

CITY OF ADELANTO

2010 Urban Water Management Plan

June 2011



Prepared By:
PSOMAS

2010 URBAN WATER MANAGEMENT PLAN



City of Adelanto

June 22, 2011

P S O M A S

3 Hutton Centre Drive, Suite 200
Santa Ana, CA 92707

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ACRONYMS and ABBREVIATIONS

AB	Assembly Bill
AF	Acre Feet
AFY	Acre Feet per Year
APUA	Adelanto Public Utilities Authority
ARRA	American Recovery and Reinvestment Act of 2009
ASCE	American Society of Civil Engineers
AWAC	Alliance for Water Awareness and Conservation
AWWA	American Water Works Association
BAP	Base Annual Production
BMO	Best Management Objective
BMP	Best Management Practice
CALSIM	California Water Allocation and Reservoir Operations Model
CAWCD	Central Arizona Water Conservation District
CCF	Hundred Cubic Feet
CCR	Consumer Confidence Report
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CFS	Cubic Feet Per Second
CII	Commercial, Industrial, and Institutional
CIMIS	California Irrigation Management Information System
CMP	Conservation Master Plan
CPUC	California Public Utilities Commission
CRA	Colorado River Aqueduct
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
CVWD	Coachella Valley Water District
DBP	Disinfection Byproducts
D/DBP	Disinfectants and Disinfection Byproducts
DMM	Demand Management Measure
DOE	Department of Energy
DOF	Department of Finance
DRR	Delivery Reliability Report
DWR	Department of Water Resources
EPA	Environmental Protection Agency
ERR	Emergency Response and Recovery
ESA	Endangered Species Act

ACRONYMS and ABBREVIATIONS (Cont'd)

ET	Evapotranspiration
ETc	Evapotranspiration for a specific crop
ETo	Evapotranspiration for a standardized grass surface
ETr	Evapotranspiration for a standardized alfalfa surface
FPA	Free Production Allowance
FY	Fiscal Year
GAC	Granular Activated Carbon
GAFB	George Air Force Base (Now Southern California Logistics Airport)
GIS	Geographic Information System
GPCD	Gallons Per Capita Per Day
GPF	Gallons Per Flush
GPM	Gallons Per Minute
HAA	Haloacetic Acids
HELP	High Efficiency Living Program
HET	High Efficiency Toilets
HEWM	High-Efficiency Washing Machines
IRWMP	Integrated Regional Water Management Plan
Kc	Crop Coefficient
MAF	Million Acre Feet
MCL	Maximum Contaminant Level
MG	Million Gallons
MEEC	Mojave Environmental Education Consortium
MGD	Million Gallons per Day
MG/L	Milligrams per liter
MOU	Memorandum of Understanding
MTBE	Methyl Tertiary Butyl Ether
MWA	Mojave Water Agency
NDMA	N-Nitrosodimethylamine
ng/L	Parts per Trillion
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRDC	Natural Resources Defense Council
OEHHA	Office of Environmental Health Hazard Assessment
PAC	Project Advisory Committee
pCi/L	picocuries per liter
PCE	Tetrachloroethylene

ACRONYMS and ABBREVIATIONS (Cont'd)

PHG	Public Health Goal
PPCPs	Pharmaceutical and Personal Care Products
psi	Pounds per square inch
PSP	Proposal Solicitation Package
PSY	Production Safe Yield
PVID	Palo Verde Irrigation District
QSA	Quantification Settlement Agreement
RHNA	Regional Housing Needs Assessment
RUWMP	Regional Urban Water Management Plan
RWMP	MWA's Regional Water Management Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition System
SCAG	Southern California Association of Government
SCWA	Sonoma County Water Agency
SEMS	State Emergency Management System
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	Thousand Acre Feet
TCE	Trichloroethylene
TDML	Total Daily Maximum Loads
TDS	Total Dissolved Solids
THM	Trihalomethane
TOC	Total Organic Carbon
µg/L	Micrograms Per Liter
ULF	Ultra Low Flush
ULFT	Ultra Low Flush Toilet
USBR	United States Bureau of Reclamation
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
VOC	Volatile Organic Compounds
VVWRA	Victor Valley Wastewater Reclamation Authority
VWD	Victorville Water District
WAS	Water Augmentation Study
WQPP	Water Quality Protection Plan
WRCC	Western Regional Climate Center

EXECUTIVE SUMMARY

Background

The California Water Management Planning Act of 1983 as amended, requires urban water suppliers, either publicly or privately owned, providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet per year (AFY), to develop an Urban Water Management Plan (UWMP) every five years. The UWMP documents the availability of an appropriate level of reliability of water service sufficient to meet the needs of various categories of customers during normal, single dry and multiple dry years. The 2010 UWMP must be adopted on or before July 1, 2011 and must be submitted to the California Department of Water Resources with 30 days of adoption.

Senate Bill (SB) X7-7, signed into law in November 2009, requires urban water suppliers to achieve a targeted 20 percent water conservation reduction by 2020 and to identify that target in their 2010 UWMP. SBX7-7 also extends the due date for adoption of 2010 UWMPs from December 31, 2010 to July 1, 2011.

City Water Service Area

The City of Adelanto serves approximately 7,300 customers within its 50 square mile water service area. Adelanto's current population is 31,765 and is projected to increase to 68,252 by 2035.

The City's water system includes 113 miles of pipe varying in diameter from 6-inches to 24-inches, nine active potable water wells, four booster pump stations, four pressure reducing stations, seven reservoirs ranging from 0.75 million gallons (MG) to 5.0 MG and two emergency interties with the Victorville Water District.

Sources of Supply

In 2010, 100 percent of the City's water supply (4,866 acre-feet or AF) came from groundwater pumping from the Alto Subarea of the Mojave Basin. It is anticipated that Adelanto will continue to rely on groundwater pumping to meet 100 percent of its supply for the foreseeable future.

The City lies within an adjudicated basin (1996, Judgment from the Riverside County Superior Court), which is managed by a Watermaster. The Mojave Water Agency (MWA) was appointed by the Court as the Watermaster. As part of its responsibilities, the Watermaster establishes a Base Annual Production (BAP) and a Free Production Allowance (FAP) for each water purveyor in the Mojave Basin. Adelanto's BAP and FPA are 4,366 AFY and 2,620 AFY, respectively (the current FPA for Adelanto is set at 60 percent of the BAP). The City is entitled to pump more than 2,620 AF/year (AFY) if it purchases replacement water in the amount of the excess pumped over and above the FPA at a current cost of \$395/AF.

Water Quality

As required by the U.S. Safe Drinking Water Act, and administered by the California Department of Public Health, the City provides annual water quality reports (also known as Consumer Confidence Reports) to its customers. As noted in the City's most recent water quality report, "*No additional treatment of your water is necessary to ensure its safety.*"

MWA, which is responsible for managing the Mojave Basin, carefully monitors the water quality in the Basin using sampling data obtained from over 900 monitoring wells in its service area. Some key contaminants found within MWA's service area include arsenic, chromium, nitrates, manganese and iron; however, samples taken for these potential contaminants within the City of Adelanto's service area, with one exception, have all been below Federal and State established maximum contaminant levels (MCL) with many readings registering "non-detectable." The one exception was a high arsenic reading recorded at Well No. 8A in 2010; that well has since been removed from service pending implementation of appropriate mitigation measures or a drop in the contaminant level below the MCL.

Water Reliability Planning

The reliability of the City's water supply is dependent upon the groundwater basin managed by the Mojave Basin Watermaster. MWA continually strives to protect existing regional water supplies and identify possible new supplies, where possible. MWA is a State Water Project (SWP) contractor and has a current SWP Table A allotment to 82,800 AFY, subject to variation based on yearly climatic conditions. In its 2010 UWMP, MWA projects supply surpluses for all normal years through 2035. MWA also projects the capability of meeting all single-dry and multiple-dry year demands in its service area through 2035.

The City of Adelanto continually reviews practices that will provide its customers with adequate and reliable water supplies. The City's current Capital Improvement Plan (CIP) references a number of recommended water system improvements including treatment facilities, construction of a recycled water transmission and storage project, expansion of potable water storage capacity, updating the City's supervisory control and data acquisition system (SCADA), as well as the purchase of equipment and software needed to address other routine maintenance and operational needs.

20x2020 SBX7-7 Water Conservation Targets

As previously noted, SBX7-7 requires urban water supplies to achieve a 20 percent reduction in water usage by 2020, as well as a ten percent reduction by 2015. These targets, which allow credits for past water conservation efforts, are established by calculating baseline averages based on water usage from the most advantageous ten-year period occurring over the last 15 years. The City's baseline average water usage from 1996-2005 (the most advantageous ten-year period) was 321.8 gallons per capita per day (gpcd). By analyzing the data using a number of allowable alternative methods, the

City's conservation targets for 2015 and 2020 have been established at 262.9 gpcd and 203.9 gpcd, respectively.

City residents and businesses have significantly reduced their water consumption in recent years. As a result of that conservation effort, the City has already met the 2015 water conservation target for the past eight years (2003 – 2010) and has met the 2020 target for the past four years (2007 – 2010). Despite already meeting its 2015 and 2020 targets, the City will continue to encourage water conservation through a variety of means including: (1) encouraging City residents and businesses to conserve more water; (2) educating the public through a variety of programs on the need for continued water conservation; (3) continuing to operate and maintain the water distribution system with an eye toward reducing water losses by repairing or eliminating any leaks that develop as soon as practical; (4) encouraging or requiring new developments to install water conservation fixtures and landscape with low water use plant materials; and (5) possible construction of a recycled water system.

This UWMP presents a series of scenarios for normal, single-dry and multiple dry years. The tables presented in Section 5 of this UWMP are based largely on MWA's future water supply reliability projections as presented in their 2010 UWMP as well as the City's adjudicated groundwater rights. Based on this information, it is projected that Adelanto will have surplus available water supplies under all normal years through 2035 and will have sufficient supplies available to meet all water demands during single dry and multiple dry years through 2035. In normal years, supply is anticipated to exceed demand by percentages varying from approximately 5 to 16 percent depending on the year.

Water Use Provisions

Water usage within the City's water service area is projected to increase from 4,866 AFY to 12,084 AFY over the next 25 years. Similarly, the number of metered connections in the City's service area is expected to increase from the current 7,336 to 15,763 by 2035. These projected increases are based primarily on the anticipated growth in the City's population. Ninety-seven percent of the City's current connections serve multi or single family residential units with the balance serving commercial, institutional and irrigation customers. These percentages are not expected to change significantly over the next 25 years.

Demand Management Measures

The Urban Water Management Planning Act requires implementation of 14 Demand Management Measures (DMM). These 14 DMMs include technologies and methodologies that have been sufficiently documented in multiple demonstration projects to have resulted in more efficient water use and conservation. Implementation of these DMMs will thus reduce the City's reliance on imported water by introducing new alternatives sources to the extent physically and financially practicable. Many of the DMMs are implemented by the City in coordination with MWA and the Alliance for Water Awareness and Conservation (AWAC) and their regional conservation programs.

