys fees in this proceeding from another stipulating Party.

44. Entry of Judgment. The Clerk shall enter this Judgment.

Dated: JAN 10 1996

E. MICHAEL KAISER

E. Michael Kaiser, Judge
Superior Court of the State
of California for the
County of Riverside

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]

EXHIBIT B

PRODUCTION TABLES

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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 [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
ABSHIRE, DAVID V	24	0.1093	24	22	21	20	19
ANDERSON, ROSS C & BETTY J	34	0.1548	34	32	30	28	27
BAR H MUTUAL WATER COMPANY	53	0.2414	53	50	47	45	42
BELL, CHUCK	494	2.2497	494	469	444	419	395
BURNS, BOBBY J & EVELYN J	1,300	5.9204	1,300	1,235	1,170	1,105	1,040
CASA COLINA FOUNDATION	90	0.4099	90	85	81	76	72
CENTER WATER CO	40	0.1822	40	38	36	34	32
CLUB VIEW PARTNERS	1,276	5.8111	1,276	1,212	1,148	1,084	1,020
CROSS, LAWRENCE E	23	0.1047	23	21	20	19	18
CRYSTAL HILLS WATER COMPANY	194	0.8835	194	184	174	164	155
DAHLQUIST, GEORGE R	594	2.7052	594	564	534	504	476
DELPERDANG, ROBERT H	56	0.2550	56	53	50	47	44
DESERT DAWN MUTUAL WATER COMPANY	15	0.0683	15	14	13	12	12
GASTA, TRINIDAD	512	2.3317	512	486	460	435	409
GAYJIKIAN, SAMUEL & HAZEL	102	0.4645	102	96	91	86	81
GRACETOWN INVESTMENT CO - JETCO PROP FUND	752	3.4247	752	714	676	639	601
GUBLER, HANS	30	0.1366	30	28	27	25	24
HAL-DOR LTD	23	0.1047	23	21	20	19	18
HANDLEY, DON R & MARY ANN	73	0.3325	73	69	65	62	58
HART, MERRILL W	473	2.1541	473	449	425	402	378
HERT, SCOTT	276	1.2569	276	262	248	234	220
HI-GRADE MATERIALS	442	2.0129	442	419	397	375	353
HITCHIN LUCERNE, INC	16	0.0729	16	15	14	13	12
JAMS RANCH	28	0.1275	28	26	25	23	22

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ESTE SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
JUBILEE MUTUAL WATER COMPANY	142	0.6467	142	134	127	120	113
JUNIPER RIVIERA COUNTY WATER DISTRICT	37	0.1685	37	35	33	31	29
LEE, DOO HWAN	78	0.3552	78	74	70	66	62
LOPEZ, BALTAZAR	385	1.7533	385	365	346	327	308
LUA, ANTONIO	348	1.5848	348	330	313	295	278
LUCERNE VALLEY MUTUAL WATER COMPANY	54	0.2459	54	51	48	45	43
LUCERNE VALLEY PARTNERS	1,213	5.5242	1,213	1,152	1,091	1,031	970
LUCERNE VISTA WATER CO	21	0.0956	21	19	18	17	16
MITSUBISHI CEMENT CORPORATION	1,299	5.9158	1,299	1,234	1,169	1,104	1,039
MONACO INVESTMENT COMPANY	70	0.3188	70	66	63	59	56
MOSS, LAWRENCE W & HELEN J	43	0.1958	43	40	38	36	34
PARK, CHANHO	597	2.7188	597	567	537	507	477
PARK, JEONG, IL & HEA JA	96	0.4372	96	91	86	81	76
PEREZ, EVA	247	1.1249	247	234	222	209	197
PETTIGREW, DAN	1,422	6.4760	1,422	1,350	1,279	1,208	1,137
PETTIGREW, HOWARD L	1,500	6.8312	1,500	1,425	1,350	1,275	1,200
PLUESS-STAUFER CALIFORNIA INC	23	0.1047	23	21	20	19	18
REED, MIKE	58	0.2641	58	55	52	49	46
ROGERS, ROY	1,449	6.5990	1,449	1,376	1,304	1,231	1,159
SAN BERNARDINO CO SERVICE AREA 29	21	0.0956	21	19	18	17	16
SEALS, LAWRENCE	113	0.5146	113	107	101	96	90
SON'S RANCH	140	0.6376	140	133	126	119	112
SOUTHERN CALIFORNIA WATER COMPANY	178	0.8106	178	169	160	151	142
SPECIALTY MINERALS, INC	42	0.1913	42	39	37	35	33

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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 [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
SPILLMAN, JAMES R & NANCY J	23	0.1047	23	21	20	19	18
STEWART WATER COMPANY	54	0.2459	54	51	48	45	43
STRINGER, W EDWARD	573	2.6095	573	544	515	487	458
THE CUSHENBURY TRUST, C/O SPECIALTY MINERALS, INC	10	0.0455	10	9	9	8	8
TURNER, LOYD & CAROL	77	0.3507	77	73	69	65	61
VISOSKY, JOSEPH F JR	1,120	5.1006	1,120	1,064	1,008	952	896
WEISER, SIDNEY & RAQUEL	90	0.4099	90	85	81	76	72
WILLOW WELLS MUTUAL WATER COMPANY	30	0.1366	30	28	27	25	24

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FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND YEAR [3]	THIRD YEAR [3]	FOURTH YEAR [3]	FIFTH YEAR [3]
MINIMAL PRODUCER POOL	2,000	9.1083	2,000	1,900	1,800	1,700	1,600
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	1,485	6.7629					
ESTE SUBAREA TOTALS =	21,958	100					

1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.

2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.

3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN OBSTR SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

OBSTR 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
AEROCHEM, INC	660	5.3645	660	627	594	561	528
BROWN, DOUG & SUE	46	0.3739	46	43	41	39	36
CHAMISAL MUTUAL	96	0.7803	96	91	86	81	76
DAVIS, PAUL	19	0.1544	19	18	17	16	15
DOSSEY, D A	14	0.1138	14	13	12	11	11
MEADOWBROOK DAIRY	2,335	18.9791	2,335	2,218	2,101	1,984	1,868
RESSEGUE, JOHN & BILL	259	2.1052	259	246	233	220	207
SAN BERNARDINO CO SERVICE AREA 70G	110	0.8941	110	104	99	93	88
SAN BERNARDINO CO SERVICE AREA 70L	1,306	10.6153	1,306	1,240	1,175	1,110	1,044
THORESON, ROBERT F & A KATHLEEN	40	0.3251	40	38	36	34	32
TROEGER, RICHARD H	112	0.9103	112	106	100	95	89
VAN DAM BROTHERS	1,860	15.1183	1,860	1,767	1,674	1,581	1,488

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN OBSTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

OBSTE 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	1,500	12.1921	1,500	1,425	1,350	1,275	1,200
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	3,946	32.0735					
OBSTE SUBAREA TOTALS =	12,303	100					

1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.

2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.

3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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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 [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
ABBOND, EDWARD & GRACE	28	0.0229	28	26	25	23	22
ABBOTT, LEONARD C	284	0.2321	284	269	255	241	227
ADELANTO, CITY OF	1,573	1.2855	1,573	1,494	1,415	1,337	1,258
ADELANTO, CITY OF - GEORGE A F B	3,433	2.8055	3,433	3,261	3,089	2,918	2,746
AGCON, INC	384	0.3138	384	364	345	326	307
APPLE VALLEY COUNTRY CLUB	709	0.5794	709	673	638	602	567
APPLE VALLEY DEVELOPMENT	724	0.5917	724	687	651	615	579
APPLE VALLEY FOOTHILL CO WATER DISTRICT	167	0.1365	167	158	150	141	133
APPLE VALLEY HEIGHTS COUNTY WATER DISTRICT	125	0.1022	125	118	112	106	100
APPLE VALLEY RANCHOS WATER COMPANY	13,022	10.6419	13,022	12,370	11,719	11,068	10,417
APPLE VALLEY RECREATION & PARKS	45	0.0368	45	42	40	38	36
APPLE VALLEY VIEW MUTUAL WATER CO	36	0.0294	36	34	32	30	28
APPLE VALLEY, TOWN OF	298	0.2435	298	283	268	253	238
ARC LAS FLORES	6,331	5.1739	6,331	6,014	5,697	5,381	5,064
BACA, ENRIQUE	74	0.0605	74	70	66	62	59
BALDY MESA WATER DISTRICT	1,495	1.2218	1,495	1,420	1,345	1,270	1,196
BASS, NEWTON T	514	0.4201	514	488	462	436	411
BASTIANON, REMO	77	0.0629	77	73	69	65	61
BASURA, STEVE	25	0.0204	25	23	22	21	20
BEINSCHROTH, A J	90	0.0736	90	85	81	76	72
BOYCE, KENNETH & WILLA	102	0.0834	102	96	91	86	81
BROWN, BOBBY G & VALERIA R	42	0.0343	42	39	37	35	33
BURNS, ULYSSES & ANNIE L	164	0.1340	164	155	147	139	131
CARDOZO, MANUEL & MARIA	909	0.7429	909	863	818	772	727

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TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
CDFG - MOJAVE NARROWS REGIONAL PARK	2,107	1.7219	2,107	2,001	1,896	1,790	1,685
CDFG - MOJAVE RIVER FISH HATCHERY	20	0.0163	20	19	18	17	16
CLARK, KENNETH R	223	0.1822	223	211	200	189	178
CLEAR VIEW FARMS	501	0.4094	501	475	450	425	400
COPELAND, ET AL (C/O DON W. LITTLE)	175	0.1430	175	166	157	148	140
CRAMER, MARGARET MUIR	280	0.2288	280	266	252	238	224
CUNNINGHAM, WILLIAM	29	0.0237	29	27	26	24	23
DEXTER, CLAIR F	175	0.1430	175	166	157	148	140
DEXTER, J P	515	0.4209	515	489	463	437	412
DIBERNARDO, JOHN	203	0.1659	203	192	182	172	162
DOLCH, ROBERT & JUDY	426	0.3481	426	404	383	362	340
DOMBROWSKI, MICHAEL W & SUSAN M	19	0.0155	19	18	17	16	15
DOWSE, PHILIP	20	0.0163	20	19	18	17	16
EVENSON, EDWIN H & JOYCELAINE	70	0.0572	70	66	63	59	56
FISHER, DOLORES DR	48	0.0392	48	45	43	40	38
FISHER, JEROME	633	0.5173	633	601	569	538	506
FITZWATER, R E	291	0.2378	291	276	261	247	232
GARCIA, SONIA L	288	0.2354	288	273	259	244	230
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
HELENDALE SCHOOL DISTRICT	18	0.0147	18	17	16	15	14
HESPERIA GOLF AND COUNTRY CLUB	678	0.5541	678	644	610	576	542
HESPERIA WATER DISTRICT	12,213	9.9808	12,213	11,602	10,991	10,381	9,770

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EXHIBIT B

TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
HI-GRADE MATERIALS	149	0.1218	149	141	134	126	119
HODGE, STANLEY W	67	0.0548	67	63	60	56	53
HOLWAY, ROBERT	88	0.0719	88	83	79	74	70
HRUBIK, THOMAS A	3,862	3.1561	3,862	3,668	3,475	3,282	3,089
INDUSTRIAL ASPHALT	109	0.0891	109	103	98	92	87
JESS RANCH WATER COMPANY	7,480	6.1129	7,480	7,106	6,732	6,358	5,984
JOHNSON, LARRY & CARLEAN	82	0.0670	82	77	73	69	65
JOHNSON, RONALD	31	0.0253	31	29	27	26	24
JOHNSTON, HARRIET AND LARRY W	127	0.1038	127	120	114	107	101
KEMPER CAMPBELL RANCH	473	0.3865	473	449	425	402	378
LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT	658	0.5377	658	625	592	559	526
LAWSON, ERNEST & BARBARA	15	0.0123	15	14	13	12	12
LENHERT, RONALD & TONI	37	0.0302	37	35	33	31	29
LEWIS HOMES OF CALIFORNIA	1,693	1.3836	1,693	1,608	1,523	1,439	1,354
LONGMAN, JACK	115	0.0940	115	109	103	97	92
LOUNSBURY, J PETER & CAROLYN	208	0.1700	208	197	187	176	166
LOW, ROBERT	399	0.3261	399	379	359	339	319
LUCKEY, MANLEY J	800	0.6538	800	760	720	680	640
LUTH, KEN	27	0.0221	27	25	24	22	21
MARIANA RANCHOS COUNTY WATER DISTRICT	245	0.2002	245	232	220	208	196
MCCALL, REX	44	0.0360	44	41	39	37	35
MCINNIS, WILLIAM S	30	0.0245	30	28	27	25	24
MITCHELL, ROBIN & JUDITH	36	0.0294	36	34	32	30	28
MURPHY, BERNARD H	25	0.0204	25	23	22	21	20

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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 [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
MURPHY, BERNARD TRUST	162	0.1324	162	153	145	137	129
MURPHY, KENNETH	42	0.0343	42	39	37	35	33
MUTUAL FUNDING CORP	101	0.0825	101	95	90	85	80
NAVAJO MUTUAL WATER CO	88	0.0719	88	83	79	74	70
NUNN, DONALD & PEARL	66	0.0539	66	62	59	56	52
O'BRYANT, ROBERT C & BARBARA	107	0.0874	107	101	96	90	85
ORMSBY, HARRY G	386	0.3154	386	366	347	328	308
PALISADES RANCH	824	0.6734	824	782	741	700	659
PARKER, DAVID E	37	0.0302	37	35	33	31	29
PEARL, ALICE	147	0.1201	147	139	132	124	117
PEARSON, DERYL B	22	0.0180	22	20	19	18	17
PERRY, THOMAS A	35	0.0286	35	33	31	29	28
PETTIS TRUST	126	0.1030	126	119	113	107	100
PHENIX PROPERTIES LTD	652	0.5328	652	619	586	554	521
PITTMAN, LEROY W	148	0.1209	148	140	133	125	118
POLICH, LEE & DONNA	65	0.0531	65	61	58	55	52
RANCHERITOS MUTUAL WATER CO	169	0.1381	169	160	152	143	135
RIVERSIDE CEMENT CO - ORO GRANDE PLANT	3,452	2.8211	3,452	3,279	3,106	2,934	2,761
ROGERS, ROY (ORO GRANDE RANCH)	115	0.0940	115	109	103	97	92
RUDMAN, ROBERT T	300	0.2452	300	285	270	255	240
RUE RANCH	30	0.0245	30	28	27	25	24
SAN BERNARDINO CO SERVICE AREA 42	465	0.3800	465	441	418	395	372
SAN BERNARDINO CO SERVICE AREA 64	3,822	3.1234	3,822	3,630	3,439	3,248	3,057
SAN BERNARDINO CO SERVICE AREA 70C	2,346	1.9172	2,346	2,228	2,111	1,994	1,876

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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 [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
SAN BERNARDINO CO SERVICE AREA 70J	1,005	0.8213	1,005	954	904	854	804
SAN BERNARDINO CO SERVICE AREA 70L	355	0.2901	355	337	319	301	284
SAN FILIPPO, JOSEPH & SHELLEY	35	0.0286	35	33	31	29	28
SILVER LAKES ASSOCIATION	3,987	3.2583	3,987	3,787	3,588	3,388	3,189
SOUTHDOWN, INC	1,519	1.2414	1,519	1,443	1,367	1,291	1,215
SOUTHERN CALIFORNIA WATER COMPANY	940	0.7682	940	893	846	799	752
SPRING VALLEY LAKE ASSOCIATION	3,056	2.4974	3,056	2,903	2,750	2,597	2,444
SPRING VALLEY LAKE COUNTRY CLUB	977	0.7984	977	928	879	830	781
STORM, RANDALL	62	0.0507	62	58	55	52	49
SUDMEIER, GLENN W	121	0.0989	121	114	108	102	96
SUMMIT VALLEY RANCH	452	0.3694	452	429	406	384	361
TATRO, RICHARD K & SANDRA A	280	0.2288	280	266	252	238	224
TATUM, JAMES B	829	0.6775	829	787	746	704	663
TAYLOR, ALLEN C / HAYMAKER RANCH	456	0.3727	456	433	410	387	364
THOMAS, S DALE	440	0.3596	440	418	396	374	352
THOMAS, WALTER	36	0.0294	36	34	32	30	28
THOMPSON, JAMES A	418	0.3416	418	397	376	355	334
THOMPSON, RODGER	76	0.0621	76	72	68	64	60
THRASHER, GARY	373	0.3048	373	354	335	317	298
THUNDERBIRD COUNTY WATER DISTRICT	118	0.0964	118	112	106	100	94
TURNER, ROBERT	70	0.0572	70	66	63	59	56
VAIL, JOSEPH B & PAULA E	126	0.1030	126	119	113	107	100
VAN BURGER, CARL	710	0.5802	710	674	639	603	568
VAN LEEUWEN FAMILY TRUST	341	0.2787	341	323	306	289	272

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

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

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TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA / PRODUCER	BASE ANNUAL [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	4,000	3.2689	4,000	3,800	3,600	3,400	3,200
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	4,967	4.0592					
ALTO SUBAREA TOTALS =	122,365	100					

1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.

2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.

3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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TABLE 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
AGCON, INC	0	0.0000	0	0	0	0	0
AGUAYO, JEANETTE L	212	0.3742	212	201	190	180	169
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	120	0.2118	120	114	108	102	96
AVDEEF, THOMAS	34	0.0600	34	32	30	28	27
AZTEC FARM DEVELOPMENT COMPANY	220	0.3883	220	209	198	187	176
BARNES, FAY - EXECUTOR OF ESTATE OF WAYNE BARNES	243	0.4289	243	230	218	206	194
BROMMER, MARVIN	361	0.6372	361	342	324	306	288
BURNS, RITA J & PAMELA E	16	0.0282	16	15	14	13	12
CHAFA, LARRY R	96	0.1694	96	91	86	81	76
CHOI, YONG IL & JOUNG AE	38	0.0671	38	36	34	32	30
CHRISTISON, JOEL	75	0.1324	75	71	67	63	60
COOK, KWON W	169	0.2983	169	160	152	143	135
DE VRIES, NEIL	3,800	6.7070	3,800	3,610	3,420	3,230	3,040
DESERT COMMUNITY BANK	156	0.2753	156	148	140	132	124
DURAN, FRANK T	50	0.0883	50	47	45	42	40
GAINES, JACK	117	0.2065	117	111	105	99	93
GESIRICH, WAYNE	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	131	124	117	110
GRIEDER, RAYMOND H & DORISANNE	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & MILLIE D	21	0.0371	21	19	18	17	16
GROEN, CORNELIS	1,043	1.8409	1,043	990	938	886	834
HANIFY, DBA - WHITE BEAR RANCH	152	0.2683	152	144	136	129	121
HARNSEN, 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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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 PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
HI DESERT MUTUAL WATER CO	34	0.0600	34	32	30	28	27
HILEMAN, KATHERINE	19	0.0335	19	18	17	16	15
HILL, MELVIN	2,335	4.1213	2,335	2,218	2,101	1,984	1,868
HOY, MIKE	632	1.1155	632	600	568	537	505
JORDAN, RAYMOND	460	0.8119	460	437	414	391	368
JUSTICE, CHRIS	421	0.7431	421	399	378	357	336
KING, GENEVIEVE R	69	0.1218	69	65	62	58	55
LEE, SEPOONG ETAL & WOO POONG	77	0.1359	77	73	69	65	61
LEYERLY, GENEVA	65	0.1147	65	61	58	55	52
LEYERLY, RICHARD	862	1.5214	862	818	775	732	689
LUDINGTON, JAMES E & JO ANN	58	0.1024	58	55	52	49	46
LYON, LOUIS & ERIKA	130	0.2295	130	123	117	110	104
MARTIN, LENDELL	14	0.0247	14	13	12	11	11
MCCOLLUM, CHARLES L	347	0.6125	347	329	312	294	277
MEAD, G C	90	0.1589	90	85	81	76	72
MEYERS, LONNIE	27	0.0477	27	25	24	22	21
MITCHELL, CHARLES A	201	0.3548	201	190	180	170	160
MOFFITT, THOMAS R & EDITH I	62	0.1094	62	58	55	52	49
MOST, MILTON W	9,660	17.0500	9,660	9,177	8,694	8,211	7,728
NELSON, MILDRED L	52	0.0918	52	49	46	44	41
NEWBERRY SPRINGS COMPANY, INC	2,489	4.3931	2,489	2,364	2,240	2,115	1,991
OHAI, REYNOLDS & DOROTHY	137	0.2418	137	130	123	116	109
OROPEZA, JOSE M	190	0.3354	190	180	171	161	152
OSTERKAMP, GEROLD	260	0.4589	260	247	234	221	208

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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
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, BOMMI V & KARUNA V	24	0.0424	24	22	21	20	19
ROWLAND, JAMES & HELEN	22	0.0388	22	20	19	18	17
RUISCH, DALE W	650	1.1473	650	617	585	552	520
SHIRKEY, ALAN G & MARY E	35	0.0618	35	33	31	29	28
SMITH, ROBERT A	43	0.0759	43	40	38	36	34
SOPPELAND, WAYNE	783	1.3820	783	743	704	665	626
SOUTHERN CALIFORNIA WATER COMPANY	11,309	19.9605	11,309	10,743	10,178	9,612	9,047
SPINK, WALTHALL	44	0.0777	44	41	39	37	35
ST CHARLES, DONALD B	609	1.0749	609	578	548	517	487
SUN 'N SKY COUNTRY CLUB	337	0.5948	337	320	303	286	269
TALLAKSON, WILLIAM V	17	0.0300	17	16	15	14	13
TILLEMA, HAROLD	874	1.5426	874	830	786	742	699
VAN DAM, ELDERT & SUSAN	722	1.2743	722	685	649	613	577
VAN LEEUWEN, JOHN	1,922	3.3923	1,922	1,825	1,729	1,633	1,537
VAN VLIET, HENDRIKA	820	1.4473	820	779	738	697	656
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 HO	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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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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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 PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND YEAR [3]	THIRD YEAR [3]	FOURTH YEAR [3]	FIFTH YEAR [3]
AKE, CHARLES J & MARJORIE M	23	0.0333	23	21	20	19	18
ANGERER, ROBERT J & PEGGY	24	0.0347	24	22	21	20	19
ANTELOPE VALLEY DAIRY	5,430	7.8597	5,430	5,158	4,887	4,615	4,344
ARGUELLES, ALFREDO	1,047	1.5155	1,047	994	942	889	837
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	80	0.1158	80	76	72	68	64
BAGLEY, ROY	20	0.0289	20	19	18	17	16
BALDERRAMA, ALFRED & LINDA	250	0.3619	250	237	225	212	200
BALL, DAVID P	81	0.1172	81	76	72	68	64
BARAK, RICHARD	132	0.1911	132	125	118	112	105
BARBER, JAMES B	167	0.2417	167	158	150	141	133
BARSTOW CALICO K O A	24	0.0347	24	22	21	20	19
BAUR, KARL & RITA	26	0.0376	26	24	23	22	20
BEDINGFIELD, 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
BOWMAN, EDWIN L	31	0.0449	31	29	27	26	24
BROWN, RONALD A	1,080	1.5632	1,080	1,026	972	918	864
BROWY, ORVILLE & LOUISE	33	0.0478	33	31	29	28	26
BRUINS, NICHOLAS	29	0.0420	29	27	26	24	23
CALICO LAKES HOMEOWNERS ASSOCIATION	1,031	1.4923	1,031	979	927	876	824
CALIF DEPT OF TRANSPORTATION	71	0.1028	71	67	63	60	56
CAMPBELL, M A & DIANNE	22	0.0318	22	20	19	18	17
CARTER, JOHN THOMAS	746	1.0798	746	708	671	634	596
CDFG - CAMP CADY	14	0.0203	14	13	12	11	11

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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 PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
CHANG, TIMOTHY & JANE	18	0.0261	18	17	16	15	14
CHASTAIN, W C	100	0.1447	100	95	90	85	80
CHEYENNE LAKE, INC	122	0.1766	122	115	109	103	97
CHIAO MEI DEVELOPMENT	451	0.6528	451	428	405	383	360
CHO BROTHERS RANCH	758	1.0972	758	720	682	644	606
CHUANG, MARSHAL	70	0.1013	70	66	63	59	56
CONNER, WILLIAM H	25	0.0362	25	23	22	21	20
COOL WATER RANCH	76	0.1100	76	72	68	64	60
CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	447	0.6470	447	424	402	379	357
DAGGETT COMMUNITY SERVICES DISTRICT	235	0.3402	235	223	211	199	188
DALJO CORPORATION	31	0.0449	31	29	27	26	24
DAVIS, RONALD & DONNA	53	0.0767	53	50	47	45	42
DE JONG, ALAN L	1,648	2.3854	1,648	1,565	1,483	1,400	1,318
DENNISON, QUENTIN D	29	0.0420	29	27	26	24	23
DESERT LAKES CORPORATION - (LAKE DOLORES)	483	0.6991	483	458	434	410	386
DOCIMO, DONALD P & PATRICIA J	23	0.0333	23	21	20	19	18
DONALDSON, JERRY & BEVERLY	90	0.1303	90	85	81	76	72
ELLISON, SUSAN	15	0.0217	15	14	13	12	12
EVKHANIAN, JAMES H	110	0.1592	110	104	99	93	88
FAWCETT, EDWARD C	20	0.0289	20	19	18	17	16
FELIX, ALAN E & CAROL L	36	0.0521	36	34	32	30	28
FERRO, DENNIS & NORMA	32	0.0463	32	30	28	27	25
FRIEND, JOSEPH & DEBORAH	60	0.0868	60	57	54	51	48
FUNDAMENTAL CHRISTIAN ENDEAVOR	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 PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] 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, WHILLDYN & 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
HARESON, NICHOLAS & MARY	30	0.0434	30	28	27	25	24
HARTER FARMS	1,083	1.5676	1,083	1,028	974	920	866
HARTER, JOE & SUE	738	1.0682	738	701	664	627	590
HARTLEY, LONNIE	19	0.0275	19	18	17	16	15
HARVEY, FRANK	38	0.0550	38	36	34	32	30
HENDLEY, RICK & BARBARA	48	0.0695	48	45	43	40	38
HIETT, PATRICIA J	16	0.0232	16	15	14	13	12
HILARIDES, FRANK	1,210	1.7514	1,210	1,149	1,089	1,028	968
HOLLISTER, ROBERT H & RUTH M	44	0.0637	44	41	39	37	35
HONG, PAUL B & MAY	95	0.1375	95	90	85	80	76
HORTON'S CHILDREN'S TRUST	106	0.1534	106	100	95	90	84
HORTON, JOHN MD	183	0.2649	183	173	164	155	146
HOSKING, JOHN W & JEAN	94	0.1361	94	89	84	79	75
HUBBARD, ESTER & MIZUNO, ARLEAN	28	0.0405	28	26	25	23	22
HUNT, RALPH M & LILLIAN F	31	0.0449	31	29	27	26	24
HUTCHISON, WILLIAM O	901	1.3042	901	855	810	765	720
HYATT, JAMES & BRENDA	210	0.3040	210	199	189	178	168

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EXHIBIT B

TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] 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
KIM, JOON HO	764	1.1059	764	725	687	649	611
KOSHAREK, JOHN & JOANNE	54	0.0782	54	51	48	45	43
LAKE JODIE PROPERTY OWNERS ASSOCIATION	254	0.3677	254	241	228	215	203
LAKE WAIKIKI	98	0.1419	98	93	88	83	78
LAKE WAINANI OWNERS ASSOCIATION	202	0.2924	202	191	181	171	161
LANGLEY, MICHAEL R	20	0.0289	20	19	18	17	16
LAWRENCE, WILLIAM W	45	0.0651	45	42	40	38	36
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 PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
MAHJOUBI, AFSAR S	63	0.0912	63	59	56	53	50
MALIN, LILY	54	0.0782	54	51	48	45	43
MALONEY, JANICE	36	0.0521	36	34	32	30	28
MARCROFT, JAMES A & JOAN	38	0.0550	38	36	34	32	30
MARSHALL, CHARLES	20	0.0289	20	19	18	17	16
MAYBERRY, DONALD J	41	0.0593	41	38	36	34	32
MILBRAT, IRVING	73	0.1057	73	69	65	62	58
MITCHELL, CHARLOTTE	115	0.1665	115	109	103	97	92
MITCHELL, JAMES L & CHERYL A	155	0.2244	155	147	139	131	124
MOORE, WAYNE G & JULIA H	103	0.1491	103	97	92	87	82
MORRIS, KARL	304	0.4400	304	288	273	258	243
MULLIGAN, ROBERT & INEZ	35	0.0507	35	33	31	29	28
NEWBERRY COMMUNITY SERVICE DIST	23	0.0333	23	21	20	19	18
NU VIEW DEVELOPMENT, INC	2,899	4.1962	2,899	2,754	2,609	2,464	2,319
O P D L INC	109	0.1578	109	103	98	92	87
O'KEEFE, SARAH-LEE & JOKE E	50	0.0724	50	47	45	42	40
P & H ENGINEERING & DEV CORP	667	0.9654	667	633	600	566	533
PARKER, GEORGE R	144	0.2084	144	136	129	122	115
PATHFINDER INVESTORS	472	0.6832	472	448	424	401	377
PAYAN, PAUL	32	0.0463	32	30	28	27	25
PERKO, BERT K	132	0.1911	132	125	118	112	105
PITTS, JOE	30	0.0434	30	28	27	25	24
POHL, ANDREAS & CATHLYN	17	0.0246	17	16	15	14	13
POLAND, JOHN R & SANDRA M	92	0.1332	92	87	82	78	73

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EXHIBIT B

TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA / PRODUCER	BASE ANNUAL [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
PRICE, ALAN E	37	0.0536	37	35	33	31	29
PRICE, DONALD	42	0.0608	42	39	37	35	33
PUCKHABER, WILLIAM F TRUST	63	0.0912	63	59	56	53	50
PURCIO, THOMAS F & PATRICIA A	80	0.1158	80	76	72	68	64
RANDOLPH, JOAN E	24	0.0347	24	22	21	20	19
REEVES, RICHARD	230	0.3329	230	218	207	195	184
RICE, DANIEL & MARY	121	0.1751	121	114	108	102	96
RICE, HENRY C & DIANA	24	0.0347	24	22	21	20	19
RIEGER, WALTER M	62	0.0897	62	58	55	52	49
RIKUO CORPORATION	1,517	2.1958	1,517	1,441	1,365	1,289	1,213
ROSSI, JAMES L & NAOMI I	614	0.8887	614	583	552	521	491
ROTEX CONSTRUCTION COMPANY	2,529	3.6606	2,529	2,402	2,276	2,149	2,023
SAN BERNARDINO COUNTY BARSTOW - DAGGETT AIRPORT	168	0.2432	168	159	151	142	134
SANTUCCI, ANTONIO & WILSA	30	0.0434	30	28	27	25	24
SCOGGINS, JERRY	105	0.1520	105	99	94	89	84
SHEPPARD, THOMAS & GLORIA	217	0.3141	217	206	195	184	173
SHORT, CHARLES & MARGARET	54	0.0782	54	51	48	45	43
SHORT, JEFF	30	0.0434	30	28	27	25	24
SILVER VALLEY RANCH, INC	109	0.1578	109	103	98	92	87
SMITH, WILLIAM E	19	0.0275	19	18	17	16	15
SNYDER, KRYL K & ROUTH, RICHARD J	64	0.0926	64	60	57	54	51
SOUTHERN CALIFORNIA EDISON CO - AGRICULTURE	5,858	8.4792	5,858	5,565	5,272	4,979	4,686
SOUTHERN CALIFORNIA EDISON CO - INDUSTRIAL	4,565	6.6076	4,565	4,336	4,108	3,880	3,652
SOUTHERN CALIFORNIA GAS COMPANY	98	0.1419	98	93	88	83	78