Specifically, the 14 DMMs include: (1) water survey programs for single-family residential and multifamily residential customers; (2) residential plumbing retrofit; (3) system water audits, leak detection, and repair; (4) metering with commodity rates for all new connections and retrofit of existing connections; (5) large landscape conservation programs and incentives; (6) high-efficiency washing machine rebate programs; (7) public information programs; (8) school education programs; (9) conservation programs for commercial, industrial, and institutional accounts; (10) wholesale agency programs; (11) conservation pricing; (12) use of a water conservation coordinator; (13) water waste prohibition; (14) residential ultra-low-flush toilet replacement programs

Water Shortage Contingency Planning

Adelanto's City's Municipal Code incorporates a Water Conservation Plan (Section 8.20) and a Landscape Water Conservation Ordinance (Section 17.60), which establish rules and regulations governing the use of water within the City. Additionally, the City has a Four Stage Plan of Action, which will be implemented in the event of a long-term drought or significant loss of supply. These Code sections, as well as accompanying ordinances and the Four Stage Plan of Action encourage water conservation practices and establish penalties for violating any prohibited usages during times of drought.

Water Recycling

Adelanto does not currently use recycled water for municipal purposes nor does it provide recycled water to its customers. However, pending the anticipated 2012 completion of construction of City's wastewater treatment plant expansion project (from 1.5 MG/day or MGD to 4.0 MGD), the City is planning to construct a recycled water distribution and storage system.

1 INTRODUCTION

1.1 PURPOSE AND UWMP SUMMARY

An Urban Water Management Plan (UWMP) prepared by a water purveyor documents the availability of an appropriate level of reliability of water service sufficient to meet the needs of various categories of customers during normal, single dry and multiple dry years. Having such a long-term reliable supply of water is essential to protect the productivity of California's businesses and economic climate. The California Water Management Planning Act of 1983 (Act) as amended, requires urban water suppliers to develop an UWMP every five years in the years ending in zero and five. Under normal circumstances, all 2010 UWMPs would have been due for adoption by December 31, 2010 and submittal within 30 days of adoption to the Department of Water Resources (DWR); however, Senate Bill (SB) 7-7 (or SBX7-7) provided an additional six months to retail urban water supply agencies to allow them to conduct additional required water conservation analyses. Thus, the City of Adelanto's (City) 2010 UWMP must now be adopted on or before July 1, 2011 and submitted to DWR within 30 days of the date of adoption.

In addressing urban water management issues, the legislature made a number of significant declarations including:

- The waters of the state are a limited and renewable resource subject to ever increasing demands;
- Conservation and efficient use of urban water supplies are of statewide concern;
- Successful implementation of plans is best accomplished at the local level;
- Conservation and efficient use of water shall be actively pursued to protect both the people of the state and their water resources;
- Conservation and efficient use of urban water supplies shall be a guiding criterion in public decisions; and
- Urban water suppliers shall be required to develop water management plans to achieve conservation and efficient use.

The City's 2010 UWMP has been prepared in compliance with the requirements of the Act, as amended to 2010¹ (included in Appendix A along with a copy of SBX7-7), and includes discussion on the following:

- Water Utility Service Area
- Water Utility Facilities

¹ California Water Code, Division 6, Part 2.6; §10610, et. seq. Established by Assembly Bill 797 (1983); can be at: http://www.water.ca.gov/urbanwatermanagement/docs/water_code-10610-10656.pdf (also included in Appendix A of this UWMP)

- Water Sources and Supplies
- Water Quality Information
- Water Conservation to Meet SBX7-7 20x2020 Criteria
- Water Reliability Planning
- Water Use Provisions
- Water Demand Management Measures
- Water Shortage Contingency Plan
- Water Recycling

1.2 UWMP UPDATE PREPARATION

The City of Adelanto did not prepare a 2005 UWMP; however, the City did submit a 2000 UWMP to DWR. This 2010 UWMP revises the City's 2000 UWMP and incorporates changes enacted by recent legislation including SB 1087 (2005), AB 1376 (2007), AB 1465 (2010), and SBX7-7 (2010). A brief summary of each of these legislative changes, as well as other related legislative changes, follows:

- SB 1087 (2005) – Requires retail water suppliers to include single family and multiple family projections for lower income and affordable households in their UWMPs. This legislation is intended to assist the water agencies in complying with the requirements Government Code Section 65589.7, which requires water suppliers to grant a priority for provision of service to housing units affordable to lower income households.
- AB 1376 (2007) – Requires each urban water supplier to notify the Planning Department of any City or County within which the supplier provides water with at least 60 days prior notice that the supplier will be reviewing the plan and considering amendments or changes to it.
- AB 1465 (2010) – Clarifies that urban water suppliers that are members of the California Urban Water Conservation Council (CUWCC) and comply with the provisions of the “*Memorandum of Understanding Regarding Urban Water Conservation in California*”² (MOU) dated December 10, 2008, as it may be amended (the most recent amendment is June 9, 2010), may submit their annual reports required under the CUWCC MOU as evidence of compliance without the need for any additional documentation in their UWMPs.

² The *Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU) was adopted in September 1991 by a large number of water suppliers, public advocacy organizations and other interested groups and most recently amended on June 9, 2010. The MOU created the *California Urban Water Conservation Council* and established 16 Best Management Practices (BMPs) for urban water conservation, recently refined to 14 BMPs. The MOU is available at: <http://www.cuwcc.org/WorkArea/showcontent.aspx?id=15180>

- SBX7-7 (2010) – Requires urban water suppliers to include the following information in their 2010 UWMPs with respect to a targeted 20 percent water conservation reduction by 2020: (1) baseline daily per capita use; (2) urban water use target; (3) interim water use target; and (4) compliance daily per capita water use, including technical bases and supporting data for those determinations.
- SBX7-7 (2010) – Extends the deadline for adoption of urban retail water suppliers 2010 UWMPs until July 1, 2011, to provide sufficient time to prepare the additional required water conservation analyses described in the previous bullet.

Other legislation, which does not directly impact UWMPs, but affects eligibility for grants and loans, includes:

- AB 1420 (2007) – This legislation contains several provisions relating to urban water management plans, including:
 - Conditions eligibility for State grant and loan funding to an urban water supplier awarded or administered by DWR, the State Water Resources Control Board, or California Bay-Delta Authority or its successor agency on the following factors: (1) the implementation of water demand management measures, including the extent of compliance with conservation measures described in the previously referenced “*Memorandum of Understanding Regarding Urban Water Conservation in California.*”
 - Requires DWR, in consultation with the State Water Resources Control Board and the California Bay-Delta Authority or its successor agency, to develop eligibility requirements to implement the foregoing grant and loan conditions.
 - Requires DWR, in consultation with the CUWCC, to convene a technical panel no later than January 1, 2009 to provide information and recommendations to the Department and the Legislature on new demand management measures, technologies and approaches. The panel and DWR must report to the legislature on their findings no later than January 1, 2010 and each five years thereafter.
- SBX3-27 (2009) – Exempts projects funded by the American Recovery and Reinvestment Act of 2009 (ARRA) from the conditions placed on state funding for water management to urban water suppliers regarding implementation of water conservation measures that were implemented under AB 1420.
- SBX7-7 (2010) – Repeals the existing grant funding conditions of AB 1420 on July 1, 2016 if they are not extended or altered prior to that date. After July 1, 2016, urban water retail water suppliers are required to be in compliance with the 20 percent by 2020 water use reduction goals to be eligible for state water management grants or loans.

The UWMP also incorporates water use efficiency efforts the City has implemented or is considering implementing pursuant to the previously referenced *Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU). The City of Adelanto is not currently a signatory of the MOU, but is considering membership in the organization.

The sections in this Plan correspond to the outline of the Act, specifically Article 2, Contents of Plans, Sections 10631, 10632, and 10633. The sequence used for the required information; however, differs slightly to allow for presentation of the information in a manner reflecting the unique characteristics of the City's water utility. The Department of Water Resources Urban Water Management Plan Checklist form has been completed and is included in Appendix B. This document identifies the location in this UWMP where required elements can be found.

1.2.1 Plan Adoption

The 2010 UWMP Update was adopted by resolution of the Adelanto Public Utilities Authority (APUA) on June 22, 2011, following a public hearing. The Plan was submitted to the California DWR and the State Library within 30 days of Council approval. Copies of the Notice of Public Hearing, including proof of publication, the Resolution of Plan Adoption and the 60-day notification of public hearing letter sent to the County of San Bernardino are included in Appendix C. Draft copies of the Plan were posted on the City's website prior to the Public Hearing thereby making them available to the public. A copy of the Plan was provided to the County of San Bernardino within 30 days of approval of the Plan. Copies of the adopted UWMP were also made available to the public within 30 days following City Council adoption.

1.2.2 Agency Coordination

Development of the UWMP was led by the Adelanto Water Department through the Adelanto Public Utilities Authority (APUA). The APUA is charged with providing safe, good quality, uninterrupted water at a reasonable pressure, to meet health and fire protection needs of that portion of the city served by the public water system.³ The APUA staff coordinated with the City Planning Department and the City Clerk in development, distribution and adoption of the plan.⁴

Over the past ten years, 100 percent of the City's potable water supply has been pumped from the groundwater aquifer. The groundwater basin is managed by the Mojave Water Agency (MWA), which has rights to imported water from the California Department of Water Resources' (DWR) State Water Project (SWP). This UWMP incorporates data obtained from these agencies where appropriate.

³ APUA Mission Statement extracted from City of Adelanto website at:
http://www.ci.adelanto.ca.us/index.asp?Type=B_BASIC&SEC={F8909B8C-A37E-460E-9003-E5BD48A8738A}&DE=

⁴ Future water system references in this report to the City of Adelanto (City) or the APUA shall be considered synonymous

The intent of this plan is to focus on specific issues unique to the City’s water service area. While some regional UWMP issues are introduced in this plan, more comprehensive regional information is presented in MWA’s Regional UWMP.⁵

To assist City staff in preparation of the City’s 2010 UWMP, City staff and/or consultants to the City for preparation of the UWMP attended the following workshops facilitated by DWR:

- DWR: Various on-line webinars held on November 30, 2010, December 16, 2010, January 5, 2011 and January 12, 2011.
- DWR: 2010 UWMP Workshop at the Irvine Ranch Water District, March 8, 2011.

Table 1.2-1 lists the entities that Adelanto coordinated with in the development of the City’s 2010 UWMP.

**Table 1.2-1
City of Adelanto UWMP Development Coordination and Public Involvement**

Entities	Coordination and Public Involvement Actions					
	Participated in UWMP Preparation	Used Agency Data as an Information Resource	Sent and/or Available To: Copy of Draft UWMP	Commented on Draft UWMP	Sent Notice of Public Hearing	Attended Public Hearing
APUA	X	X	X	X	X	X
City Planning Department	X	X	X	X	X	X
City Clerk		X	X		X	X
MWA		X	X			
Victorville Water District		X	X			
County of San Bernardino		X	X		X	
General Public			X		X	X

In preparing the City of Adelanto’s 2010 UWMP, the City also utilized information from the Final Mojave Water Agency 2010 UWMP, the Metropolitan Water District of Southern California November 2010 Final Regional UWMP (a good source of information pertaining to the SWP), and the “*Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan*” prepared by DWR. This UWMP details the specifics as they relate to the City and its service area and will refer to MWA

⁵ A copy of the Final 2010 MWA UWMP dated June 2011 and adopted on June 9, 2011, is available at: http://mojavewater.granicus.com/MetaViewer.php?view_id=2&clip_id=60&meta_id=6420

and other agencies throughout. Numerous references were used in the development of this UWMP and are cited in footnotes throughout the Plan.