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EXHIBIT B

TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL [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
ST ANTONY COPTIC ORTHODOX MONASTERY	130	0.1882	130	123	117	110	104
STEWART, STANLEY & PATRICIA	27	0.0391	27	25	24	22	21
SUGA, 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 NEWBERRY RANCH CALIFORNIA, LTD	1,033	1.4952	1,033	981	929	878	826
TRIPLE H PARTNERSHIP	993	1.4373	993	943	893	844	794
UNION PACIFIC RAILROAD COMPANY	249	0.3604	249	236	224	211	199
VAN BASTELAAR, ALPHONSE	78	0.1129	78	74	70	66	62
VAN DIEST, CORNELIUS	934	1.3519	934	887	840	793	747
VAN LEEUWEN, JOHN	1,084	1.5690	1,084	1,029	975	921	867
VANDER DUSSEN, AGNES	1,792	2.5938	1,792	1,702	1,612	1,523	1,433
VAUGHT, ROBERT E & KAREN M	43	0.0622	43	40	38	36	34
VERNOLA, PAT	1,310	1.8962	1,310	1,244	1,179	1,113	1,048
WARD, ERNEST & LAURA	38	0.0550	38	36	34	32	30
WARD, RONNY H	130	0.1882	130	123	117	110	104
WEBER, F R & JUNELL	96	0.1390	96	91	86	81	76
WEBSTER, THOMAS M & PATRICIA J	24	0.0347	24	22	21	20	19
WEIDKNECHT, ARTHUR J & PEGGY A	79	0.1143	79	75	71	67	63
WESTERN HORIZON ASSOCIATES INC	1,188	1.7196	1,188	1,128	1,069	1,009	950
WESTERN ROCK PRODUCTS	31	0.0449	31	29	27	26	24

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EXHIBIT B

TABLE B-1

TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA / PRODUCER	BASE ANNUAL PRODUCTION [1] (ACRE-FEET)	BASE ANNUAL PRODUCTION RIGHT [2] (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET) FIRST YEAR	SECOND [3] YEAR	THIRD [3] YEAR	FOURTH [3] YEAR	FIFTH [3] YEAR
WET SET, INC	129	0.1867	129	122	116	109	103
WITTE, E DANIEL	27	0.0391	27	25	24	22	21
WLSR INC	133	0.1925	133	126	119	113	106
WORSEY, REVAE	29	0.0420	29	27	26	24	23
YARD, BETTY	26	0.0376	26	24	23	22	20
YERMO WATER COMPANY	453	0.6557	453	430	407	385	362
YOUNG, KEITH O - (DESERT TURF)	312	0.4516	312	296	280	265	249
MINIMAL PRODUCER POOL	3,500	5.0661	3,500	3,325	3,150	2,975	2,800
UNIDENTIFIED/UNVERIFIED PRODUCER POOL	320	0.4632					
BAJA SUBAREA TOTALS =	69,087	100					

1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.

2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.

3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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

PRODUCER	TOTAL WATER [1] PRODUCTION	BASE ANNUAL [2] PRODUCTION	RECIRCULATED [3] WATER
	(ACRE-FEET)		
CDFG - MOJAVE RIVER FISH HATCHERY	10,678	20	10,658
JESS RANCH WATER COMPANY	18,625	7,480	11,145
ALTO SUBAREA TOTALS =	29,303	7,500	21,803

Total Water Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records; James C. Hanson site inspection; land use estimates from 1989 aerial photography; responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.

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
SMITH, WILLIAM E	153	19	134
SUNDOWN LAKES, INC	1,109	168	941
TAPIE, RAYMOND & MURIEL	108	18	90
THAYER, SHARON	159	58	101
WET SET, INC	441	129	312
WLSR INC	678	133	545

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

PRODUCER	TOTAL WATER [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.

EXHIBIT C

ENGINEERING APPENDIX

CONTENTS

EXHIBIT C

ENGINEERING APPENDIX

The purpose of this Engineering Appendix is to establish the basis for measurements, calculations and determinations required in the operation of the Physical Solution.

A. Adjustment of Free Production Allowances. In the preparation of the report required by Paragraph 24 (o) of this Judgment, the Watermaster shall take into account all available pertinent hydrologic data and estimates, including at least the factors, or changes in the factors, shown in the attached 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," and changes in storage as determined by well levels, the factors listed in Paragraph 2(a) of Exhibit "H", and other pertinent data. The numbers for each of the factors for each Subarea shown in Table C-1 are Sample Numbers only, and are not intended to be used in determining actual water supply, Consumptive Use and outflow, or Free Production Allowance of the Subareas.

B. Determination of Surface Flow Components. The procedures used to determine the historical surface flow components of the Mojave River at various locations are summarized below.

1. Determination of Surface Flow Components at Lower Narrows. Since the records available for the discharge of the Mojave River at Lower Narrows only provide data on the total amount of surface flow and since Storm Flow occurs during and following periods of rainfall, it was necessary to determine what portion of

total measured surface flow at Lower Narrows was Storm Flow and what portion was Base Flow.

The Parties in reaching the physical solution provided for in the Judgment, used certain procedures to separate the Storm Flow and Base Flow components of the total measured surface flow at Lower Narrows. Hydrographs of the mean daily discharge at Lower Narrows were plotted for the Year under consideration together with corresponding rainfall data obtained from the National Oceanic and Atmospheric Administration (NOAA) for Lake Arrowhead. Hydrographs were also plotted for the combined flow of West Fork Mojave River and Deep Creek which together with the Lake Arrowhead precipitation data served as a guide for interpreting those periods during which Storm Flow was likely to have occurred at Lower Narrows.

Other factors considered included:

* Occurrences of Storm Flow at Barstow and Afton Canyon,
* Precipitation at Victorville and Barstow,
* Consideration of the time of Year and temperature, &
* Shape of hydrographs for Years having similar Base Flow characteristics.

Based on interpretation of all of the foregoing information, the flows occurring on those days during which Storm Flow most likely occurred were "scalped" by projecting an estimated Base Flow Curve through the Storm Flow Period. The Base Flow component of the total monthly flow was then determined as follows:

a. For those periods during which there was obviously no Storm Flow, the entire recorded mean daily flows were assumed to be 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:

Storm Flow At Barstow Gage[1] (Acre-Feet)	Estimated Surface Flow at Waterman Fault (Acre-Feet)
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

[1]From 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.

3. Determination of Surface Flow Components at Afton. Records available for the discharge of the Mojave River at Afton, California, provide data on the total mount of surface flow and since storm runoff occurs during and immediately following a major storm event in the watershed area tributary to the Baja Basin below Barstow or in the event of large Storm Flows at Barstow which reach Afton, it was necessary to determine what portion of the total measured surface flow at Afton is Storm Flow and what portion of Base Flow.

The Parties, in reaching the physical solution provided for in the Judgment, used certain procedures to separate the Storm Flow and Base Flow components of the total measured surface flow at Afton. Hydrographs of the mean daily discharge at Afton were plotted for the water Year under consideration. In the absence of Storm Flow, the Base Flow curve at Afton was generally a relatively constant amount. Storm Flows were evidenced by sharp spikes or abrupt departures from the antecedent Base Flow and a fairly rapid return to pre-storm Base Flow Condition. The hydrograph of flows at Barstow served as a guide for identifying those periods during which Storm Flow was likely to have occurred at Afton.

Based on interpretation of all of the foregoing information, the flows occurring on those days during which Storm Flow most likely occurred were "scalped" by projecting an estimated Base Flow Curve through the Storm Flow Period. The Base Flow component of the total monthly flow was then determined as follows:

a. For those periods during which there is obviously no Storm Flow, the entire recorded mean daily flows were assumed to be 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 was less than the amount indicated by the Base Flow Scalping Curves, then the actual recorded amount was used.

4. Engineers' Work Papers. These procedures are reflected in the Work Papers of the Engineers, copies of which are filed with the Watermaster.

TABLE C-1
Mojave Basin Area Adjudication
Subarea Hydrological Inventory Based On
Long-Term Average Natural Water Supply and Outflow
and Current Year Imports and Consumptive Use
(All Amounts in Acre-Feet)

	Este	Oeste	Alto	Centro	Baja	Basin Totals
WATER SUPPLY						
Surface Water Inflow						
Gaged	0	0	65,000	0	0	65,000 [3]
Ungaged	1,700	1,500	3,000	37,300 [1]	14,300 [2]	6,500 [3]
Subsurface Inflow	0	0	1,000	2,000	1,200	0 [4]
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 [5]	8,200
Ungaged	0	0	37,300 [1]	14,000 [5]	0	0
Subsurface Outflow	200	800	2,000	1,200	0	0
Consumptive Use						
Agriculture	6,800	2,900	16,100	20,700	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) [7]	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.

EXHIBIT D

TIME SCHEDULES

EXHIBIT D

TIME SCHEDULES

1. Prior Year Report. Annually not later than February 1 Watermaster shall provide to each Party a report covering the prior Year and setting forth at least the following:

a. Each Producer's Replacement Water Assessment, including any surcharges, based on rates applicable during the prior Year.

b. Each Producer's Makeup Water Assessment, based on rates applicable during the prior water Year.

2. MWA Supplemental Water Rates. Annually, not later than December 1, MWA shall set the rates per acre foot to be charged for Supplemental Water for the following Year, and shall project the rates for the following two Years.

3. Budget and Assessment Rates. Annually, not later than February 1, Watermaster shall provide to all Parties its proposal for its Administrative Budget, Administrative Assessment Rates, Replacement Water Rates, and Makeup Water Rates for the next ensuing Year and its rate projections for the next two (2) years. No later than March 1 of each Year, the Watermaster shall hold a public hearing to receive comments from Parties as to its proposal. Not later than April 1 of each Year, Watermaster shall adopt its final Budget and assessment rates for the next ensuing Year, and shall notify all Parties of its final Budget and Assessments rates within fifteen (15) days of adoption.

4. Free Production Allowance Adjustment. In any Year that Watermaster prepares a report pursuant to Paragraph 24 (o) of this Judgment that includes a recommendation for an adjustment of a Free

Production Allowance, Watermaster shall notify all Parties as to its recommendation not later than February 1, shall hold a public hearing thereon not later than March 1, and shall submit any such recommendation, which may be revised pursuant to the public hearing, to the Court not later than April 1.

5. Payment of Administrative Assessments and Biological Resource Assessments. Each Producer shall submit quarterly along with the Production report required by Paragraph 24 (p) an Administrative Assessment payment in an amount equal to the current Year Administrative Assessment Rate multiplied times the acre-feet of water Produced during the quarter and a Biological Resource Assessment payment in an amount equal to the current Year Biological Resource Assessment Rate multiplied times the acre-feet of water Produced during the quarter.

6. Payment of Replacement Water Assessments and Makeup Water Assessments. Replacement Water Assessments and Makeup Water Assessments for the prior Year shall be due and payable on July 1.

7. Delinquency of Assessments. Any assessment payable pursuant to this Judgment shall be deemed delinquent: i) if paid in Person, if not paid within five (5) days of the date due; ii) if paid by electronic funds transfer, if not paid within three (3) banking days of the date due; or iii) if paid by any other means, if not paid within ten (10) days of the date due. "Payment" shall occur when good and sufficient funds have been received by the Watermaster. Any assessment shall also be deemed delinquent in the event that any attempted payment is by funds that are not good and sufficient.

EXHIBIT E

LIST OF PRODUCERS AND THEIR DESIGNEES

EXHIBIT E

PRODUCER	DESIGNEE
ABBOND, EDWARD & GRACE	Same
ABBOTT, LEONARD C	Therese E. Parker, Esq.
ABSHIRE, DAVID V	Same
ADELANTO, CITY OF	Michael B. Jackson, Esq.
ADELANTO, CITY OF/GEORGE AFB	
AEROCHEM, INC	James Heiser, Esq.
AGCON, INC	Robert E. Hove
AGCON, INC.	Robert E. Hove
AGUAYO, JEANETTE L.	Same
AKE, CHARLES J & MARJORIE M	Same
ANDERSON, ROSS C & BETTY J	Same
ANGERER, ROBERT J & PEGGY	Same
ANTELOPE VALLEY DAIRY	Dick Van Dam
APPLE VALLEY COUNTRY CLUB	Terry Caldwell, Esq.
APPLE VALLEY DEVELOPMENT	Same
APPLE VALLEY FOOTHILL CO WATER	Doreen Ryssel
APPLE VALLEY HEIGHTS CO. WATER	Elizabeth Hanna, Esq.
APPLE VALLEY RANCHOS WATER	Fredric Fudacz, Esq.
APPLE VALLEY REC. & PARKS	Elizabeth Hanna, Esq.
APPLE VALLEY VIEW MUTUAL WATER CO.	Joseph Saltmeris, Esq.
APPLE VALLEY, TOWN OF	Sandra Dunn, Esq.
ARC LAS FLORES	William De Wolfe, Esq.
ARGUELLES, ALFREDO	Therese Parker, Esq.
ATCHISON, TOPEKA, SANTA FE	Curtis Ballantyne, Esq.
ATCHISON, TOPEKA, SANTA FE	Curtis Ballantyne, Esq.
AVDEEF, THOMAS & LUCILLE	Same
AZTEC FARM DEVELOPMENT CO	Al Jackson
BACA, ENRIQUE	Same
BAGLEY, ROY	Same
BALDERRAMA, ALFRED & LINDA	Same
BALDY MESA WATER DISTRICT	William Smillie

PRODUCER	DESIGNEE
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BAR H MUTUAL WATER COMPANY	Paul Nelson, President
BARAK, RICHARD	Therese Parker, Esq.
BARBER, JAMES B	Same
BARNES, FAY	Kirtland Mahlum, Esq.
BARSTOW CALICO K O A	Robert L. Moore
BASS, NEWTON T	Barbara Davisson, Business Manager
BASTIANON, REMO	Same
BASURA, STEVE	Same
BAUR, KARL & RITA	Same
BEDINGFIELD, LYNDELL&CHARLENE	Same
BEINSCHROTH, A J	Same
BELL, CHUCK	Therese Parker, Esq.
BENTON, PHILIP G	Same
BORGOGNO, STEVEN & LILLIAN	Same
BOWMAN, EDWIN L	Same
BOYCE, KENNETH & WILLA	Same
BROMMER, MARVIN	Same
BROWN, BOBBY G & VALERIA R	Same
BROWN, DOUG & SUE	Same
BROWN, RONALD A	Same
BROWY, ORVILLE & LOUISE	Same
BRUINS, NICHOLAS	Same
BURNS, BOBBY J & EVELYN J	Therese Parker, Esq.
BURNS, RITA J & PAMELA E	Same
BURNS, ANNIE L	Same
CALICO LAKES HOMEOWNERS	Billy Wyckoff
CALIF DEPT OF TRANSPORTATION	Alexander De Vorkin, Esq.
CAMPBELL, M A & DIANNE	Same
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CARTER, JOHN THOMAS	Therese Parker, Esq.
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CDFG - MOJAVE NARROWS REG.	Marilyn Levin, Esq.
CDFG - MOJAVE RIVER FISH	Marilyn Levin, Esq.
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CHAFA, LARRY R	Same
CHAMISAL MUTUAL	Earl D. McCool
CHANG, TIMOTHY & JANE	Same
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CHEYENNE LAKE, INC	Michael Hayes
CHIAO MEI DEVELOPMENT	Maple Sia
CHO BROTHERS RANCH	Chung Cho Gong
CHOI, YONG IL & JOUNG AE	Same
CHRISTISON, JOEL	Same
CHUANG, MARSHAL	Therese Parker, Esq.
CLARK, KENNETH R	Same
CLEAR VIEW FARMS	Terry Caldwell, Esq.
CLUB VIEW PARTNERS	Manoucher Sarbaz
CONNER, WILLIAM H	Same
COOK, KWON W	Same
COOL WATER RANCH	Paul Henderson, Esq.
COPELAND, ETAL	Don W. Little
CRAMER, MARGARET MUIR	Terry Caldwell, Esq.
CROSS, LAWRENCE E & SHARON I	Same
CRYSTAL HILLS WATER COMPANY	Same
CRYSTAL LAKES PROPERTY OWNERS	Russell Khouri
CUNNINGHAM, WILLIAM	Same
DAGGETT COMMUNITY SERVICES	Lawrence Alf, CSD Chairman
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DAVIS, RONALD & DONNA	Same
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DEVRIES, NEIL	Robert Dougherty, Esq.
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DEXTER, J P	Same
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DOMBROWSKI, MICHAEL W & SUSAN M	Same
DONALDSON, JERRY & BEVERLY	Same
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DOWSE, PHILIP	Same
DURAN, FRANK T	Therese Parker, Esq.
ELLISON, SUSAN	Same
EVENSON, EDWIN H & JOYCELAINE	Same
EVKHANIAN, JAMES H & PHYLLIA	Same
FAWCETT, EDWARD C	Same
FELIX, ALAN E & CAROL L	Same
FERRO, DENNIS & NORMA	Same
FISHER, DR DOLORES	Same
FISHER, JEROME	Same
FITZWATER, R E	Robert Dougherty, Esq.
FRIEND, JOSEPH & DEBORAH	Same
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GAINES, JACK & MARY	Same
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GAYJIKIAN, SAMUEL & HAZEL	Same
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HANDLEY, DON R & MARY ANN	Same
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HARALIK, BESS & ROBERT	Same
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LEE, MOON & OKBEA	Same
LEE, SEPOONG ETAL & WOO POONG	Same
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MITCHELL, JAMES L & CHERYL A	Same
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MURPHY, KENNETH	Same
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NAVAJO MUTUAL WATER CO	James Hanson
NELSON, MILDRED L	Same
NEWBERRY COMMUNITY SERVICE DIST	Vicki Morris
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NUNN, DONALD & PEARL	Paul Henderson, Esq.
NU VIEW DEVELOPMENT, INC	Richard Slivkin, Esq.
O'BRYANT, ROBERT C & BARBARA	Same
O F D L INC	Virginia Cahill, Esq.
OHAI, REYNOLDS & DOROTHY	Same
O'KEEFE, SARAH-LEE & JOKE E	Same
ORMSBY, HARRY G	Same
OROPEZA, JOSE M	Same
OSTERKAMP, GEROLD	Robert Dougherty, Esq.
OWL ROCK PRODUCTS COMPANY	Vince Dommarito, Area Manager
P & H ENGINEERING & DEV CORP	Same
PALISADES RANCH	Robert Dougherty, Esq.
PARK, CHANHO	Same
PARK, HEA JA & JEONG IL	Same
PARKER, DAVID E	Same
PARKER, GEORGE R	Therese Parker, Esq.
PATHFINDER INVESTORS	Same
PAYAN, PAUL	Same
PEARL, ALICE	Same
BORUFF, PAUL & LINDA; PEARSON, DERYL B	Same
PEREZ, EVA	Therese Parker, Esq.
PERKO, BERT K	Same
PERRY, THOMAS A	Same

PRODUCER	DESIGNEE
PETTIGREW, DAN	Therese Parker, Esq.
PETTIGREW, HOWARD L	Therese Parker, Esq.
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PHENIX PROPERTIES LTD	Elizabeth Taylor, Manager
PITTMAN, LEROY W	Same
PITTS, JOE & STELLA	Same
PLUESS-STAUFER CALIFORNIA INC	David Aladjem, Esq.
POHL, ANDREAS & CATHLYN	Same
POLAND, JOHN R & SANDRA M	Same
POLICH, LEE & DONNA	Same
PRICE, ALAN E	Same
PRICE, DONALD & RUTH	Same
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PURCIO, THOMAS F & PATRICIA A	Same
RANCHERITOS MUTUAL WATER CO	Same
RANDOLPH, JOAN E	Therese Parker, Esq.
REDDY, BOMMI V & KARUNA V	Same
REED, MIKE	Same
REEVES, RICHARD	Same
RESSEQUE, JOHN & BILL	Same
RICE, DANIEL & MARY	Same
RICE, HENRY C & DIANA	Same
RIEGER, WALTER M	Same
RIKUO CORPORATION	Joseph Deering, Jr., Esq.
RIVERSIDE CEMENT CO - ORO GRANDE PLANT	Warren P. Felger, Esq.
ROGERS, ROY	Terry Caldwell, Esq.
ROGERS, ROY (ORO GRANDE RANCH)	Terry Caldwell, Esq.
ROSSI, JAMES L & NAOMI I	Same
ROTEX CONSTRUCTION COMPANY	Yong Cho
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RUE RANCH	Joe Zack Feltz, President

PRODUCER	DESIGNEE
RUISCH, DALE W	Same
SAN BERNARDINO CSA #29	William Smillie
SAN BERNARDINO CSA #42	William Smillie
SAN BERNARDINO CSA #64	William Smillie
SAN BERNARDINO CSA #70C	William Smillie
SAN BERNARDINO CSA #70G	William Smillie
SAN BERNARDINO CSA #70J	William Smillie
SAN BERNARDINO CSA #70L	William Smillie
SAN BERNARDINO CO. BARSTOW-DAGGETT AIRPORT	William Smillie
SAN FILIPPO, JOSEPH & SHELLEY	Same
SANTUCCI, ANTONIO & WILSA	Same
SAN BERNARDINO CSA #70L	William Smillie
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SEALS, LAWRENCE	Same
SHEPPARD, THOMAS & GLORIA	Same
SHIRKEY, ALAN G & MARY E	Same
SHORT, CHARLES & MARGARET	Therese Parker, Esq.
SHORT, JEFF	Same
SILVER LAKES ASSOCIATION	Michael Davis, Esq.
SILVER VALLEY RANCH, INC	Richard A. Ruben, Esq.
SMITH, ROBERT A	Therese Parker, Esq.
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SNYDER, KRYL K & ROUTH, RICHARD J	Terry Caldwell, Esq.
SON'S RANCH	Therese Parker, Esq.
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SOUTHERN CALIFORNIA EDISON CO - AGRICULTURE	Douglas Ditonto, Esq.
SOUTHERN CALIFORNIA EDISON CO - INDUSTRIAL	Douglas Ditonto, Esq.
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SOUTHERN CALIFORNIA WATER CO	Arthur Kidman, Esq.
SOUTHDOWN, INC.	Steve Abbott, Esq.
SOUTHERN CALIFORNIA WATER CO	Arthur Kidman, Esq.
SOUTHERN CALIFORNIA WATER CO	Arthur Kidman, Esq.
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PRODUCER	DESIGNEE
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ST ANTHONY COPTIC ORTHODOX MONASTERY	Mike Stiller, Esq/Karas (Bishop)
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TAPIE, RAYMOND & MURIEL	Same
TATUM, JAMES B	Same
TATRO, RICHARD K. & SANDRA A.	Same
TAYLOR, ALLEN C / HAYMAKER RANCH	Same
TAYLOR, TOM	Therese Parker, Esq.
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THE 160 NEWBERRY RANCH CALIFORNIA, LTD	Therese Parker, Esq.
THE CUSHENBURY TRUST, C/O SPECIALTY MINERALS	Michael Davis, Esq.
THOMAS FARMS	Therese Parker, Esq.
THOMAS, WALTER	Same
THOMPSON, JAMES A	Therese Parker, Esq.
THOMPSON, RODGER	Same
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THRASHER, GARY	Same
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TURNER, ROBERT	Same
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VAIL, JOSEPH B & PAULA E	Same
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VAN DAM BROTHERS	Same
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VAN LEEUWEN, JOHN	Robert Dougherty, Esq.
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VANDER DUSSEN, ED	Steve Tyler, Esq.
VANHOY, LUTHER C & ROBERTA L	Same
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VAUGHT, ROBERT E. & KAREN M.	Same
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VICTOR VALLEY WATER DISTRICT	Thomas McGuire, Esq.
VICTORVILLE, CITY OF	Thomas McGuire, Esq.
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VISSER, ANNIE	Same
VOGLER, ALBERT H	Therese Parker, Esq.
WACKEEN, CAESAR	Jack W. Evarone, Esq.
WAKULA, JOHN & HELEN	Same
WARD, KEN & BARBARA	Same
WARD, RONNY H	Same
WEBER, DAVE	Same
WEBER, F R & JUNELL	Same
WEBSTER, THOMAS M & PATRICIA J	Same

PRODUCER	DESIGNEE
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WEISER, SIDNEY & RAQUEL	Same
WEST, CAROLYN & SMITH, RICHARD	Same
WEST, HOWARD & SUZY	Same
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WESTERN ROCK PRODUCTS	Kathleen Daprato
WET SET, INC	Thomas Ferruzzo, Esq.
WHITTINGHAM, RICHARD V	Same
WILLOW WELLS MUTUAL WATER COMPANY	Richard A. Joh
WITTE, E DANIEL & MARCIA	Same
WLSR INC	Steve Winfield
WOO, CHEN C/O ASTER DUCK CO	Same
WORSEY, JOSEPH A & REVAE	Same
YANG, YOUNG MO	Same
YARD, WILLIAM & BETTY	Same
YEAGER, E L - CONSTRUCTION COMPANY INC	Roger Luebs, Esq.
YERMO WATER COMPANY	Donald Walker
YKEMA HARMSEN DAIRY	Therese Parker. Esq.
YKEMA TRUST	Therese Parker, Esq.
YOUNG, KEITH O - (DESERT TURF)	Therese Parker, Esq.

EXHIBIT F

TRANSFERS OF BASE ANNUAL PRODUCTION RIGHTS.

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.

3. Notice to Watermaster. No transfer shall become operable until the Parties to the transfer have jointly notified Watermaster of the terms and conditions of the transfer, the price to be paid by the transferee, the name of the Responsible Party and the name of the Person who will pay any applicable Assessments. Intra-Subarea transfers shall not require Watermaster authorization after giving notice. No inter-Subarea transfer shall become operable until authorized by Watermaster after giving notice. Watermaster shall authorize such transfers in the order of the date of notice, provided that funds are available as set forth in Paragraph 4 of this Exhibit "F".

4. Inter Subarea Transfers of Rights. A Party's Right in a (Source) Subarea may be transferred (by lease only) to a Party in another (Use) Subarea provided that in any Year the resulting unconsumed water in the Source Subarea due to all such transfers shall not be greater than the Replacement Water requirement of the Source Subarea in the preceding Year. Watermaster shall replace the resulting Consumptive Use in the Use Subarea that is attributable to the transfer, utilizing Replacement Water Assessments from the Source Subarea.

5. Transfers to Meet Replacement Water or Makeup Water Obligations. Watermaster may use Assessment proceeds to purchase or lease Rights in a Subarea in order to obtain water to meet an Obligation. The water so obtained shall be equal to the Consumptive Use portion of the transferred and unproduced Rights. No such purchases of leases of Rights in the Harper Lake Basin may be used to satisfy Obligations in other parts of the Centro Subarea.

6. Inter Subarea Transfers of Water. Water Produced in one (source) Subarea and exported to another Subarea for use or disposal shall bear a Replacement Water Obligation equal to the sum of the Production in excess of the Producer's share of the Free Production Allowance in the source Subarea plus the amount of water exported that would normally have been returned to the source Subarea. Such exported water shall be credited to the appropriate Subarea Obligation unless it has been purchased or leased as Replacement Water pursuant to a transfer agreement.

7. Verde Ranch Producers. Together the Spring Valley Lake Country Club ("the Country Club"), the Spring Valley Lake Association ("the Association"), the California Department of Fish and Game (DFG) Mojave Narrows Regional Park ("the Park") the Kemper Campbell Ranch ("the Ranch") comprise a group herein called the Verde Ranch Producers. Each Verde Ranch Producer has the ability physically both to Produce Groundwater and to Produce water that originated as tailwater flowing from the DFG Mojave River Fish Hatchery. DFG Producer Groundwater to supply the Hatchery, and Hatchery tailwater can be discharged in part or entirely to the Mojave River or in part or entirely to a lined channel that conveys tailwater to points where the Verde Ranch Producers can Produce it. The present flow regimen is as follows: Hatchery Production flows through the Hatchery and is then discharged to the River and/or the lined channel. Water discharged to the lined channel flows to a Country Club lake. The Country Club Produces Groundwater that is discharged to the Country Club lake. The Country Club property is irrigated by pumping from the Country Club lake. Water overflowing from the Country Club lake flows through a lined channel and

through other Country Club lakes, and finally is discharged to Spring Valley Lake. The Association Produces Groundwater that is discharged to Spring Valley Lake. Water overflowing from Spring Valley Lake flows to lakes in the Park. The Park Produces Groundwater that is discharged to the lakes in the Park. The Park also Produces Groundwater that is used directly for irrigation of the Park. The Park is also irrigated by pumping from the lakes in the Park. Water overflowing from the lakes in the Park is discharged to the Mojave River. Some water from the lakes in the Park also flows to a lake on the Ranch. The Ranch also Produces Groundwater. The Ranch is irrigated from the lake on the Ranch. No water flows on the surface from the Ranch property to the Mojave River.

In order to continue the present arrangements among the Hatchery and the Verde Ranch Producers while assuring that they participate fairly in the Physical Solution the following rules shall apply:

a. Total Production by the Country Club will be calculated as the sum of Country Club Groundwater Production plus inflow of Hatchery tailwater minus outflow to Spring Valley Lake. The Country Club shall monitor and report to Watermaster the amounts of such Groundwater Production, inflow and outflow.

b. Total Production by the Association will be calculated as the sum of Association Groundwater Production plus inflow from the Country Club minus outflow to the Park. The Association shall monitor and report to Watermaster the amounts of such Groundwater Production, inflow and outflow.

c. Total Production by the Park will be calculated as the sum of Park Groundwater Production plus inflow from the Association minus outflow to the Ranch minus outflow to the Mojave River. The Park shall monitor and report to Watermaster as to such Groundwater Production, inflow and outflows.

d. Total Production by the Ranch will be calculated as the sum of Ranch Groundwater Production plus inflow from the Park. The Ranch shall monitor and report to Watermaster the amounts of such Groundwater Production and inflow.

e. Hatchery Production up to 10,678 acre-feet per Year will be permitted free of any Assessments against the Hatchery. The Hatchery shall monitor and report to Watermaster its Groundwater Production and the amounts of tailwater discharged to the River and to the artificial channel. In any Year the Hatchery may Produce more than 10,678 acre-feet free of any Assessments against the Hatchery, provided such Production in excess of 10,678 acre-feet is reported as Groundwater Production by one or more of the Verde Ranch Producers in the same Year pursuant to operating agreements by and between the Hatchery and such Producer(s) filed with the Watermaster. The operating agreement shall specify the responsibility for payment of assessments. In the operating agreement, the Verde Ranch Producers may elect to have assessments be based on the aggregate Production of the Verde Ranch Producers, and may freely transfer Base Annual Production Rights internally, provided that the aggregate consumptive use of the Verde Ranch Producers shall not be increased. In the absence of such operating agreements, or if the operating agreements do not otherwise allocate responsibility for payment of Assessments, the Hatchery

shall be liable for Administrative, Replacement Water and Biological Resource Assessments on the amount of water Produced by the Hatchery in excess of 10,678 acre-feet in any Year. In the event that Verde Ranch Producer who is allocated responsibility for payment of Assessments pursuant to an operating agreement is delinquent in making any such payment, the Hatchery shall not be liable therefor.

f. In any Year, if the total discharge to the River from the Hatchery and the Verde Ranch Producers exceeds the Groundwater Production by the Hatchery, such excess discharge shall be subject to Administrative, Replacement Water and, except for the Park, Biological Resource Assessments. Such Assessments shall be levied against individual Verde Ranch Producers in proportion to the extent that outflow from each Producer exceeds inflow to that Producer.

g. The Hatchery and the Verde Ranch Producers shall install all stage recorders, meters or other measuring devices necessary to determine inflows, outflows and Production that they are responsible for monitoring and reporting to Watermaster. Such stage recorders, meters or other measuring devices shall be installed, calibrated and operated in manner satisfactory to Watermaster.

h. Any change in the flow regimen described above will be subject to the same general rules set forth in this Paragraph 7. Any such change shall be reported to Watermaster in advance.