The UWMP is intended to serve as a general, flexible, and open-ended document that periodically can be updated to reflect changes in regional water supply trends and water use efficiency policies. This Plan, along with other City planning documents, will be used by City staff to guide water use and management efforts through the year 2015, when the UWMP is required to be updated.

1.3 WATER SERVICE AREA

Incorporated in 1970, Adelanto is located on U.S. Highway 395, in the western portion of California's Mojave Desert in southwestern San Bernardino County. The City is situated 35 miles north of the City of San Bernardino, via Interstate 15. The City of Adelanto encompasses approximately 50 square miles. The City's water service area is depicted in Figure 1.3-1.

1.3.1 Climate Characteristics

The City's service area lies within California's High Desert with a climate that differs considerably from other areas of Southern California. A broad range of temperature fluctuations between summer and winter, as well as between day and night, characterize the high desert's climate. Also characteristic of the high desert is an average humidity of 42%, and strong winds that blow in a northeasterly direction. It is not unusual to experience winds of 30- 40 mph or higher, although the average wind speed is 10.9 mph.

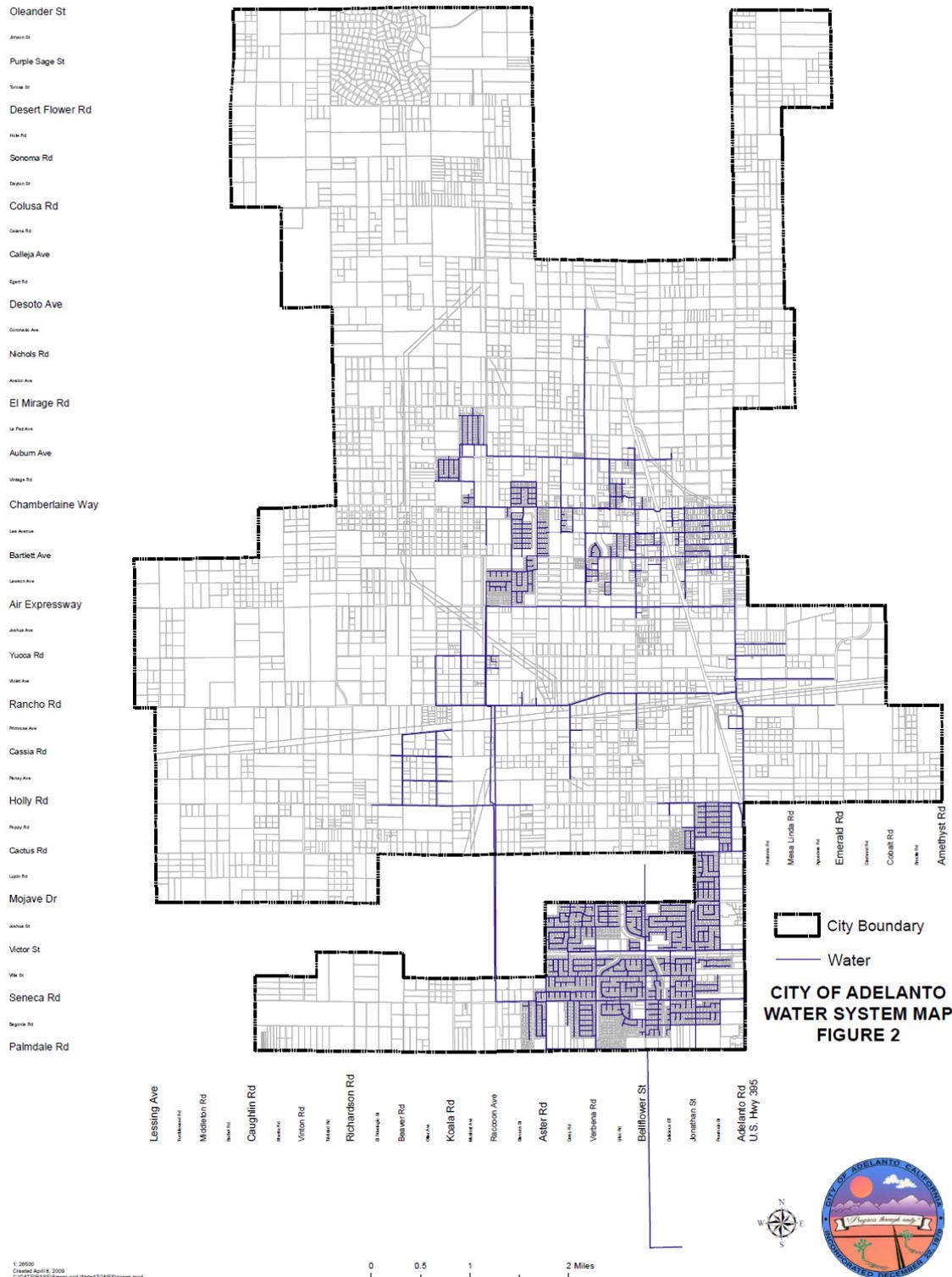
Average annual rainfall in Adelanto is just 5.56", typically occurring in late fall and winter, although the high desert does experience summer thunderstorms. Some snow also falls during winter months, averaging 1.4" annually. The average maximum and minimum temperatures are 77.5° F and 43.8° F, respectively. Table 1.3-1 summarizes area temperatures and precipitation data.

**Table 1.3-1
City of Adelanto Average Temperatures and Precipitation⁶**

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total or Average
Temp (°F)	Max	58.7	62.1	67.0	74.1	82.5	91.6	98.3	97.1	91.1	80.2	67.4	59.4	77.5
	Min	29.8	33.1	36.6	41.5	47.7	54.2	60.8	60.0	53.9	44.3	34.5	29.2	43.8
Rainfall (inches)		0.96	1.06	0.82	0.36	0.13	0.04	0.13	0.20	0.24	0.32	0.50	0.80	5.56
Snowfall (inches)		0.9	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	1.4

⁶ Data obtained from Western Regional Climate Center (WRCC), Desert Research Institute, Reno, Nevada <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9325>; WRCC program administered by the National Oceanic and Atmospheric Administration (NOAA); data extracted from monitoring Station 049325 at Victorville, California (closest WRCC station to Adelanto with complete data) covering the period January 1, 1917 through July 31, 2009.

Figure 1.1
City of Adelanto Water Service Area



Evapotranspiration

Evapotranspiration (ET) is the loss of water to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indication of how much water crops, lawn, garden, and trees need for healthy growth and productivity.

For ET to take place, the following conditions have to be met. First, water has to be present at the surface. Second, there must be some form of energy to convert the liquid water into a water vapor. Third, there must be a mechanism to transport the water vapor away from the evaporating surface.

Precipitation and irrigation are the two primary sources of water that plants use. Plant leaves and soil surfaces temporarily retain some part of the water applied to the field. This part is readily available for evaporation. The remaining part infiltrates into the soil. Plants extract the infiltrated water through their roots and transport it up to their leaves for photosynthesis, a process by which plants produce glucose (sugar).

Many factors affect ET including:

- Weather parameters such as solar radiation, air temperature, relative humidity and wind speed;
- Soil factors such as soil texture, structure, density and chemistry; and
- Plant factors such as plant type, root depth, foliar density, height and stage of growth.

Although ET can be measured using such devices as lysimeters, estimating ET using analytical and empirical equations is a common practice because measurement methods are expensive and time consuming. Most ET equations were developed by correlating measured ET to measured weather parameters that directly or indirectly affect ET. Since there are so many factors affecting ET, it is extremely difficult to formulate an equation that can produce estimates of ET under different sets of conditions. Therefore, the idea of a reference crop evapotranspiration was developed by researchers. Reference ET is the ET rate of a reference crop expressed in inches or millimeters.

Reference crops are either grass or alfalfa surfaces whose biophysical characteristics have been studied extensively. ET from a standardized grass surface is commonly denoted as E_{To} whereas ET from a standardized alfalfa surface is denoted as E_{Tr} . The American Society of Civil Engineers (ASCE) recommends the use of E_{To} s and E_{Tr} s, respectively, where “s” stands for standardized surface conditions. The logic behind the evapotranspiration idea is to set up weather stations on standardized reference surfaces for which most of the biophysical properties used in ET equations are known. ET from such surfaces can then be estimated using these known parameters and measured weather parameters. Then a crop factor, commonly known as the “crop coefficient” of “ K_c ” is used to calculate the actual evapotranspiration (E_{Tc}) for a specific crop in the same microclimate as the weather station site.

The California Irrigation Management Information System (CIMIS), Department of Water Resources, Office of Water Efficiency is using well-watered actively growing closely clipped grass that is completely shading the soil as a reference crop at most of its over 130 weather stations. Therefore, reference evapotranspiration is mostly referred to as ETo on the CIMIS website, although there are a few notable exceptions with ETr. There are many theoretical and empirical equations around the world to estimate ETo. The choice of any one method depends on the accuracy of the equation under a given condition and the availability of the required data. For reference surfaces with known biophysical properties, the main factors affecting ETo include solar radiation, relative humidity/vapor pressure, air temperature and wind speed. Therefore ETo can be estimated quite accurately using a model (a series of mathematical equations).

The monthly average ETo data shown in Table 1.3-2 has been extracted from the CIMIS Victorville station (#117), which is the closest station to Adelanto (located in Victorville near the intersection of Mojave Fish Hatchery Road and Jacaranda Avenue). This station was activated on February 1, 1994.⁷

**Table 1.3-2
Average Evapotranspiration (ETo) Rates for Adelanto Area⁸**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo (inches)	2.02	2.61	4.55	6.19	7.30	8.85	9.77	8.99	6.52	4.66	2.68	2.05	66.19

1.3.2 Demographics

A combination of US Census Bureau population data for 2010 and Southern California Association of Governments (SCAG) projections extracted from the General Plan Growth Forecast for the 2012 Regional Transportation Plan (RTP) were used to project Adelanto’s population over the next 25 years.⁹ Based on projected data from 2005-2009, the US Census Bureau estimated an average household size of 3.86 person in the City.¹⁰

Past and projected populations are summarized in Table 1.3-3, which depicts projections in five-year increments to the year 2035.

⁷ For additional information, refer to the CIMIS website at:

<http://www.cimis.water.ca.gov/cimis/frontStationDetailInfo.do?stationId=174&src=info>

⁸ Data based on CIMIS station #117 in Victorville, CA, the closest station to Adelanto (<http://www.cimis.water.ca.gov/cimis/monthlyEToReport.do>); averages are based on the period this station has been in service, i.e., February 1, 1994 through April 2011.

⁹ Population forecast data based on based on SCAG General Plan Growth Forecast for 2012 RTP available at: <http://www.scag.ca.gov/forecast/index.htm>

¹⁰ Per US Census Bureau American Fact Finder website at:

http://factfinder.census.gov/servlet/ACSSAFFacts?_event=Search&geo_id=&_geoContext=&_street=&_county=adelanto&_cityTown=adelanto&_state=04000US06&_zip=&_lang=en&_sse=on&_pctxt=fph&_pgsl=010

**Table 1.3-3
City of Adelanto Water Service Area Population Projections by Year**

	2000	2010	2015	2020	2025	2030	2035
Service Area Population	18,130	31,765	38,866	45,967	53,395	60,824	68,252

Source: 2000 and 2010 data from US Census Bureau; 2020 and 2035 data from SCAG; Population estimates for 2015, 2025 and 2030 based on linear interpolation between US Census Bureau and SCAG data points

1.3.3 City of Adelanto Water Utility and System Facilities

The City of Adelanto water supply comes solely from groundwater production from 15 potable wells. The City's water system delivers water to three pressure zones and consists of the aforementioned wells, transmission and distribution pipelines, booster stations and reservoirs. These facilities include:¹¹

- Approximately 113 miles of transmission and distribution mains ranging in diameter from 6- to 24-inches;
- Nine active potable water wells with a total pumping capacity of 4,728 gallons per minute (gpm). The City also has seven wells, which are currently inactive, but some of which may be returned to service in future years. These totals include two wells rehabilitated since 2007 and two new wells drilled in 2005 and 2008;
- Seven welded steel tanks ranging in size from 0.75 million gallons (MG) to 5 MG with a total capacity of 21.75 MG;
- Four booster stations which pump water from lower to upper pressure zones; and
- Four pressure reducing stations, which transfer water from upper to lower pressure zones.
- Two emergency interties with the Victorville Water District.

¹¹ Water facility information extracted from the City of Adelanto Water Master Plan, December 2007, prepared by So & Associates Engineers, Inc., with some adjustments based on input from City staff

2 WATER SOURCES AND SUPPLIES

2.1 WATER SOURCES

The City obtains all of its water supply from local groundwater in the Mojave River Basin. The Mojave Basin Area was the subject of a court ordered adjudication in 1993 due to the rapid growth within the area, increased withdrawals, and lowered groundwater levels. The court's Judgment appointed MWA as Watermaster of the Mojave Basin Area. Additional detail on the Judgment is provided later in this section of the UWMP.

Adelanto is one of ten major retail purveyors that provide the majority of water in the Mojave Basin Area under MWA's management. For management purposes under the Mojave Basin Judgment, MWA subdivided the Mojave River watershed and associated groundwater basins into five subareas (Alto, Baja, Centro, Este, and Oeste). The City lies within MWA's Alto Subarea. Adelanto and the other purveyors in the area supply water to their customers from local groundwater. MWA replenishes the groundwater supply, primarily with imported water purchased from the SWP.

The court ordered adjudication of the Mojave Basin Area allocates a variable free production allowance (FPA) to each purveyor that supplies more than 10 AFY, including Adelanto. Each allocated FPA represents the purveyor's share of the water supply available from the MWA Subarea. FPAs are determined as a percentage of the purveyor's highest verified annual use from 1986 to 1990. The FPA, which is currently set at 60 percent of the BAP for Adelanto, can vary from year to year depending on the Watermaster's safe yield projections for the Basin. If Adelanto, or another purveyor, pumps more than its allotted FPA in any year, they are required to purchase replacement water equal to the amount of production in excess of the FPA. Replacement obligations can be satisfied by either paying MWA, or by temporarily transferring unused FPA within the subarea from another party. The current replacement charge is \$395/AF with anticipated increases of between three and four percent per year to \$456.00/AF in 2016. Table 2.1-1 shows the City's (BAP) and current allotted FPA from the Alto Subarea in which it lies.

**Table 2.1-1
Adelanto BAP and FPA¹²**

MWA Subarea	Base Annual Production (AFY)	Free Production Allowance (AFY)
Alto	4,366	2,620
Total	4,366	2,620

¹² Information from MWA 17th Annual of the Mojave Basin Watermaster for the Water Year 2009/10, dated May 1, 2011, Appendix B; report available at: <http://www.mojavewater.org/home/watermaster/documents/17AR0910.pdf>

At one time, the City of Adelanto had access to an additional 3,433 AFY in BAP rights (with access to 2,060 AFY in FPA rights) in the Alto Subarea for water rights previously assigned to George AFB; however, 80 percent of those rights have since been transferred to the Victorville Water District in settlement of recent litigation filed by that agency. Adelanto received twenty percent or 686 AFY of the former George AFB rights, all of which is now incorporated into the 4,366 AFY BAP and the 2,620 AFY FPA allocation shown in Table 2-1.

2.1.1 Mojave Water Agency (MWA)

The Mojave Water Agency was founded July 21, 1960. It was created to address concerns over declining regional groundwater levels and to ensure that sufficient water may be available to the people and land within its jurisdiction. MWA is one of 29 SWP contractors that provide Californian's with drinking and irrigation water. MWA serves an area of approximately 4,900 square miles in San Bernardino County. MWA separates its service area into six management areas, including the five previously referenced subareas of the adjudicated Mojave Basin Area (Alto, Baja, Centro, Este, and Oeste) and the Morongo Basin/Johnson Valley Area. Mojave Water Agency's service area, its subareas, and its ten major water purveyors are shown in Figure 2-1.¹³

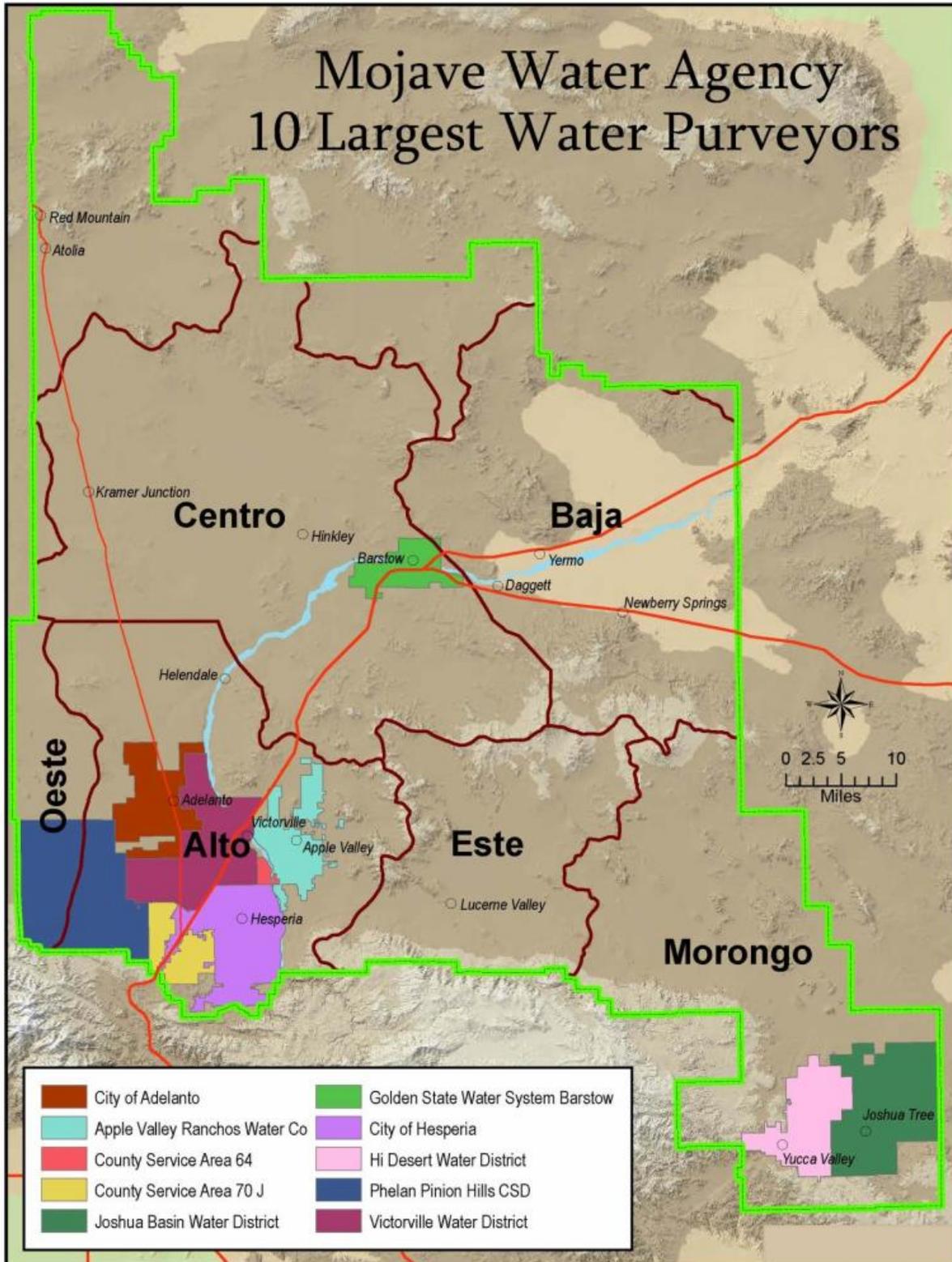
MWA has five sources of water supply, which include:

1. Natural surface water flows;
2. Wastewater imports from outside the MWA service area;
3. SWP imports;
4. Agricultural depletion from storage; and
5. Return flow from pumped groundwater not consumptively used.

MWA considers agricultural depletion from storage as a supply derived from storage depletion to avoid showing demand from agriculture on imported water supplies. Return water includes water pumped from the ground that is returned to the groundwater aquifer, such as water used indoors that returns to the basin either by percolation from septic tanks or treated wastewater effluent.

¹³ Service area map from Final MWA 2010 UWMP dated June 2011 and adopted by the MWA Board of Directors on June 9, 2011

**Figure 2.1
 Mojave Water Agency Service Area**



2.2 WATER SUPPLY

In the 2010 water year, the City pumped all of its water supply from groundwater wells accessing the Mojave River Groundwater Basin. Current and projected water supplies are shown in Table 2-2 and described in subsequent sections.

**Table 2.2-1
Adelanto's Current and Planned Water Supplies in AFY**

Water Supply Sources	2010 ^[1]	2015	2020	2025	2030	2035
Groundwater Production	4,866	7,576	9,300	10,444	11,581	12,640
Total Water Supply	4,866	7,576	9,300	10,444	11,581	12,640

[1] Actual 2010 demand used, refer to Appendix F; other years based on Adelanto/MWA projections; refer to Table 5.2-1

During normal years, the City obtains all of its water supply from the local groundwater aquifer through its wells. The City does not have any surface water diversion facilities, desalination facilities, or recycled water facilities. Since the City is not located near the ocean, desalination is not a practical or economically feasible source of water.

During normal water system operation, there are no transfer exchanges of water within the City's service area. However, the City has two available emergency interties, both with the Victorville Water District (VWD). One is located on Air Expressway Boulevard just east of Highway 395. That intertie is a two-way connection from which Adelanto and VWD can both obtain and provide water. The second intertie is located near the intersection of Bellflower Street and Olivine Road. That intertie only allows one way flow from VWD to Adelanto. Adelanto only uses these interties on rare occasions with the last significant use coming in 2008 when it was used to fill the City's new 5 MG reservoir.