8. Harper Lake Basin. No Producer in the Harper Lake Basin may transfer any Base Annual Production Right or any portion thereof to Producers outside of Harper Lake Basin except by

physically conveying the water in compliance with the rules set forth in this Exhibit "F".

EXHIBIT G

SUBAREA OBLIGATIONS

EXHIBIT G

SUBAREA OBLIGATIONS

1. Subarea Obligations. Producers in the respective Subareas shall have the obligation to provide the following average Annual and minimum Annual Subsurface Flows and/or Base Flows per Year:

a. Este Subarea Producers--200 acre-feet per Year of Subsurface Flow to the Alto Subarea, except that in any Year the Subsurface Flow obligation shall be not be less than 160 acre-feet plus one-third of any cumulative debit plus any additional amount of water required to reduce the cumulative debit to 200 acre-feet.

b. Oeste Subarea Producers--800 acre-feet per Year of Subsurface Flow to the Alto Subarea, except that in any Year the Subsurface Flow obligation shall be not less than 640 acre-feet plus one-third of any cumulative debit plus any additional amount of water required to reduce the cumulative debit to 800 acre-feet.

c. Centro Subarea Producers--1200 acre-feet per Year of Subsurface Flow to the Baja Subarea, except that in any Year the Subsurface Flow Obligation shall be not less than 960 acre-feet plus one-third of any cumulative debit plus any additional amount of water required to reduce the cumulative debit to 1200 acre-feet.

d. Baja Subarea Producers--400 acre-feet per Year of Subsurface Flow toward Afton across the MWA eastern boundary, except that in any Year the Subsurface Flow Obligation shall not be less than 320 acre-feet plus one-third of any cumulative debit plus any additional amount of water required to reduce the cumulative debit to 400 acre-feet.

e. Alto Subarea Producers--an average Annual combined Subsurface Flow and Base Flow of 23,000 acre-feet per Year to the Transition Zone. For the purposes of Paragraph 6 of this Exhibit G, the Subsurface Flow component shall be deemed to be 2,000 acre-feet per Year. In any Year Alto Subarea Producers shall have an obligation to provide to the Transition Zone a minimum combined Subsurface Flow and Base Flow as follows:

i. If the accounting pursuant to Paragraph 5, below, reflects a net cumulative credit at the beginning of the Year, the combined minimum flow obligation shall be 18,400 acre-feet minus any net cumulative credit, but shall be not less than 15,000 acre-feet.

ii. If the accounting pursuant to Paragraph 5, below, does not reflect a net cumulative credit at the beginning of the Year, the combined minimum flow obligation shall be 18,400 acre-feet plus one-third of any net cumulative debit plus any additional amount of water required to reduce the net cumulative debit to 23,000 acre-feet.

2. Obligation for Transition Zone Replacement Water.

a. Until the Court approves Groundwater levels to be established and maintained pursuant to Subparagraph 2b of this Exhibit, Watermaster shall provide Replacement Water in the Transition Zone equal to Production in the Transition Zone that is in excess of the Transition Zone Producers' share of the Alto Subarea Free Production Allowance for that Year. All such Replacement Water shall be provided as soon as practicable during the next ensuing Year.

b. As soon as is practicable, the MWA shall establish key wells to be used to monitor Groundwater levels in the Transition Zone and, subject to approval by the Court, Watermaster shall establish minimum water levels to be maintained in the key wells.

c. After water level elevations have been established pursuant to Subparagraph 2b of this Exhibit, Watermaster shall provide Replacement Water in the Transition Zone as necessary to maintain the minimum water levels. Water purchased with Replacement Water Assessments paid by Producers in the Transition Zone in excess of the quantity of water needed to maintain said water levels shall be provided elsewhere in the Alto Subarea.

3. Other Water. "Other Water" that may be credited to a Subarea Obligation may include water conveyed and discharged across a boundary or Free Production Allowance water that is not Produced. Water other than Base Flow, Subsurface Flow or Storm Flow that is conveyed and discharged across a boundary between Subareas other than pursuant to a transfer agreement, shall be credited or debited, as appropriate, to the pertinent Subarea Obligation during the Year in which it is so conveyed and discharged. Any portion of the Subarea's Free Production Allowance that is allowed to remain unproduced in a Subarea pursuant to transfer agreements in order to satisfy a Subarea Obligation shall be credited to the pertinent Subarea Obligation in accordance with the terms of the transfer agreements.

4. Makeup Water. Assessments for Makeup Water shall be paid in accordance with the time schedule set forth in Exhibit D.

Makeup Water shall be credited to the Subarea Obligation at the end of the Year in which the Makeup Water Assessment is paid.

5. Accounting. Watermaster shall Annually not later than February 1 cause to be prepared a report of the status of each Subarea Obligation as of the end of the prior Year. The report shall set forth at least the following information for each Subarea Obligation:

a. The cumulative total of the average Annual Subarea Obligations since the Judgment was entered as of the beginning of the prior Year;

b. The cumulative total of all water credited to the Subarea Obligation since the Judgment was entered as of the beginning of the prior Year;

c. The net cumulative credit or debit [the difference between (a) and (b)] as of the beginning of the prior Year;

d. The amounts of water credited to the Subarea Obligation during the prior Year including, as appropriate, Base Flow, Subsurface Flow, Other Water and Makeup Water;

e. The cumulative total of the average Annual Subarea Obligations as of the end of the prior Year;

f. The cumulative total of all water credited to the Subarea Obligation as of the end of the prior Year;

g. The net cumulative credit or debit as of the end of the prior Year;

h. Any Makeup Water Obligation;

i. The Minimum Subarea Obligation for the current Year.

6. Subsurface Flow Assumptions. Some Subarea Obligations are expressed as average Annual or minimum Annual Subsurface Flow.

In all cases the Subsurface Flow obligations have been established initially at amounts equal to the estimated historical average Subsurface Flow across Subarea boundaries. Not later than two Years following entry of this Judgment MWA shall begin to install monitoring wells to be used to obtain data to enable improved estimates of Subsurface Flow at each Subarea boundary where there is a Subsurface Flow obligation and to develop methodology for future determinations of actual Subsurface Flow. Not later than ten years following entry of this Judgment Watermaster shall prepare a report setting forth the results of the monitoring program and the future methodology. Following opportunity for review of Watermaster's report by all Parties, Watermaster shall prepare a recommendation to the Court as to the likely accuracy of the estimated historical Subsurface Flows and any revision of Subarea Obligations that may be indicated. Pending Watermaster's report to the Court, Subsurface Flows shall be assumed to be equal to the Subsurface Flow obligations for purposed of accounting for compliance therewith.

7. Example Calculation. Table G-1 sets forth an example of Subarea Obligation accounting procedures using hypothetical flows.

TABLE C-1

HYPOTHETICAL EXAMPLE

ACCOUNTING FOR COMPLIANCE WITH SUBAREA OBLIGATIONS

OBLIGATION OF SUBAREA A TO SUBAREA B

AVERAGE ANNUAL: 23,000 AFA (21,000 AFA BASEFLOW + 2,000 AFA SUBSURFACE FLOW)

MINIMUM ANNUAL: 18,400 AFA + 1/3 OF ANY NET CUMULATIVE DEBIT; OR 18,400 AFA - ANY NET CUMULATIVE CREDIT, BUT NOT LESS THAN 15,000 AFA

	YEAR 1 AF	YEAR 2 AF	YEAR 3 AF	YEAR 4 AF	YEAR 5 AF	YEAR 6 AF	YEAR 7 AF	YEAR 8 AF	YEAR 9 AF	YEAR 10 AF
STATUS AT BEGINNING OF YEAR										
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)	(18,200)	(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	7800	8,000	8,200	8,400	8,600	8800
MAKEUP WATER PURCHASED	0	1,400	4,800	4,667	6,200	8,044	7,667	0	0	0
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	18,400	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										
18,400 + 1/3 OF NET CUM. DEBIT	20,400	22,867	24,467	26,044	27,711	28,696	25,407	23,607	21,074	0
ADDITIONAL TO REDUCE DEBIT TO 23,000	0	0	0	0	0	0	0	0	0	0
18,400 - CUM. CREDIT, BUT NLT 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

EXHIBIT H

BIOLOGICAL RESOURCE MITIGATION

EXHIBIT H

BIOLOGICAL RESOURCE MITIGATION

1. Protection of and Description of Existing Riparian Habitat. In arriving at a Physical Solution, the Parties have taken into consideration the water needs of the public trust resources of the Mojave Basin Area, including but not limited to, those species listed in Table H-1 within each of the areas as shown on Figure H-1 and the riparian habitat areas shown on Figure H-1 and described generally as follows:

a. The area which extends, south to north, in the Alto Subarea, from the intersection of the north line of Section 36, Township 5 North, Range 4 West with the Mojave River channel to the United States Geological Survey gauging station at the Lower Narrows;

b. The Lower Narrows to the Helendale Fault (Transition Zone);

c. The Harvard/Eastern Baja Subarea reach of the Mojave River that extends west to east, from Harvard Road to the Iron Ranch/Iron Mountain area (0.5 miles east of the west line of Section 20, Township 10 North, Range 4 East).

2. Protection Pursuant to Physical Solution. The following aspects of the Physical Solution must be implemented to seek to achieve the water table standards set forth in Table H-2 which were proposed by DFG as being necessary to maintain and converse the riparian resources in the areas shown on Figure H-1, including the species listed in Table H-1:

a. Pursuant to Paragraph 24(o) of the Judgment, the Watermaster in recommending an adjustment in Free Production

Allowance, shall compare the Free Production Allowance with the estimated Production Safe Yield. In the event the Free Production Allowance exceeds the estimated Production Safe Yield by five percent or more, Watermaster shall recommend a reduction of the Free Production Allowance equal to a full five percent of the aggregate Subarea Base Annual Production. In considering whether to increase or decrease the Free Production Allowance in a Subarea, Watermaster shall, among other factors, take into consideration for the areas shown on Figure H-1 the Consumptive Use of water by riparian habitat, the protection of public trust resources, including the species listed in Table H-1 and the riparian habitat areas shown on Figure H-1, and whether an increase would be detrimental to the protection of public trust resources.

b. If, pursuant to Paragraph 27, Watermaster buys or leases Free Production Allowance in the Baja Subarea below the Calico-Newberry Fault to satisfy the need for Replacement Water, priority shall be given to purchases or leases that will result in reducing Production in or near the area described in Subparagraph 1(c) of this Exhibit.

c. Pursuant to Paragraph 2 of Exhibit "G", Watermaster shall purchase Replacement Water to maintain Groundwater levels in the Transition Zone.

3. Additional Protection Pursuant to Trust Fund Established by Watermaster Using the Proceeds of Biological Resource Assessments.

a. Watermaster shall establish a Biological Resources Trust Fund account for the benefit of the riparian habitat areas shown on Figure H-1 and the species listed on Table H-1. To

establish and maintain the Trust Fund Watermaster shall levy against each acre-foot of Production within the Basin Area, other than Production by the California Department of Fish and Game (DFG), a Biological Resource Assessment of fifty cents ($0.50) (1993 dollars) to be collected at the same time and in the same manner as the Administrative Assessment, except that no Biological Resources Assessment shall be levied whenever the Trust Fund account balance exceeds $1,000,000 (1993 dollars).

b. Watermaster shall make funds held in the Biological Resources Trust Fund available to DFG only in the event that Groundwater levels are not maintained as set forth in Table H-2. Watermaster shall take action to acknowledge any proposed expenditure from the Biological Resources Trust Fund by DFG. Such Watermaster action shall be subject to the review procedures set forth in Paragraph 36 of the Judgment, provided that any motion made pursuant thereto and any Court disapproval of such Watermaster action and proposed DFG expenditure may be based only: 1) on the ground that the Groundwater levels set forth in Table H-2 are being maintained; and/or 2) the ground that the proposed expenditure is not for any of the purposes set forth in Subparagraphs 3.b.(i), (ii), or (iii) below in this Exhibit. The Biological Resources Trust Fund may be used only for the following purposes and only in the three areas identified on Figure H-1:

i. not to exceed $100,000 for the preparation by DFG of a DFG habitat water supply management plan, which plan shall include the water needs of the species listed in Table H-1 and the riparian habitat areas shown on Figure H-1.

ii. the purchase or lease by DFG of Supplemental Water or the lease or purchase of DFG of Base Annual Production Rights to be used to meet riparian habitat water needs of the species listed in Table H-1 and the riparian habitat areas shown on Figure H-1.

iii. the construction, repair and replacement of wells or other facilities identified in the plan prepared pursuant to Subparagraph (i), above, and/or any other measures necessary to implement the plan.

DFG shall not prepare or make any expenditure from the trust fund for the payment of administrative overhead or staff of DFG.

4. DFG agrees that absent substantial changed circumstances, DFG shall not seek to modify the provisions of this Judgment in any way to add to or change the above-stated measures to protect the referenced species or habitat. Nothing stated in this Judgment or in this Exhibit "H" is intended nor shall be deemed to relieve any Party hereto from any obligation or obligations not specifically referenced in this Exhibit H. Nothing in this Judgment or in this Exhibit H is intended or shall be construed to be a waiver by the State or any of its departments or agencies, including DFG, of its rights and obligations under the common law, the public trust doctrine, the constitution, statutes and regulations to preserve, protect or enhance the natural resources of the State including rare, threatened or endangered species or species of concern.

TABLE H-1

LIST OF SPECIES

	ALTO			CENTRO		BAJA		
SPECIES	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 Tui Chub							1, 3	
California Red-legged Frog	6	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 Earred 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.