2.2.1 Groundwater

Mojave River Groundwater Basin

Adelanto obtains all of its water from the Mojave River Groundwater Basin. The basin covers an area of approximately 1,400 square miles and has an estimated total water storage capacity of nearly 5 million acre-feet.¹⁴ The Mojave River Groundwater Basin Area is basically a closed basin. Very little groundwater enters or exits the basin, but groundwater movement does occur between the different subareas, groundwater-surface water and groundwater-atmosphere interchanges. Groundwater is primarily recharged into the basin by infiltration from the Mojave River and storm runoff from San Gabriel and San Bernardino Mountains. The Mojave River provides an estimated average of

¹⁴ Final 2010 MWA UWMP dated June 2011 and adopted by MWA on June 9, 2011

65,000 AFY per year of recharge to the Mojave River Groundwater Basin.¹⁵ Other sources of recharge include recharge from human activities such as irrigation return flows, wastewater discharge, and enhanced recharge with imported water. Groundwater is primarily discharged from the basin through well pumping, evaporation, transpiration, and seepage into lakes and the Mojave River. During the water year July 2008 to June 2009, total basin production from MWA purveyors was 140,088 AF.¹⁶

According to MWA's 2005 Regional Water Management Plan, the Mojave Basin provides a net average annual water supply during normal years of 63,400 AFY, while the Alto Subarea provides 34,700 AFY during normal years. During single dry years these production figures drop to 28,300 AFY (44.6 percent of a normal year) and 13,650 AFY (39.3 percent of a normal year) for the Mojave Basin and the Alto Subarea, respectively. During multiple dry years, the production figures drop to 10,100 AFY (15.9 percent of a normal year) and 7,250 AFY (20.9 percent of a normal year), for the Mojave Basin and the Alto subarea, respectively.¹⁷

Basin Adjudication

The Mojave Basin Area was the subject of a court ordered adjudication in an interim judgment in 1993. In January of 1996 the Riverside County Superior Court issued a final ruling on the adjudication for the basin in the Mojave Basin Judgment (Appendix D). The Judgment allocated water rights to purveyors with groundwater usage higher than 10 AFY from the Mojave River Groundwater Basin and appointed MWA as Watermaster of the Mojave Basin Area. The Judgment was triggered by the rapid growth within the Mojave Water Agency service area in the early 1990's that led to increased withdrawals and lowered groundwater levels. A detailed history of the Judgment, as found on the Mojave Water Agency website, is presented below.¹⁸

The Adjudication of the Mojave Basin was initiated by a lawsuit filed May 30, 1990 by the City of Barstow and Southern California Water Company (now Golden State Water Company). The complaint alleged that the cumulative increase in water use in the upper part of the Mojave Basin caused or threatened to cause a reduction in the natural flow of water to the central part of the Mojave Basin (the area in which the City of Barstow is physically located). The complaint requested that an average annual flow of 30,000 acre-feet of surface water accrue to the area where the City of Barstow is located. The complaint also included 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.

¹⁵ The California Water Plan Update 2009, Volume 3 Regional Update for the South Lahontan Region; the plan is available at:

http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v3_southlahontan_cwp2009.pdf

¹⁶ Final MWA 2010 UWMP dated June 2011

¹⁷ MWA 2004 Regional Water Management Plan, Tables 4-2, 4-3, and 4-4; the report is available at:

<http://www.mojavewater.org/home/projects/documents/2004RegionalWaterManagementPlanFinal.pdf>

¹⁸ MWA, <http://www.mojavewater.org/home/watermaster/watermasterHistContent.aspx>

A cross-complaint was filed by the Mojave Water Agency approximately one year after the initial lawsuit. The cross-complaint requested that the Court declare the native natural water supply of the Mojave Basin inadequate to meet the demands of cumulative water production within the basin, as well as determine individual water production rights of producers of whatever nature throughout the entire Mojave Basin Area. This action included not only those water producers upstream of the City of Barstow, but also those water producers downstream of the City of Barstow.

A cross-complaint was also filed by Arc Las Flores Limited Partnership which requested that their appropriative, overlying and riparian rights be determined to be prior and paramount to any rights of the plaintiffs and any other water producers within the Basin.

Due to the magnitude and complexity of the case, the numerous water producers named as parties to the lawsuit agreed to conduct good faith negotiations. Discussion proceeded beginning in early 1992, with the objective of devising an equitable solution to the Basin Area's water supply problems and avoiding extensive and expensive litigation. During the next 18 months a committee of attorneys, engineers, and other individuals that were generally representative of all types of producers and all Subareas of the Basin Area conducted intense negotiations that resulted in a proposed settlement in the form of a Stipulated Judgment. The Stipulated Judgment set forth a proposed physical solution to the overdraft occurring in the Mojave Basin Area. The proposed Stipulated Judgment also created a class of minimal producers (that is, water producers using 10 acre-feet of water per year or less) who were dismissed from the case. It directed that the MWA create and administrate a procedure, acceptable to the Court, by which minimal producers could participate fairly in the physical solution.

Over 75 percent of the parties agreed to the Stipulated Judgment which was entered by the Court on September 22, 1993, binding all stipulating parties. After entry of the Stipulated Judgment, additional parties agreed to its terms. These parties represented over 80 percent of the verified water production in the Basin. A trial of the claims of the non-stipulating parties began on February 6, 1995 and was completed on March 21, 1995. Final Judgment was entered on January 10, 1996 adopting the physical solution set forth in the Stipulated Judgment.

Nine non-stipulating parties referred to as the "Cardozo Group" chose to appeal the Judgment entered by the Superior Court. The Appellate Court issued a Tentative Opinion in April 1998 and received oral argument from both the stipulating and non-stipulating parties in May 1998. The Appellate Court issued its final opinion on June 1, 1998. The final opinion affirmed in part and reversed in part the Superior Court Judgment by excluding specific non-stipulating parties (the Cardozo Group) from the Superior Court Judgment and at the same time affirming it as to the stipulating parties. The decision also remanded the issue of the amount of transferable production rights for Jess Ranch Water Company back to the Superior Court for a new determination.

The MWA board voted in June 1998 to seek California Supreme Court Review of the Appellate Court's decision. A petition for review was filed with the Supreme Court in July 1998 and the Supreme Court granted review of the case on August 26, 1998. Oral

arguments were heard by the Supreme Court on June 5, 2000 and its opinion was issued on August 21, 2000.

The Supreme Court's opinion affirmed in part and reversed in part the June 1, 1998 opinion of the Fourth District Court of Appeal. The Supreme Court affirmed the Court of Appeal's decision "in all respects," except it reversed the Court of Appeal decision as to the Jess Ranch Water Company. The Court of Appeal had affirmed the Judgment as to the stipulating parties but had reversed it as to the Cardozo Appellants and as to Jess Ranch Water Company. The Court of Appeal opinion essentially excluded the Cardozo Appellants from the Stipulated Judgment, including the Judgment's assessment provisions. Further, the Court of Appeal granted Judgment to the Cardozo Appellants in the form of injunctive relief to protect their riparian and overlying water rights to the current and prospective reasonable and beneficial need for water on their respective properties.

Effective August 6, 2002 the Cardozo appellants and MWA, on behalf of the stipulating parties, reached agreement regarding the Cardozo appellants' water rights. Consistent with the ruling from the California Supreme Court in this case, Cardozo Group's right to pump water from the ground underneath their respective lands for the current and prospective reasonable and beneficial need for water on their respective properties was recognized by the Stipulating parties. Further, to settle all outstanding issues in connection with the Cardozo Group water rights, MWA and Cardozo agreed that "if the parties who stipulated to the Judgment are in full compliance with the Judgment there shall be a rebuttable presumption that the Cardozo Appellants' water rights are not being interfered with."

In addition, all remaining water rights issues related to Jess Ranch Water Company and the Stipulating Parties were settled on August 16, 2002. Stipulation for Intervention and Entry of Judgment for Jess Ranch Water Company was filed in Riverside County Superior Court on August 23, 2002.

Summary of the Judgment after Trial

For purposes of defining and implementing a physical solution, the Mojave Basin Area consists of five distinct but hydrologically interrelated "Subareas". Each Subarea was found to be in overdraft to some extent due to the use of water by all of the producers in that Subarea. In addition, some Subareas were found to historically have received at least a part of their natural water supply as water flowing to them from upstream Subareas either on the surface or as subsurface flow. To maintain that historical relationship, the average annual obligation of any Subarea to another is set equal to the estimated average annual natural flow (excluding storm flow) between the Subareas over the 60 year period 1930-31 through 1989-90. If the Subarea obligation is not met, producers of water in the upstream Subarea must provide Makeup Water to the downstream Subarea.

To maintain proper water balances within each Subarea, the Judgment establishes a decreasing Free Production Allowance ("FPA") in each Subarea during the first five years, and provides for the Court to review and adjust, as appropriate, the FPA for each

Subarea annually thereafter. The FPA is allocated among the Producers in the Subarea based on each Producer's percentage share of the FPA. All water produced in excess of any Producer's share of the FPA must be replaced by the Producer, either by payment to the Watermaster of funds sufficient to purchase Replacement Water, or by transfer of unused FPA from another Producer.

Each Producer's percentage share of FPA in a Subarea was determined by first verifying the maximum annual water production (termed Base Annual Production or "BAP") for each Producer during the five year, 1986-90, Base Period and then calculating each Producer's percentage share of the total of all such BAP in the Subarea. All such percentage allocations are of equal priority.

All Producers in each Subarea are allowed to produce as much water as they need annually to meet their requirements, subject to compliance with the Physical Solution set forth in the Judgment. An underlying assumption of the Judgment is that sufficient water will be made available to meet the needs of the Basin in the future from a combination of natural supply, imported water, water conservation, water reuse and transfers of FPA among Producers.

Special provisions for environmental protection are included in the Judgment, including the creation of a Biological Resources Trust Fund. The funds are provided to secure a water supply in the event that groundwater levels within specific areas are not maintained sufficient to support existing riparian vegetation.

Basin Overdraft

The Mojave River Groundwater Basin combines 31 smaller groundwater basins and sub basins along the Mojave River. The Department of Water Resources' official departmental bulletins, California's Groundwater Bulletin 118 Updated 2003 and Bulletin 160, The California Water Plan Update 2009 states that the Mojave Groundwater Basin has experienced overdraft since the early 1950s.¹⁹ In an effort to eliminate long-term overdraft conditions, the Mojave Basin Judgment directed MWA to manage conservation and recharge the basin with supplemental water. MWA has reduced allotments to purveyors each year and has recharged the Mojave River Basin in an effort to eliminate overdraft.

As generally described in the 2009/10 Mojave Watermaster Report²⁰, water levels within the Alto Subarea in which Adelanto lies, are segregated for reference purposes, into three geographic areas as follows: (1) the Western portion, which is generally west of the Mojave River (the river is included in the western portion); (2) the Eastern portion, which is generally east of the Mojave River; and (3) the Alto Transition Zone. Alto water levels

¹⁹ The California Water Plan Update 2009 is available on DWR's website at: http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v3_southlahontan_cwp2009.pdf; references to groundwater challenges can be found in the Volume 3 Regional Update for the South Lahontan Region

²⁰ Information from MWA 17th Annual Water Master Report for the Water Year 2009/10, Appendix B; report available at: <http://www.mojavewater.org/home/watermaster/documents/17AR0910.pdf>

near the river are relatively stable exhibiting seasonal variation, rising in winter and falling in summer. Wells near the river also indicate rising and falling water levels, which is consistent with available recharge from storms. Under current pumping conditions and long term precipitation, it is expected that wells near the river will remain stable. Water levels in the western portion of Alto have exhibited declines consistent with locally 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. Continued pumping in depleted areas of the regional system may result in long local negative impacts such as declining yields and water quality problems. However, the Watermaster is not aware of any widespread problems in the regional system due to the falling water table. The relative stability of near river water levels and water levels in the Transition Zone indicate hydrologic stability in the relationship between Alto and the downstream Subareas.