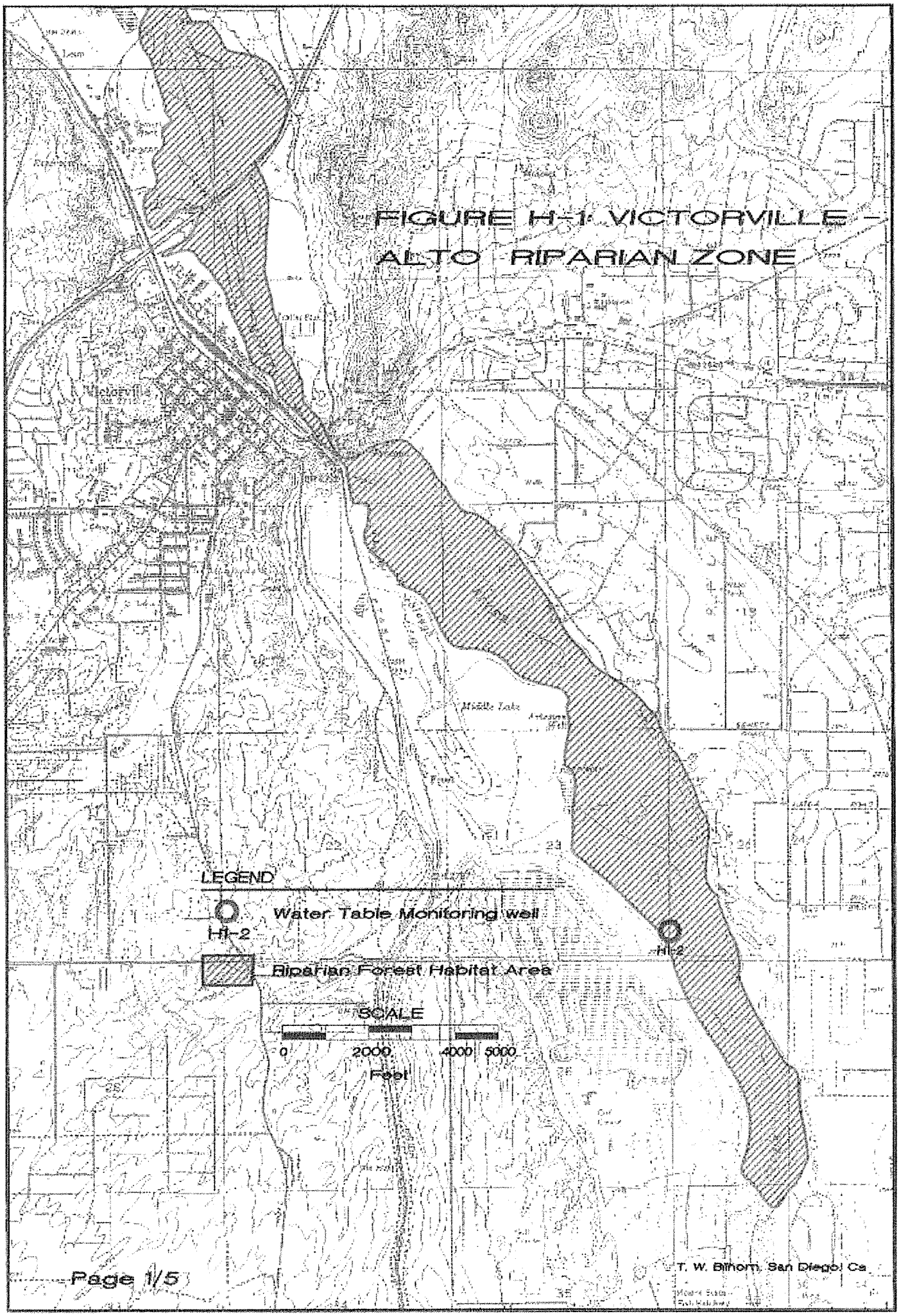
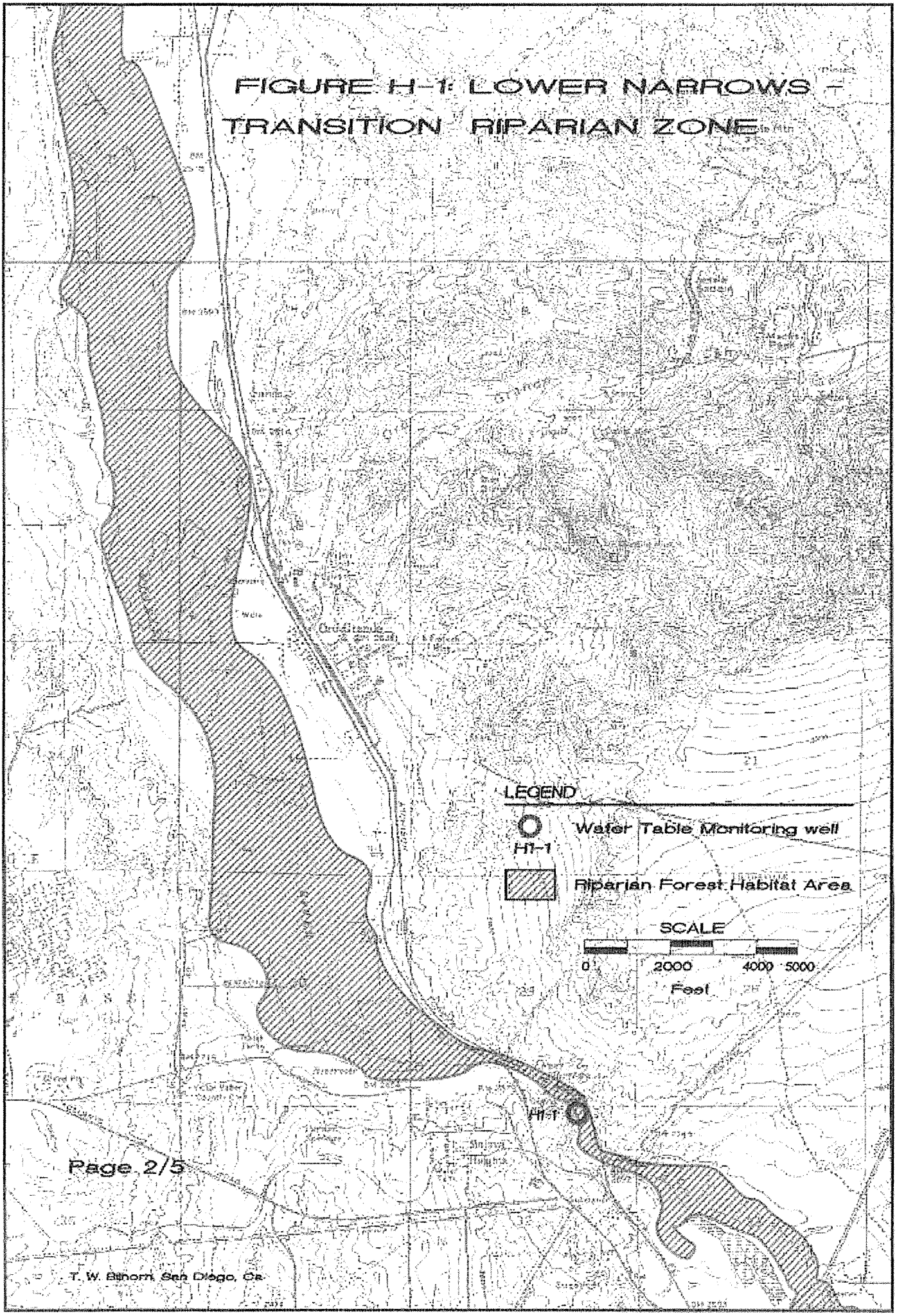


FIGURE H-1: VICTORVILLE – ALTO RIPARIAN ZONE
LEGEND
Water Table Monitoring well
H1-2
Riparian Forest Habitat Area
SCALE
0
2000
4000
5000
Feet
H1-2
T. W. Bilhorn, San Diego, Ca

FIGURE H-1: LOWER NARROWS – TRANSITION RIPARIAN ZONE



T. W. Bhorm, San Diego, Ca.

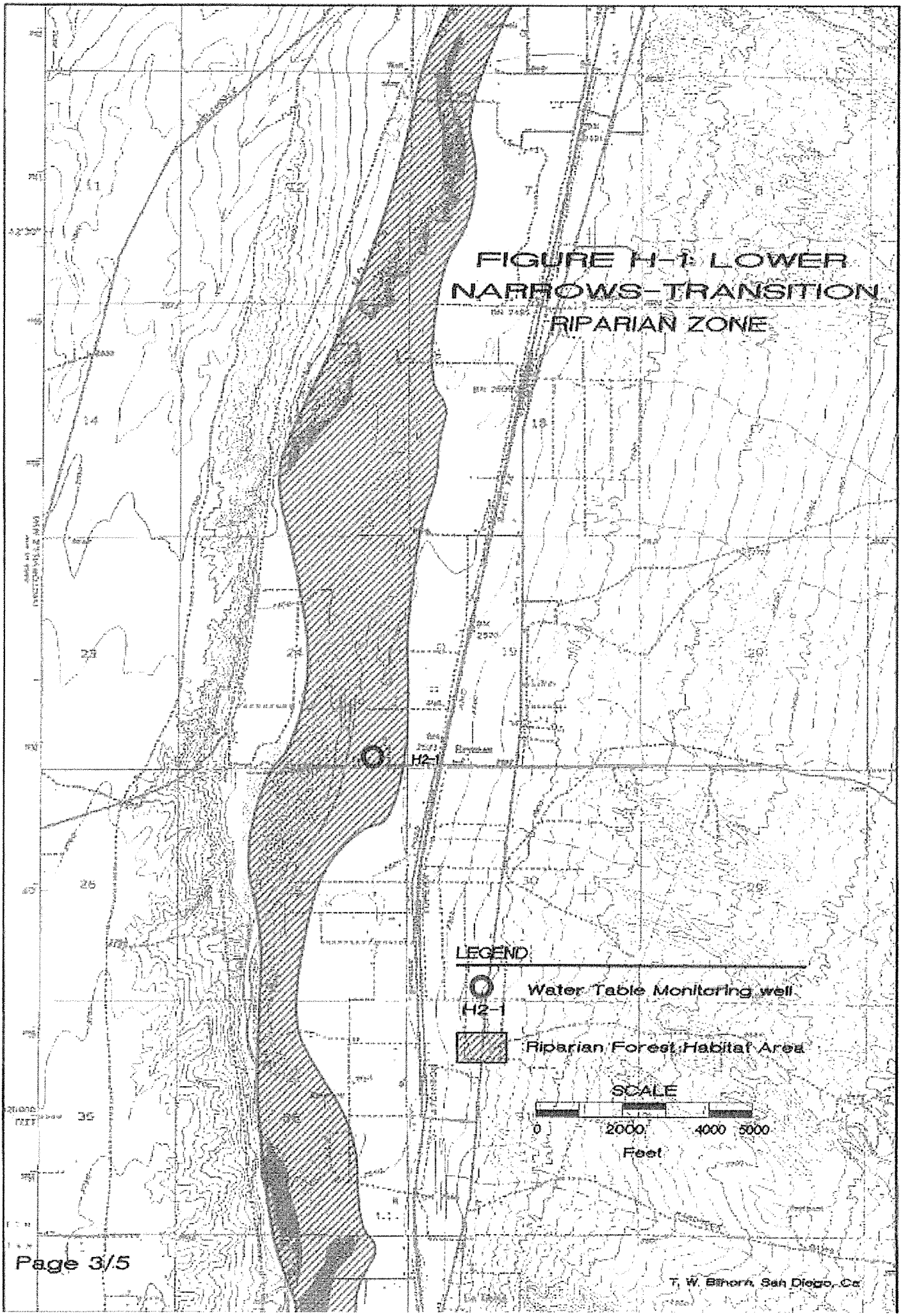


FIGURE H-1: LOWER NARROWS-TRANSITION RIPARIAN ZONE
H2-1
LEGEND
Water Table Monitoring well
H2-1
Riparian Forest Habitat Area
SCALE
0
2000
4000
5000
Feet
T. W. Elhorn, San Diego, Ca

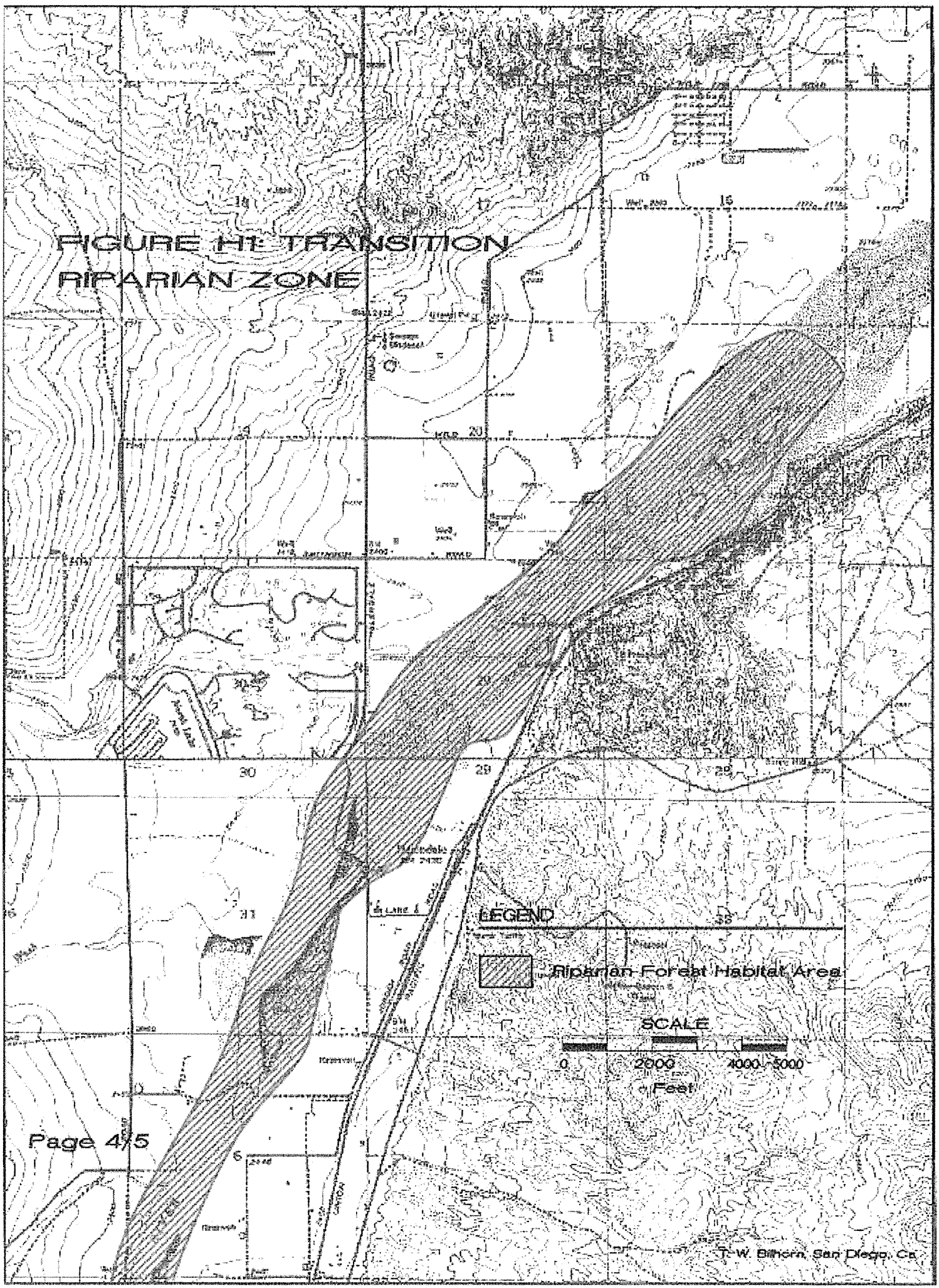


FIGURE H1: TRANSITION
RIPARIAN ZONE
LEGEND
Riparian Forest Habitat Area
SCALE
0
2000
4000
5000
Feet
T. W. Bilhorn, San Diego, Ca.