Basin Management Strategies

Since the Mojave Basin Judgment, MWA has invested in a groundwater replenishment system (recharge facilities) and groundwater monitoring to effectively manage the basin.

- Groundwater Replenishment System – Since 2006, MWA has used the Mojave River Pipeline to recharge water to the Mojave River Basin. The pipeline can deliver up to 45,000 AFY to the Mojave Basin to offset growing depletion of natural supplies. The pipeline runs approximately 76 miles from the California Aqueduct to MWA’s recharge sites. MWA currently operates four recharge sites located at Hodge, Lenwood, Daggett/Yermo, and Newberry Springs. They provide the ability to recharge SWP water into subareas where replacement water is purchased. They also provide MWA with the ability to bank excess State Project Water.²¹
- Treated Wastewater Recharging – Treated wastewater imports from outside MWA are also recharged into the Mojave River Groundwater Basin. Wastewater imports from the Crestline Sanitation District and Lake Arrowhead Community Services District are imported to the Alto Subarea, and effluent from the Big Bear Area Regional Wastewater Agency is imported to the Este Subarea. These wastewater imports comprise a relatively small volume in comparison to the total water used within the MWA service area.
- Groundwater Monitoring – MWA maintains a comprehensive groundwater monitoring program to track dynamic conditions including groundwater production, storage, elevations, and quality. The program consists of over 900 monitoring wells and tracks water production within each of its five subareas. As previously noted, Adelanto lies within the Alto subareas. As previously noted, the Alto subarea is relatively stable and, as a whole, appears to be in regional balance, although portions of the subarea have shown declining yields.

²¹ Final MWA 2010 UWMP dated June 2011

MWA Groundwater Management Plan²²

Assembly Bill 3030 (AB 3030) passed by the California legislature in 1992 allows local agencies to develop Groundwater Management Plans (GWMPs). AB 3030 declares groundwater to be a valuable resource that should be carefully managed to ensure its safe production and quality. The legislation also encourages local agencies to work cooperatively to manage groundwater resources within their jurisdiction. Senate Bill 1938 (SB 1938) was passed by the Legislature September 16, 2002 and made changes and additions to sections of the Water Code created by AB 3030.

MWA's 2004 Regional Water Management Plan (RWMP), adopted on February 24, 2005 by Resolution 798-05, also serves as MWA's GWMP as it contains all the relevant components related to Groundwater Management Plans in California Water Code Sections 10750-10753.10., as well as the components recommended by DWR in California's Groundwater, Bulletin 118 (DWR, 2003).²³ The 2004 RWMP Update (refer to Appendix E) both complements and formalizes a number of existing water supply and water resource planning and management activities in the MWA service area that overlies several groundwater basins, as defined by DWR in Bulletin 118.

As part of the 2004 RWMP Update, the following Basin Management Objectives (BMO) were established to plan water supplies through 2020:

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

²² Information in this section of the UWMP has been extracted from the Final MWA 2010 UWMP dated June 2011

²³ Bulletin 118 can be found on DWR's website at:
<http://www.water.ca.gov/groundwater/bulletin118/update2003.cfm>

- Ensuring that costs incurred to meet beneficial uses provide the greatest potential return to beneficiaries of the project(s);
- Avoiding redirected impacts; and
- Identifying sustainable funding sources including consideration of affordability

Balancing future water demands with available supplies will increase water supply reliability by preventing continued overdraft of the groundwater. With groundwater storage stabilized, there will be groundwater available during surface water supply shortages and delivery interruptions. With a balanced basin, groundwater elevations will be relatively stable. This will reduce the potential for land subsidence and associated aquifer compaction.

The adopted 2004 RWMP and GWMP also identified several water supply projects and management actions to provide a means to achieve the BMOs. Management actions can be grouped into the following seven major elements:

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

City of Adelanto Groundwater Wells

The City has nine currently active potable groundwater wells, one non-potable well and seven inactive wells. The City's active wells vary in depth from 39 feet to 569 feet, with production of the potable water wells varying from 181 gallons per minute (gpm) to 1,074 gpm. The total estimated potable water system production capacity is approximately 4,728 gpm, as shown in Table 2.2-2. Some of the current inactive wells may be returned to service in future years. All wells are located within the City of Adelanto accessing the Mojave River Groundwater Basin (the precise locations of the wells cannot be divulged for security purposes).

**Table 2.2-2
City of Adelanto Wells**

Well	Date Drilled	MWA Subarea	Well Depth (feet)	Capacity (gpm)	Status
1G	1961	Alto	355	181	Active
2	1981	Alto	665	212	Inactive
2G	1977	Alto	75	783	Inactive
3G2	1982	Alto	74	287	Active
4	1985	Alto	569	684	Active
4G	1969	Alto	39	1,074	Active
5A	2001	Alto	352	325	Active
5G	1979	Alto	74	NA	Inactive
6	1988	Alto	461	274	Active
6G	pre 1950	Alto	74	227	Inactive
7	1989	Alto	510	300	Active
8A	1991	Alto	658	518	Inactive
8G2	2003	Alto	180	754	Active
14	1995	Alto	64	250	Inactive
14A	2004	Alto	360	849	Active
15	2005	Alto	905	250	Inactive
16	2008	Alto	890	800	Active Non-Potable
Total (gpm)	-	-	-	4,728	-

Source: 2007 Adelanto Water Master Plan; Well 15 & 16 information provided by City Staff. Total capacity includes only active potable water capacity.

Table 2.2-3 summarizes the amount of groundwater pumped by each of the City's wells for the last five water years.

**Table 2.2-3
Amount of Groundwater Pumped from Potable Wells in AFY**

Well No.	2005	2006	2007	2008	2009	2010
1G	261	287	278	279	218	42
2	300	82	0	0	0	0
2G	656	570	315	52	0	0
3G2	125	553	420	18	659	505
4	618	531	242	462	564	487
4G	1,296	384	0	1,091	358	1,253
5A	257	365	505	548	523	468
5G	167	267	178	0	0	0
6	411	412	383	725	394	291
6G	122	153	38	0	0	0
7	451	436	434	459	364	346
8A	791	325	112	417	565	241
8G2	721	1,039	1,110	1,181	1,162	838
14	285	0	0	0	0	0
14A	356	1,140	655	519	666	215
15	0	0	0	0	0	0
Total	6,817	6,545	4,670	5,751	5,472	4,684

Source: Data provided by City staff; six-year production totals differ slightly (0.8% higher) from MWA totals

Table 2.2-4 provide estimated overall groundwater production projections for the years 2015 through 2035. Projections were estimated based on supply projections provided by MWA, anticipated area growth in population and historical production records from the City’s wells. Projections by individual well have not been provided for the following reasons:

1. Well Service Life – As noted in Table 2.2-2, several of the City’s existing wells have been in service for over 25. The typical service life of a potable water production well is about 50 years. That being the case, it is likely some of these wells may be removed from service prior to the year 2035 and replaced with new wells constructed in future years; and
2. Not All Wells are Used Every Year – As is evident from Table 2.2-3, not all wells are utilized for production purposes in all years. Some of the currently inactive wells may be returned to service in future years while other currently active wells may be removed from service.

**Table 2.2-4
Active Well Production Projections in AFY**

Source	2015	2020	2025	2030	2035
Groundwater	6,537	8,122	9,443	10,763	12,084

2.2.2 Recycled Water

The City of Adelanto does not currently use recycled water. However, the City is currently upgrading its 1.5 million gallon per day (MGD) wastewater treatment plant to 4.0 MGD. The upgraded plant will produce treated water meeting California’s Title 22 requirements, which can be used for irrigation of lawns, public parks and other greenbelt areas. According to the City’s 2007 Sewer Master Plan, the wastewater treatment plant will ultimately be upgraded to a capacity of 8.0 MGD when the City nears build-out. Additional detailed information on the proposed use of recycled water can be found in Section 9.0 of this UWMP.

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3 WATER QUALITY

3.1 WATER QUALITY OF EXISTING SOURCES

As required by the Safe Drinking Water Act, which was reauthorized in 1996, the City provides annual Water Quality Reports to its customers; also known as Consumer Confidence Reports (CCR). This mandate is governed by the Environmental Protection Agency (EPA) and the California Department of Public Health (CDPH) to inform customers of their drinking water quality. In accordance with the Safe Drinking Water Act, the City monitors a number of regulated and unregulated compounds in its water supply. As noted in the City's most recent (2009) CCR. "*no additional treatment of your water is necessary to ensure its safety.*"²⁴

3.1.1 Imported Water

As previously noted, during normal operation of the water system, there are no transfer exchanges of imported water within the City's service area. The City does not typically import water from either of its two emergency interties with VWD.

Although Adelanto does not supply imported water to its customers, if the City exceeds its FPA and purchases replacement water from MWA, then MWA will recharge the basin with imported SWP water and recycled wastewater. The City's usage therefore has a direct effect on the volume of water that MWA recharges into the basin. The imported SWP water and wastewater are significant factors in the water quality of the Mojave River Groundwater Basin. Since the Mojave River Basin is essentially a closed basin, many contaminants from imported water will remain in the basin.

3.1.2 Groundwater

MWA maintains a comprehensive groundwater monitoring program consisting of over 900 monitoring wells in their service area. MWA's 2004 Regional Water Management Plan (RWMP)²⁵ indicates there are water quality problems affecting drinking water supplies throughout the Mojave River Basin area. Key contaminants include (1) salinity, (2) arsenic, (3) chromium VI, (4) nitrates, (5) methyl tertiary butyl ether (MTBE) (6) manganese, and (7) iron. Each of these contaminant constituents of concern and is addressed in further detail below.

Salinity

Because the Mojave River Basin is essentially a closed basin, salinity is a concern because salt contained in imported recycled wastewater and SWP supplies remain in the

²⁴ Per the City's 2009 Annual Water Quality Report, available at:
<http://www.ci.adelanto.ca.us/vertical/Sites/%7BB5D4A1FE-8A01-4BEF-B964-5A44B9339C72%7D/uploads/%7B619A2BF2-903C-4D24-97B6-891E376132E4%7D.PDF>

²⁵ MWA.s RWMP is available on their website at:
<http://www.mojavewater.org/Reports/RegionalandLocalizedStudies/RegionalandLocalizedDocuments/2004RegionalWaterManagementPlanFinal.pdf>

basin. Water from the SWP generally is low in salinity, with Total Dissolved Solids (TDS) averaging 250 mg/L over the long term in water supplied through the East Branch and 325 mg/L in water supplied through the West Branch. However, salinity in wastewater imports can be high.

Because SWP water and wastewater imports to the Mojave River Basin will be long term and persistent, MWA and the Lahontan regional Water Quality Control Board completed a cooperative study in 2007 to address salt balance within the MWA service area. The report basically showed that importation of SWP water mitigated the long-term effects of increased TDS primarily caused by population increases and the associated larger volumes of wastewater entering into the basins. MWA monitoring from 2005 to 2009 indicated TDS levels of 211.72 mg/L in the Alto Subarea.²⁶

According to the City's 2009 CCR, TDS levels in Adelanto varied from 330 to 446 mg/L and averaged 397 mg/L.

Arsenic

Arsenic, which has been linked to certain cancers and skin conditions, is a naturally occurring element found in rocks, soil, water, and air. Arsenic from these sources can enter the water supply through the natural erosion of rocks, as well as the dissolution of ores and minerals. Arsenic can also be found in wood preservatives, alloying agents, certain agricultural applications, semi-conductors, paints, dyes, and soaps. Agriculture and industrial discharges from these sources can contribute to elevated levels of arsenic in drinking water supplies.

The maximum contaminant level (MCL) for arsenic in domestic water supplies was lowered to 10 µg/L (from 50 µg/L), with an effective date of January 2006 in the federal regulations and an effective date of November 2008 in California's regulations for both groundwater and surface water supplies. In April 2004, based on reported lung and urinary bladder cancer risk data, California's Office of Environmental Health Hazard Assessment (OEHHA) set a public health goal (PHG) for arsenic of 0.004 µg/L.

Monitoring results reported on CDPH's website for the period 2002-2005 showed arsenic is ubiquitous in drinking water sources, reflecting its natural occurrence. Those results also show many sources have arsenic levels above the 10 µg/L MCL (e.g., Southern California drinking water sources containing arsenic concentrations over 10 µg/L include San Bernardino (64 sources), Los Angeles (48 sources), Riverside (26 sources), Orange (4 sources), and San Diego (5 sources)).²⁷

According to the City's 2009 CCR, arsenic levels in Adelanto varied from 4.9 to 8.8 µg/L and averaged 6.2 µg/L, all of which are below the MCL. However, in 2010 arsenic was detected in Well 8A with a concentration of 39 µg/L. That well has now been removed

²⁶ Per Final MWA 2010 UWMP dated June 2011

²⁷ Per CDPH website: <http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Arsenic.aspx> - note the numbers reported on this site can change as the site is updated.

from service and will remain out of service until appropriate mitigation measures can be taken or the contaminant level drops below the MCL.

Chromium

Like arsenic, chromium is a naturally occurring element found in rocks, soil, plants, and animals. Chromium III is typically the form found in soils and is an essential nutrient that helps the body use sugar, protein, and fat. Chromium VI is used in a number of industrial applications including electroplating, stainless steel production, leather tanning, textile manufacturing, dyes and pigments, wood preservation and as an anti-corrosion agent. Chromium occurs naturally in deep aquifers and can also enter drinking water through industrial discharges. In drinking water, chromium VI is very stable and soluble, whereas chromium III is not very soluble. Chromium VI is the more toxic form and is known to cause lung cancer in humans when inhaled, but the human health effects from ingestion are still a subject of conjecture.

There are no current drinking water standards for chromium VI. Total chromium (including chromium III and chromium VI) is regulated in California with an MCL of 50 µg/L. On August 20, 2009, the OEHHA released a draft PHG of 0.06 µg/L for chromium VI in drinking water. The PHG is a health-protective, non-regulatory level that will be used by CDPH in its development of an MCL. CDPH will set the eventual MCL as close to the PHG as technically and economically feasible.

According to the City's 2009 CCR, chromium levels in Adelanto were non-detectable.

Nitrates

Nitrates are one of the most common and widespread contaminants in groundwater supplies. High nitrate levels in water are typically associated with septic systems, confined animal feeding operations, or fertilizers. Nitrates are also present in treated wastewater. Nitrate (NO₃⁻) is a water-soluble molecule made up of nitrogen and oxygen. It is formed when nitrogen from ammonia or other sources combines with oxygenated water.

Nitrates can interfere with the ability of red blood cells to carry oxygen. Nitrates in drinking water have been known to cause methemoglobinemia, especially in infants. Some scientific studies have found evidence suggesting that women who drink nitrate-contaminated water during pregnancy are more likely to have babies with birth defects. Also, some experts believe that long-term ingestion of water high in nitrate may increase the risk of certain types of cancer.

The maximum contaminant level (MCL) for nitrate in domestic water supplies are²⁸:

- 45 (mg/L) for nitrate as NO₃ (equivalent to 10 mg/L for nitrate as N)

²⁸ Per CDPH website: <http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Nitrate.aspx> - note the numbers reported on this site can change as the site is updated.

- 10 mg/L for nitrate plus nitrite as N
- 1 mg/L for nitrite as N

Monitoring data sent to CDPH from 2002 to 2005 showed that many sources in California have high nitrate levels above MCLs. Nitrate as NO₃ was detected at least once above its MCL in 731 sources (San Bernardino with 82 sources), nitrate + nitrite as N was detected at least once above its MCL in 169 sources (San Bernardino with 38 sources), and nitrite as N was detected at least once above its MCL in 21 sources. However, MWA sampling data from 2005 to 2009 indicates an average NO₃ level of 6.09 mg/L for the Alto Subarea, which is well below the MCL.²⁹

According to the City's 2009 CCR, Nitrate levels in Adelanto varied from non-detect to 21 mg/L and averaged 0.525 mg/L, all of which are well below the MCL. Nitrate measured as NO₃ was non-detectable.

Methyl Tertiary-Butyl Ether (MTBE)

MTBE was the primary oxygenate in virtually all the gasoline used in California, prior to discovering it contaminated groundwater supplies and was found in surface water supplies. Following that discovery, MTBE was banned in California as of December 31, 2003 and was subsequently replaced by ethanol which is now the primary oxygenate in use. CDPH has adopted a primary MCL of 13 µg/L for MTBE based on carcinogenicity studies in animals. MTBE has a California secondary MCL of 5 µg/L, which was established based on taste and odor concerns.³⁰

MTBE is a serious threat to groundwater because it is very soluble in water and has low affinity for soil particles, so it moves quickly into the groundwater. Unfortunately, MTBE is also resistant to chemical and microbial degradation in water, thereby making treatment more difficult than that employed to remove other gasoline components. However, a combination of an advanced oxidation process (typically ozone and hydrogen peroxide) followed by granular activated carbon has been found to be effective in reducing the levels of these contaminants.

MWA's 2004 Regional Management Plan indicates that MTBE is not a concern in the Alto Subarea. Improved underground storage tank requirements and monitoring procedures, as well as the phase-out of MTBE as a fuel additive, will decrease the likelihood of MTBE groundwater problems in the future.

Manganese

Manganese is a required nutrient; however, manganese at very high levels can pose a neurotoxic risk. Children are considered to be particularly susceptible to possible effects of high levels of manganese exposure because they absorb and/or retain more manganese than adults. Manganese is regulated by a 50

²⁹ Per Final MWA 2010 UWMP dated June 2011

³⁰ Per CDPH website: <http://www.cdph.ca.gov/certlic/drinkingwater/Pages/MTBE.aspx> - note the numbers reported on this site can change as the site is updated periodically

µg/L secondary maximum contaminant level (MCL). Monitoring data sent to CDPH showed that about 20 percent of drinking water sources monitoring for manganese have reported detections greater than the 0.05-mg/L secondary MCL.³¹

MWA sampling data from 2005 to 2009 indicates Manganese levels of 5.42 µg/L for the Alto Subarea, which is well below the MCL.³²

According to the City's 2009 CCR, all Manganese samples taken in Adelanto were non-detect.

Iron

Iron in drinking water is typically not considered hazardous to health and is considered a secondary or aesthetic contaminant. The MCL for iron in water is currently 300 µg/L and is based on taste and appearance, rather than detrimental health effects. MWA sampling data from 2005 to 2009 recorded iron levels of 103.89 µg/L for the Alto Subarea, which is well below the MCL.³³

According to the City's 2009 CCR, Iron levels in Adelanto varied from non-detect to 110 µg/L, all of which were below the MCL.

Groundwater Quality Protection

In recognition of the serious threat posed by groundwater contamination, MWA implements groundwater protection activities to maintain the groundwater and the aquifer and ensure a reliable high quality supply. These activities include water quality monitoring, managing recharge site activities, hazardous materials response, and education and coordination with local agencies.

3.2 WATER QUALITY EFFECT ON WATER MANAGEMENT STRATEGIES AND SUPPLY RELIABILITY

The previous section summarized the general water quality issues that may be associated with water extracted from the Alto Subarea. As noted in MWA's 2010 UWMP³⁴ "Currently, water quality does not materially affect water supply reliability in the region."

The City has not experienced any significant water quality problems in the past and does not anticipate any significant changes in the future, due in large part to the mitigation actions undertaken by Mojave Water Agency.

³¹ Per CDPH website: <http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Manganese.aspx> - note the numbers reported on this site can change as the site is updated periodically

³² Per MWA's Final 2010 UWMP dated June 2011

³³ Ibid.

³⁴ Ibid.

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4 WATER RELIABILITY PLANNING

4.1 RELIABILITY OF WATER SUPPLIES

The Southern California region faces a challenge in satisfying demands and securing firm water supplies. Increased environmental regulations and the competition for water from outside the region have exacerbated these challenges. Continued population and economic growth has also led to increased regional water demands, which results in larger demands on local supplies.

Reliability is a measure of a water system's expected success in managing water shortages. Good reliability planning requires accurate answers to the following questions:

1. What are the expected frequency and severity of shortages?
2. How will additional water management measures likely affect the frequency and severity of shortages?
3. How will available contingency measures reduce the impact of shortages when they occur?

This section provides a description of the City's efforts in maintaining an adequate and reliable water supply and MWA's efforts in maintaining the region's groundwater supply in the Mojave Basin Area. In normal years, the City obtains all of its water supply from local groundwater aquifer. Given the City's total reliance on groundwater, the reliability of the City's water supply is thus entirely dependent on the reliability of the groundwater in the Mojave River Basin managed by MWA.

Almost all of the water used within MWA's service area is supplied by pumped groundwater. To supplement the local groundwater supplies, MWA recharges the groundwater basins with SWP imported water, natural surface water flows, wastewater imports from outside MWA's service area, agricultural depletion from storage, and return flow from pumped groundwater not consumptively used. MWA's sources are only used to recharge the groundwater basins and are not supplied directly to any retailers, with the exception of two power plants, the High Desert Power Project and the LUZ Solar Plant.

MWA is actively operating recharge sites along their Mojave River Pipeline and Morongo Basin Pipelines. Their current recharge sites include Hodge, Lenwood, Daggett, Newberry Springs, and Rock Springs Outlet. These recharge sites provide MWA with the ability to recharge SWP water into subareas where replacement water is purchased, as well as the ability to bank excess SWP water, when available.

State funding has been made available, through California voters' approval, to increase reliability of state water supplies. In March 2000, California voters approved Proposition 13, which authorized the State to issue \$1.97 billion of its general obligation bonds for water projects. Additionally, California voters approved Proposition 50 in November 2002 and Proposition 84 in November 2006, which authorized the issuance by the State

of \$3.4 billion and \$5.4 billion, respectively, of general obligation bonds for water projects. Types of water projects eligible for funding under Propositions 13, 50, and 84 include water conservation, groundwater storage, water treatment, water quality, water security and Colorado River water management projects.