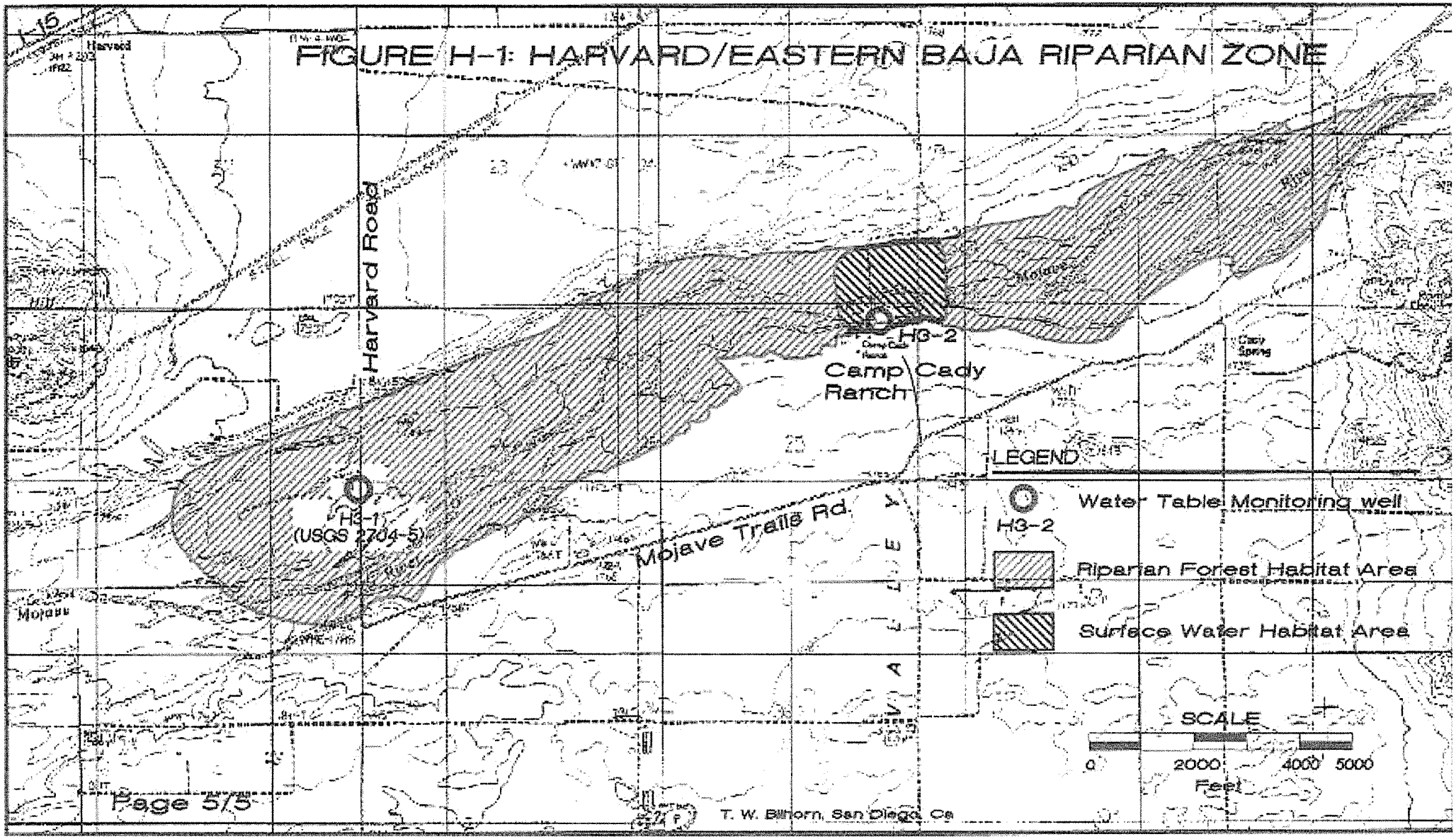
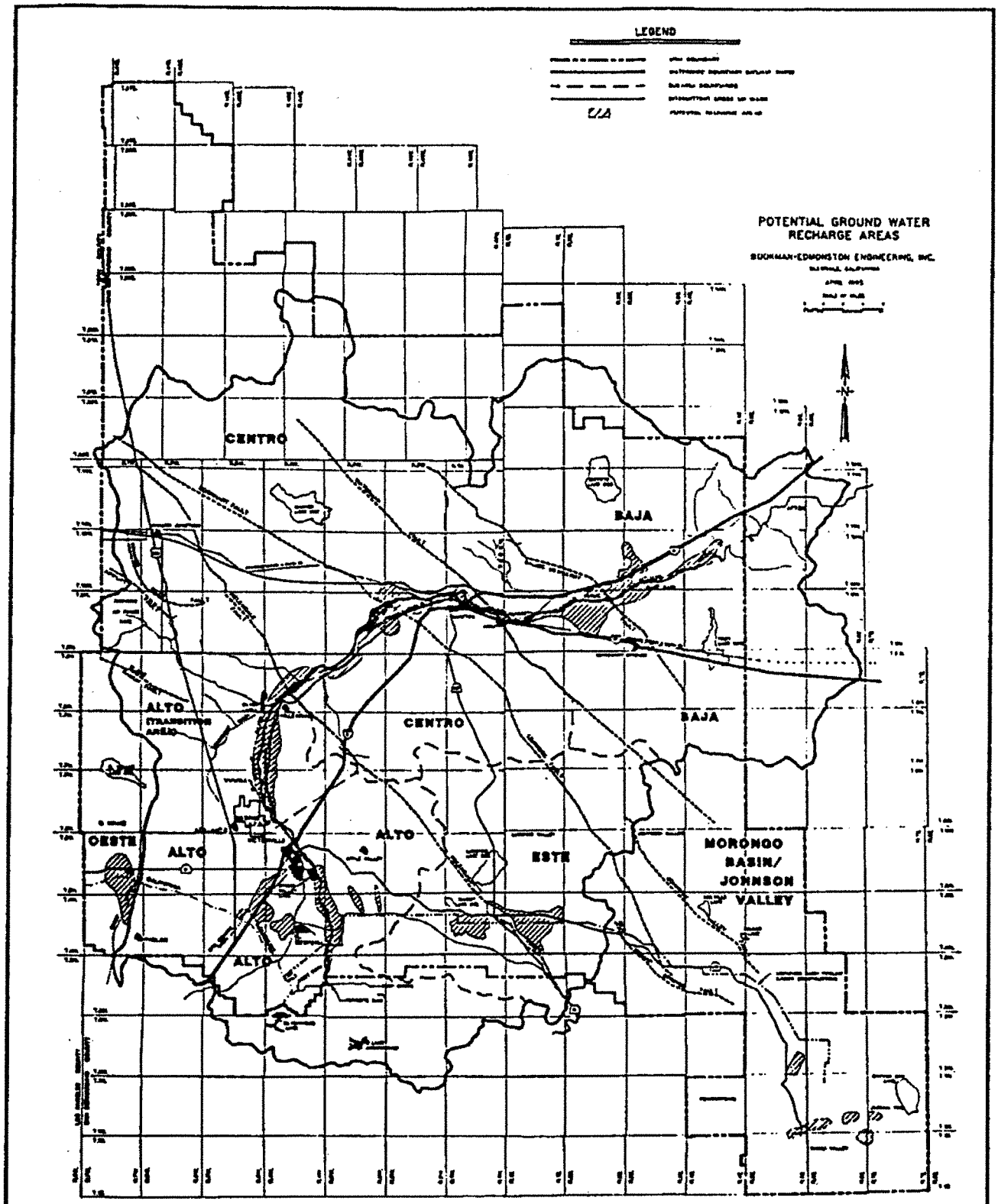


FIGURE H-1: HARVARD/EASTERN BAJA RIPARIAN ZONE
Harvard Road
H3-2
Camp Cady Ranch
H3-1
(USGS 2704-5)
Mojave Trails Rd.
LEGEND
Water Table Monitoring well
Riparian Forest Habitat Area
Surface Water Habitat Area
SCALE
0
2000
4000
5000
Feet
T. W. Bilhorn, San Diego, Ca
Page 5/5



MOJAVE WATER AGENCY

REGIONAL WATER MANAGEMENT PLAN

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

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,

which became effective on March 27, 2015, and which remains in place for up to 270 days (9 months), unless extended by the State Water Board; and

WHEREAS, on April 1, 2015, the Governor issued Executive Order B-29-15, which, in part, mandates a 25% statewide reduction in urban water use, and provides that the orders in the January 17, 2014, and April 25, 2014, proclamations and Executive Orders B-26-14 and B-28-14 remain in full force except as modified by Executive Order B-29-15. The Governor directed the State Water Board to impose restrictions to achieve the statewide 25% reduction; and

WHEREAS, on May 18, 2015, the State Water Board proposed regulations ("Regulations") became effective, mandating water use restrictions in order to comply with the Governor's 25% cutback mandate; and

WHEREAS, the Regulations impose certain requirements on water users throughout the state, such as prohibiting the use of water, for instance, to wash down driveways, and prohibiting irrigation that causes water runoff; and

WHEREAS, the Regulations also impose mandatory cutback requirements on "urban water suppliers," defined as suppliers providing water to over 3,000 customers or providing over 3,000 acre-feet per year to municipal customers. Two of the County Service Areas serve over 3,000 customers and, therefore, qualify as "urban water suppliers" subject to mandatory reductions of 28% and 32% from 2013 usage levels; and

WHEREAS, the Regulations also require public water distributors serving less than 3,000 customers to either cutback their water use by 25% from 2013 levels or limit outdoor irrigation to no more than twice per week; and

WHEREAS, California Water Code sections 375 *et seq.* empower any public entity which supplies water at retail or wholesale to adopt and enforce a water conservation program to reduce the quantity of water used by those within its service area after holding a public hearing and making appropriate findings of necessity for the adoption of a water conservation program; and

WHEREAS, Water Code section 375, subdivision (c) defines "public entity" to include a city, county, special district, water authority, or any other municipal public corporation or district; and

WHEREAS, the County desires to repeal Ordinance No. SD 90-11, which established water conservation measures, and to adopt a water conservation program that conforms to the mandatory restrictions set forth in the Regulations; and

WHEREAS, the adoption and enforcement of a comprehensive water conservation program will allow the County to delay or avoid declaring a water shortage emergency pursuant to Water Code section 350 *et seq*. as well as comply with the State Board Regulations; and

WHEREAS, the County has the authority to impose monetary fines and penalties and take other applicable actions pursuant to Water Code sections 375 through 377; and

WHEREAS, on June 23, 2015, the County held a public hearing and made appropriate findings of necessity for the adoption of a water conservation program; and

NOW THEREFORE, based upon the above, the Board of Supervisors of the County of San Bernardino, acting in its capacity as the governing body of the County Service Areas and Zones named in Section 4(b) of this ordinance, ordains as follows:

SECTION 1. Incorporation of Recitals. All of the foregoing recitals are true and correct and the Board of Supervisors so finds and determines. The recitals set forth above are incorporated herein and made an operative part of this ordinance.

SECTION 2. Public Hearing. The Board of Supervisors conducted a noticed public hearing on June 23, 2015, at 10:00 a.m., or as soon thereafter as practicable, at the Covington Chambers, 385 N. Arrowhead Avenue, San Bernardino, CA 92415, as part of the Regular Meeting of the Board of Supervisors.

SECTION 3. Repeal. Ordinance SD 90-11 is hereby repealed.

SECTION 4. Water Conservation Program

(a) Findings and Purpose.
(b) Application.
(c) Mandatory Restrictions.
(d) Conservation Stages.
(e) Determination and Declaration of Conservation Stages.
(f) Duration of Conservation Stages.
(g) Fines and Penalties.
(h) Citation Appeal Process.

(a) **Findings and Purpose**

(1) The Board of Supervisors finds and determines that because of the prevailing conditions in the state, and the declared policy of the state, it is necessary and appropriate for the Board of Supervisors to adopt, implement and enforce this water conservation program to reduce the quantity of water used within the County Service Areas and Zones identified in Section 4 (b) herein to ensure that there is sufficient water for human consumption, sanitation, and fire protection. The Board of Supervisors further finds and determines that during periods of drought, water shortages, and water shortage emergencies, the general welfare requires that the County maximize the beneficial use of its available water resources to the extent that it is capable, and that the unreasonable use, or unreasonable method of use of water shall be prevented and the conservation of water is to be extended with the view to the reasonable and beneficial use thereof in the interests of the people of the County and for the public health, safety, and welfare.

(2) This ordinance adopts a water conservation program which

establishes mandatory water use restrictions, regulations, and administrative fines and/or penalties to be implemented during declared Conservation Stages 1 through 4.

(3) Due to the fact that the County Service Areas and Zones are located in a semi-arid region, groundwater is of limited supply and in overdraft in some aquifers in the County. Current surface water supplies in the County Service Areas and Zones are limited. The purpose of the provisions of this ordinance and the water conservation program are to assure the highest beneficial use of County Service Area and Zone water supplies and to provide sufficient water supplies to meet the basic needs of human consumption, sanitation, and fire protection within the County Service Areas and Zones.

(b) **Application**

The provisions of this Ordinance shall apply to all water customers of the following County Service Areas and Zones (collectively referred to herein as "County Service Areas" or "CSAs"):

CSA 42 (Oro Grande)

CSA 53C (Fawnskin)

CSA 64 (Spring Valley Lake)

CSA 70 (Countywide)

Zone CG (Cedar Glen)

Zone F (Little Morongo)

Zone J (Oak Hills)

Zone W-3 (Hacienda Heights)

Zone W-4 (Pioneertown)

(c) **Mandatory Restrictions**

During Conservation Stages 2 through 4, all customers of the CSAs shall comply with the following mandates, except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency. To the extent that the mandatory restrictions set forth below conflict

with a Conservation Stage measure, the more restrictive requirement shall apply. All references herein to "days" shall mean calendar days unless otherwise specified.

(1) Watering, sprinkling, aerial watering or irrigating of any landscaped or vegetated areas, including lawns, trees, shrubs, grass, ground cover, plants, vine gardens, vegetables, flowers, or other landscaping shall only occur between the hours of 9:00 p.m. and 6:00 a.m. during the high use season (April 1 through October 31 of each year). In the low use season (November 1 through March 31), such watering shall only occur between the hours of 8:00 a.m. and 3:00 p.m. Commercial and Industrial use shall only occur between the hours of 9:00 p.m. and 6:00 a.m. year-round. These restrictions shall not apply to hand-held hose or drip irrigation systems.

(2) Use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nuzzle or device attached to it that causes it to cease dispensing water immediately when not in use, is prohibited.

(3) The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall is prohibited.

(4) There shall be no hose washing of sidewalks, walkways, driveways, parking areas, patios, porches, verandas, tennis courts, or other paved, concrete, or other hard surface areas.

(5) Potable water shall not be used in fountains or other decorative water features, except where the water is a part of a recirculating system.

(6) No person shall permit water to leak from any facility or plumbing fixture on his/her premises. Upon receiving notice of the existence of any such leak, the water Customer shall identify the source of the water, and within 48 hours, stop the source by turning off the valve that supplies the water, and within 7 days, evaluate the extent of, and repair or correct the problem. Broken sprinklers shall be repaired within 24 hours of notification.

(7) Use of water for any purpose, which results in flooding or run-off, 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) Conservation Stage 1 – "Drought Watch"

(A) The Director of Special Districts Department or designee (hereinafter Director) shall conduct public outreach and provide 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 percent (15%) from a comparative year selected by the Director.

(B) Customer Restrictions:

(I) Customers shall be encouraged to install and use water saving devices such as rain sensors, low-flow showerheads, faucet aerators and sprinkler and irrigation watering valves; low-flow or waterless toilets; high-efficiency, low water use washing machines and dishwashers; and automated irrigation timers and/or controllers as well as other available water retrofit kits.

(II) Outdoor irrigation is limited to 4-days per week.

(2) Conservation Stage 2 – "Drought Alert"

(A) The Director shall continue all public information actions specified for Conservation Stage 1 but shall request that customers reduce their usage by no more than forty percent (40%) from a comparative year designated by the Board of Supervisors or as otherwise mandated by the state.

(B) Customer Restrictions:

(I) Comply with all Conservation Stage 1 measures.

(II) Outdoor irrigation shall be limited to 3-days or 2-days per week, with specific days of the week to be designated by the Director.

(3) Conservation Stage 3 – "Drought Critical Condition"

(A) The Director shall continue all public sector actions specified for Conservation Stages 1 and 2 but shall request that customers reduce their usage by no more than fifty percent (50%) from a comparative year, as designated by the Board of Supervisors or as may otherwise be mandated by the state.

(B) Customer Restrictions:

(I) Except as otherwise set forth in this Conservation Stage, all Conservation Stage 1 and 2 measures shall remain in effect.

(II) If the Director finds that insufficient conservation is occurring, the Director may impose the following requirements:

(i) Outdoor irrigation shall be limited to 1-day per week, with specific days of the week to be designated by the Director.

(ii) 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.

(iii) 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.

(iv) Draining and refilling of private swimming pools is prohibited unless necessary for public health and safety and approved by the Director.

(4) Conservation Stage 4- "Drought Emergency"

(A) 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 percent (50%) from a comparative year, as designated by the Board of Supervisors or as may otherwise be mandated by the state.

(B) Customer Restrictions:

(I) Except as otherwise set forth in this Stage, all Stage 1, 2, and 3 measures remain in effect.

(II) All residential, commercial and industrial outdoor irrigation is prohibited except as determined on a case by case basis by the Director.

(III) Will-serve letters may no longer be issued, if the Board of Supervisors finds that there exists insufficient water supply to serve new connections.

(e) **Determination and Declaration of Conservation Stages**

The Director shall review and analyze all available water supply and conservation data and shall regularly report his/her findings to the Board of Supervisors during Conservation Stages 1 through 4.

The Director is authorized to declare and rescind Conservation Stage 1 but shall provide notice to the Board of Supervisors of such declaration or rescission and the factual circumstances under which such action was taken.

The Board of Supervisors shall declare the existence of a Conservation Stage 2 through 4 condition by resolution adopted at a regular or special public meeting held in accordance with state law.

The existence of a Conservation Stage 4 condition may be declared by the Board of Supervisors pursuant to California Water Code section 350 et seq., following a public hearing, noticed at least seven (7) days in advance, or as otherwise may be required by state law.

Within ten (10) days following the declaration of a conservation stage, the Clerk of the Board of Supervisors shall publish a copy of the resolution, or summary thereof, in accordance with applicable law, in a newspaper of general circulation of official notices. The conservation measures applicable to the conservation stage shall take effect on the day the resolution, or summary thereof, is published. The Board of Supervisors may declare an end to Conservation Stages 2 through 4 by the adoption of a resolution at any regular or special meeting held in accordance with state law.

(f) **Duration of Conservation Stages**

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

(g) **Fines and Penalties**

(1) *Violations.* Pursuant to Section 377 of the Water Code, each violation of this ordinance may be prosecuted as a misdemeanor, publishable by imprisonment in the County jail for no more than thirty (30) days or by fine not exceeding $1,000, or by 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:

(A) 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.

(B) 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 (30) days of the violation notice. Course must be approved by the Director.

(C) Third Violation (within one year of the first violation) - a fine of $200.00.

(D) Fourth Violation (within one year of the first violation) – a fine of $300.00 and fee for installation of flow restricting device by Special Districts Department during the duration of the drought declaration.

(E) 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.

(2) *Fines, Additional Charges.* 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 for the period during which the violation occurred; nonpayment shall be subject to the same remedies available for non-payment of 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.

(3) *Variances.*

(A) 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 as provided in this section.

(B) The variance may be granted or conditionally granted, only upon a written finding of the existence of facts demonstrating an undue hardship to the customer that is disproportionate to the impacts to County Service Area or Zone customers generally or due to specific and unique circumstances of the customer or the customer's property.

(C) Application. Application for a variance shall be a form prescribed by the Director.

(D) Supporting Documentation. The application shall be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant.

(E) Required Findings for Variance. An application for a variance shall be denied unless the Director finds, based on the information provided in the application, supporting documents, or such additional information as may be requested, and on water use information for the property as shown by the records of the County Service Area or Zone, all of the following:

(I) That the variance does not constitute a grant of special privilege inconsistent with the limitations upon other customers.

(II) That because of special circumstances applicable to the property or its use, the strict application of this ordinance would have a disproportionate impact on the property or use that exceeds the impacts to customers generally.

(III) That the authorizing of such 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.

(IV) 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.

(F) Approval Authority. 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. Unless specified otherwise at the time a variance is approved, the variance applies to the subject property during the term of the conservation stage. The decision of the Director on a variance application is final.

(h) **Citation Appeal Process**

(1) *Procedures.* 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 this ordinance).

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.

(2) *Interim Measures*. 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.

SECTION 5. Severability

If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be unconstitutional or invalid, such provision shall not affect the validity of the remaining portions of this ordinance. The Board of Supervisors hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause, or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases may be unconstitutional or invalid.

SECTION 6. California Environmental Quality Act

The Board of Supervisors finds that adopting and enforcing a water conservation program and mandatory restrictions on water use in order to comply with state emergency drought regulations is exempt from the California Environmental Quality Act ("CEQA") pursuant to State CEQA Guidelines Section 15268 and Public Records Code section 21080(b)(1) as a ministerial action. The regulations mandate that each urban water supplier implement all requirements and actions of the stage of its water

conservation plan that imposes mandatory restrictions on outdoor irrigation. Therefore, an action to implement a particular phase of a water conservation plan is not a discretionary action and, as such, it is statutorily exempt from CEQA.

SECTION 7. Effective Date and Publication

This ordinance is adopted pursuant to Section 375 of the Water Code. This ordinance shall take effect immediately pursuant to the provisions of Section 376(a) of the Water Code. Pursuant to Water Code section 376 and Government Code section 6061, the Clerk of the Board shall publish in a newspaper of general circulation this ordinance, or summary thereof, adopting a water conservation program within 10 days after its adoption.

JAMES RAMOS, Chairman
Board of Supervisors

SIGNED AND CERTIFIED THAT A COPY
OF THIS DOCUMENT HAS BEEN DELIVERED
TO THE CHAIRMAN OF THE BOARD

LAURA H. WELCH, Clerk of the
Board of Supervisors

STATE OF CALIFORNIA)
) ss.
COUNTY OF SAN BERNARDINO)

I, LAURA H. WELCH, Clerk of the Board of Supervisors of the County of San Bernardino, State of California, hereby certify that at a regular meeting of the Board of Supervisors of said County and State, held on the 23rd day of June, 2015, at which meeting were present Supervisors: Rutherford, Ramos, Hagman, Gonzales, and the Clerk, the foregoing ordinance was passed and adopted by the following vote, to wit:

AYES: SUPERVISORS: Rutherford, Ramos, Hagman, Gonzales

NOES: SUPERVISORS: None

ABSENT: SUPERVISORS: Lovingood

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Board of Supervisors this 23rd day of June, 2015.

COUNTY OF SAN BERNARDINO BOARD GOVERNED COUNTY SERVICE AREAS

LAURA H. WELCH, Clerk of the
Board of Supervisors of the
County of San Bernardino,
State of California

Deputy

Approved as to Form:

JEAN-RENE BASLE
County Counsel

By: _____
KENNETH C. HARDY
Deputy County Counsel

Date: 6/16/15

Appendix H – CSA 70J Consumer Confidence Report (2015)

County Service Area 70 J
2015 Consumer Confidence Report
General District Information

CSA 70 J
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, 2015 or the most recent results as indicated.

PUBLIC PARTICIPATION
The CSA 70 J Municipal Advisory Committee meets regularly throughout the year. The next meeting is scheduled for September 20, 2016, at 7:00 p.m. at the Oak Hills Community Center (Fire Station #40).

Questions about this report or concerning the water system?

Contact:
Steven Samaras
Acting Deputy Director

(760) 955-9885 or
(800) 554-0565

Office Hours:
Monday through Friday
(Except Wednesday)
8:00 a.m. - 5:00 p.m.
Wednesdays
8:30 a.m. - 5:00 p.m.
Closed on Holidays

MUY IMPORTANTE !
Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

County Service Area 70 J (CSA 70 J), a water district within the Special Districts Department (Department), Water and Sanitation Division, is a Board-governed district providing water service to approximately 11,577 customers in the community of Oak Hills.

The water system consists of five wells, ten water reservoirs and two de-sanding tanks with a combined capacity of 3,949,000 gallons. There are approximately 148 miles of water line and 3,219 metered water connections.

A diligent regimen of testing and analysis for bacteriological, chemical, and radiological contaminants, along with physical qualities of the water is conducted throughout the year to monitor water quality.

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 2015 and previous years. The Department'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 State Water Resources Control Board, Division of Drinking Water (DDW), 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 at 1-800-426-4791 or visit their website at http://www.epa.gov/safewater.

This document is not a substitute for regulations, nor is it a regulation itself. Thus, it does not impose legally-binding requirements on DDW or the Department, and may not apply to a particular situation based upon any member of the public.

Jeff Rigney
Director of Special Districts

"Water quality and water availability are vital for the health and growth of our County. As the Director for the County Special Districts Department, it is my responsibility to ensure that providing both of these to our water customers remains our top priority."

Steve Samaras
Acting Deputy Director

"The Division appreciates our customer's commitment to water conservation during this extended drought. Your cumulative savings to date is 24.45%. Keep up the good work!"

Water Sources

- Well 1: Ground Water; located in the Alto Subarea Water Basin
- Well 2: Ground Water; located in the Alto Subarea Water Basin
- Well 3: Ground Water; located in the Alto Subarea Water Basin
- Well 4: Ground Water; located in the Alto Subarea Water Basin
- Well 5: Ground Water; located in the Alto Subarea Water Basin

Source Water Assessment

Source water assessments were conducted for the CSA 70 J water system in 2015. A copy of the complete assessment may be viewed at the County of San Bernardino Special Districts Department, Water and Sanitation Division's office. Vulnerability to contamination based on the assessment findings are septic systems, both high and low density.

Funding to Pilot Test Hexavalent Chromium treatment processes was approved and made available July 1, 2015. These Pilot Tests will provide CSA 70 J with the necessary tools to select the best treatment technology in regards to operation and maintenance expenses and to provide the best water to its customers.

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides—they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources.
- Dispose of chemicals properly; take used motor oil to a recycling center.

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference—try one today and soon it will become second nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They are inexpensive, easy to install, and can save you up to 740 gallons a month.
- Fix leaking toilets and faucets.
- Teach your kids about water conservation to ensure a future generation that uses water wisely.

The Subsequent tables provide many terms and abbreviations that customers may not be familiar with. To understand these terms, the district has provided the following definitions:

Non-Detects (ND) **- laboratory analysis indicates that the constituent is not present or not tested.**

MG **– Million gallons**

Parts per million (ppm) **- one part per million corresponds to one minute in two years or a single penny in $10,000.**

Parts per billion (ppb) **- one part per billion corresponds to one minute in 2,000 years.**

Parts per trillion (ppt) **- one part per trillion corresponds to one minute in 2,000,000 years.**

Parts per quadrillion (ppq) **- one part per quadrillion corresponds to one minute in 2,000,000,000 years.**

Picocuries per liter (pCi/L) **- Picocuries per liter is a measure of the radioactivity in water.**

Nephelometric Turbidity Unit (NTU) **- nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.**

Millirems per year (mrem/yr) **- measure of radiation absorbed by the body.**

Million Fibers per Liter (MFL) **- million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.**

Maximum Residual Disinfectant Level (MRDL) **– The level of a disinfectant added for water treatment that may not be exceeded at the customer's tap.**

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.**

Maximum Contaminant Level Goal **(MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U. S. Environmental Protection Agency.**

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 byproducts 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**	**AL**	**PHG**	**Typical Source**
Lead (ppb)	2015	20	ND	0	15	0.2	Internal corrosion of household plumbing; erosion of natural deposits
Copper (ppm)	2015	20	ND	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)	2014	0.17	0 - 3.1	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	10.24	9 - 12	45	45	NO	Runoff and leaching from fertilizer use; erosion of natural deposits
Fluoride (ppm)	2014	0.44	0.32 - 0.58	2	1	NO	Erosion of natural deposits; water additive that promotes strong teeth
Arsenic (ppb)	2014	5.10	4.70 - 5.90	10	0.004	NO	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Chromium - Total Cr (ppb)	2015	18.17	10 - 22	50	(100)	NO	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Hexavalent Chromium (ppb)	2015	18.28	11 - 23	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	0.97	0 - 1.36	4	4	NO	Drinking water disinfectant added for treatment
Total Trihalomethanes - TTHM - (ppb)	2015	9.68	0 - 50.9	80	N/A	NO	Byproduct of drinking water chlorination
Total Haloacetic Acids - HAA5 - (ppb)	2015	0.22	0 - 2.1	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 - 1	3	N/A	NO	Naturally occurring organic materials
Turbidity (Units)	2014	0.02	0 - 0.20	5	N/A	NO	Soil runoff
Chloride (ppm)	2014	11.53	9.20 - 15	500	N/A	NO	Runoff/leaching from natural deposits; seawater influence
Specific Conductance (uS/cm)	2014	204	200 - 220	1,600	N/A	NO	Substances that form ions when in water; seawater influence
Total Filterable Residue/TDS (ppm)	2014	134	130 - 140	1,000	N/A	NO	Runoff/leaching from natural deposits
Sulfate (ppm)	2014	4.40	3.30 - 5.20	500	N/A	NO	Runoff/leaching from natural deposits
Apparent Color (Units)	2014	0	0	15	N/A	NO	Naturally occurring organic materials
Aluminum (Al) (ppb)	2014	13.80	0 - 69.0	200	N/A	NO	Erosion of natural deposits; residual from some surface water treatment processes

Additional Constituents

Chemical or Constituent	Sample Date	Average Level	Range of Detections	MCL [MRDL]	PHG (MCLG)	Typical Source of Contaminant
pH (Lab)	2014	8.60	8.50 - 8.80	N/A	N/A	N/A
Aggressive Index	2014	11.66	11.61 - 11.77	N/A	N/A	N/A
Alkalinity, Total (as CaCO3)	2014	74.80	72 - 84	N/A	N/A	N/A
Bicarbonate (HCO3)	2014	81.40	77 - 90	N/A	N/A	N/A
Hardness, Total (as CaCO3)	2014	15.80	12 - 19	N/A	N/A	N/A
Calcium (Ca)	2014	6.38	4.90 - 7.80	N/A	N/A	N/A
Potassium (K)	2014	0.68	0 - 1.40	N/A	N/A	N/A
Sodium (Na)	2014	33.60	31 - 40	N/A	N/A	N/A
Total Anions	2014	2.04	1.90 - 2.30	N/A	N/A	N/A
Carbonate (CO3)	2014	3.36	0 - 6.20	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	70.20	53 - 91	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).

Hexavalent Chromium Health Effects: Some people who drink water containing hexavalent chromium in excess of the MCL over many years may have an increased risk of getting cancer.

*** Pursuant to a California regulation adopted July 1, 2014, the level of a substance called hexavalent chromium should not exceed 10 ug/L in drinking water provided by a public water system. This number is known as the maximum contaminant level or MCL. Senate Bill 385, which became law effective September 4, 2015, allows public water systems, with sources that produce water with a hexavalent chromium concentration above the MCL, time to come into compliance. So long as a public water system complies with the new law (Health & Safey Code, section 116431), it will not be deemed in violation of the MCL. In addition to other requirements, the new law requires the water system to come into compliance at the earliest feasible date prior to January 1, 2020.**