4.1.1 Regional Agencies and Water Reliability

Mojave Water Agency (MWA)

As noted in Mojave Water Agency's Final 2010 UWMP dated June 2011, MWA was formed to manage water resources within the Agency's service area, which encompasses the City of Adelanto. In this capacity, MWA has been planning and implementing projects to increase water supply reliability and prevent future water shortages. As previously noted, MWA is a State Water Project (SWP) contractor and has a contract Table A amount of 82,800 AF. This water is diverted from the California Aqueduct and distributed to recharge sites throughout the area to replace groundwater withdrawn by retailers. Deliveries from the SWP are variable and MWA's full Table A amount is not available every year. During dry and multiple dry years, it is expected that SWP deliveries will be significantly reduced.

State Water Project (SWP)

The SWP is owned and operated by the California Department of Water Resources. The reliability of the SWP impacts MWA member agencies' ability to plan for future growth and supply. On an annual basis, each of the 29 SWP contractors, including MWA, request an amount of SWP water based on their anticipated yearly demand. In most cases, MWA's requested supply is equivalent to its full Table A Amount,³⁵ currently at 82,800 AFY, and in certain wetter years additional supply may be made available. The full Table A amount is defined as the maximum amount of imported water to be delivered and is specified in the contract between the DWR and the contractor. After receiving the requests, DWR assesses the amount of water supply available based on precipitation, snow pack on northern California watersheds, volume of water in storage, projected carry over storage, and Sacramento-San Joaquin Bay Delta regulatory requirements. Due to the uncertainty in water supply, contractors are not typically guaranteed their full Table A Amount, but instead, are allocated a percentage of that amount based on the available supply. Table 4.1 lists the historical SWP deliveries to MWA and the delivery's percentage compared to the full Table A amount. Once the percentage is set early in the water year, the agency can count on that amount of supply

³⁵ Two types of deliveries are assumed for the SWP contractors: Table A and Article 21. The Table A Amount is the contractual amount of allocated SWP supply, set by percentage amount annually by DWR; it is scheduled and uninterruptible. Article 21 water refers to the SWP contract provision defining this supply as water that may be made available by DWR when excess flows area available in the Delta (i.e., Delta outflow requirements have been met, SWP storage south of the Delta is full, and conveyance capacity is available beyond that being used for SWP operations and delivery of allocated and scheduled Table A supplies). Article 21 water is made available on an unscheduled and interruptible basis and is typically available only in average to wet years, generally only for a limited time in the later winter.

or more in the coming year. The percentage is typically set conservatively and is then held or adjusted upwards later in the year based on a reassessment of precipitation and snow pack.

**Table 4.1-1
SWP Deliveries to MWA (AF)³⁶**

Year	Full MWA Table A Amount	Actual SWP Delivery to MWA	MWA Percent of Full Table A Amount	Final Statewide SWP Allocation
1981	22,843	0	0%	100%
1982	34,300	0	0%	100%
1983	36,700	24,489	67%	100%
1984	39,000	0	0%	100%
1985	41,400	0	0%	100%
1986	43,700	0	0%	100%
1987	46,000	0	0%	100%
1988	48,500	0	0%	100%
1989	50,800	0	0%	100%
1990	50,800	0	0%	100%
1991	50,800	3,423	7%	35%
1992	50,800	10,674	21%	45%
1993	50,800	11,487	23%	100%
1994	50,800	17,652	35%	50%
1995	50,800	8,740	17%	100%
1996	50,800	7,427	15%	100%
1997	50,800	14,040	28%	100%
1998	75,800	5,892	78%	100%
1999	75,800	8,071	11%	100%
2000	75,800	11,362	15%	90%
2001	75,800	4,320	6%	39%
2002	75,800	4,218	6%	70%
2003	75,800	39,242	52%	90%
2004	75,800	12,840	17%	65%
2005	75,800	33,323	44%	90%
2006	75,800	33,927	45%	100%
2007	75,800	20,064	26%	60%
2008	75,800	17,007	22%	35%
2009	75,800	21,528	28%	40%
2010	82,800	22,364	27%	55%
2011	82,800	66,240	80%	NA

³⁶ Full Table A data extracted from DWR contracts with MWA available on DWR's website at: http://www.water.ca.gov/swpao/docs/wsc/MWA_O_C.pdf; SWP Delivery data extracted from MWA's Final 2010 UWMP dated June 2011, Table 3-2; 2010 water delivery data extracted from MWA website at, <http://www.mojavewater.org/regionalInformation/WaterDeliveries.aspx> ; 2011 data represents estimated delivery based on initial allocation of 25% plus the subsequent notices to SWP Contractors in December 2010, January 2011, March 2011 and April 2011, increasing the allocation to 50%, 60%, 70% and 80%, respectively. MWA's current full Table A amount is 82,800 AFY; This will increase to 85,800 AFY in 2015 and 89,800 AFY between 2020 and 2035. Increases in MWA's Table A amount between 2009 and 2035 are from a 14,000 AFY purchase from Dudley Ridge Water District.

Litigation filed by several environmental interest groups (NRDC v. Kempthorne (Case No. 05CV01207-OWW-GSA); Pacific Coast Federation of Fishermen's Associations v. Gutierrez (Case No. 06CV00245-OWW)) has alleged that certain biological opinions and incidental take permits granted by state and federal agencies for water permits in the Sacramento-San Joaquin Bay Delta inadequately analyzed impacts on species listed as endangered under the Federal Endangered Species Act (ESA). In 2007, Federal District Judge Wanger issued a decision, finding the United States Fish and Wildlife Service's biological opinion for Delta smelt to be invalid. Judge Wanger issued an Interim Remedial Order and Findings of Fact and Conclusions of Law requiring that the SWP and Central Valley Project (CVP) operate according to certain specified criteria until a new biological opinion for the Delta smelt was issued by the United States Fish and Wildlife Service.

DWR bi-annually prepares a report on the current and future SWP water supply conditions, assuming no significant improvements are made to convey water past the Sacramento-San Joaquin Delta (Delta) or to store the more variable run-off expected with climate change. The latest 2009 State Water Project Delivery Reliability Report (2009 Report) is the most current of these reports dated August 2010. That report shows a continuing erosion of the ability of the SWP to deliver water. For current conditions, the dominant factor for these reductions is the restrictive operational requirements contained in the federal biological opinions. For future conditions, it is these requirements and the forecasted effects of climate change.

Deliveries estimated for the 2009 Report are reduced by the operational restrictions of the biological opinions issued by the U.S. Fish and Wildlife Service in December 2008 and the National Marine Fisheries Service in June 2009 governing the SWP and CVP operations. To illustrate the effect of these operational restrictions, the median value estimated for the primary component of SWP Table A deliveries for Current Conditions in the 2005 Report is 3,170 thousand acre feet (TAF); in the 2007 Report it is 2,980 TAF; and in the 2009 Report it is 2,680 TAF; for a reduction of almost 500 TAF. For the 2009 studies, the changes in run-off patterns and amounts are included along with a potential rise in sea level. Sea level rise has the potential to require more water to be released to repel salinity from entering the Delta in order to meet water quality objectives established for the Delta. The effect of the operational restrictions in addition to the incorporation of potential climate change impacts amounts to an estimated reduction of 970 TAF when the median value for annual SWP deliveries for Future Conditions in the 2005 Report (3,750 TAF) is compared to the updated value in the 2009 Report (2,600 TAF). DWR has altered operations of the SWP to accommodate species of fish listed under the Federal and California Endangered Species Acts (ESAs). These changes in project operations have influenced the manner in which water is diverted from the Bay-Delta and SWP deliveries to the southern part of the State. Restrictions on Bay-Delta pumping beginning in 2008 under the Interim Remedial Order in NRDC v. Kempthorne have resulted in reduced deliveries of SWP water to MWA.

To create a systemic solution to the issues facing the Delta (which have existed since the 1970's), former Governor Schwarzenegger created the Delta Vision process, which is

aimed at identifying long-term solutions to the conflicts in the Bay-Delta, including natural resource, infrastructure, land use and governance issues. The Delta Vision Blue Ribbon Task Force presented findings and recommendations for a sustainable Delta as a healthy ecosystem and water supply source on January 17, 2008. In addition, state and federal resource agencies and various environmental and water user entities are currently engaged in the development of the Bay-Delta Conservation Plan, which is aimed at addressing ecosystem needs and securing long-term operating permits for the SWP.

The issues, such as the recent decline of some fish species in the Delta and surrounding regions and certain operational actions in the Delta, may impact MWA's water supply from the Delta. SWP operational requirements may be further modified through the consultation process for new biological opinions for listed species under the Federal ESA or from the California Department of Fish and Game's actions regarding the California ESA.

Decisions in current or future litigation, listings of additional species (such as the longfin smelt), or new regulatory requirements could adversely affect SWP operations in the future by requiring additional export reductions, releases of additional water from storage, or other operational changes impacting water supply operations.

Imported Water Supply Availability

As previously noted, MWA has a current maximum Table A SWP entitlement to 82,800 AFY, which will increase to 85,800 AFY in 2015 and 89,800 AFY in 2020. These SWP deliveries are subject to DWR reductions based on climatic conditions, regulatory and operational constraints and the total amount of water requested by the 29 SWP contractors. MWA uses their SWP deliveries primarily for recharging the Mojave Groundwater Basin.

DWR periodically issues State Water Project Delivery Reliability Reports addressing future supply reliability.³⁷ These biennial reports are issued to assess the impacts of varying conditions on the SWP supply reliability both in the short-term as well as the long-term. The current 2009 report shows that the primary component of SWP deliveries (as defined in Table A) will be less under current and future conditions as compared with the 2007 projections. The 2009 report discusses the following areas of significant uncertainty with respect to future SWP supply reliability:

1. Restrictions on SWP and Central Valley Project operations due to State and Federal biological legal ruling protecting endangered fish such as the Delta smelt and spring-run salmon;
2. Climate change and sea level rise, which are altering the hydrologic conditions in California; and

³⁷ The most recent State Water Project Delivery Reliability Reports was issued in 2009 and updated in August 2010 and is available on DWR's website at: <http://baydeltaoffice.water.ca.gov/swpreliability/>

3. The vulnerability of Delta levees to possible failure due to floods and earthquakes.

As noted in MWA's Final 2010 UWMP, the 2009 SWP Report shows a continuing erosion of the ability of the SWP to deliver water. For current conditions, the dominant factor for these reductions is the restrictive operational requirements contained in the federal biological legal opinions. Deliveries estimated for the 2009 Report are reduced by the operational restrictions of the biological opinions issued by the U.S. Fish and Wildlife Service in December 2008 and the National Marine Fisheries Service in June 2009 governing the SWP and Central Valley Project operations. The 2005 and 2007 SWP Reports were based on less restrictive operational rules.

In estimating future supply reliability, the 2009 SWP Report includes the potential effects of climate change. The changes in run-off patterns and amounts are included along with a potential rise in sea level. Sea level rise has the potential to require more water to be released to repel salinity from entering the Delta to meet established water quality objectives. The 2005 SWP Report did not include any of these potential effects. In the 2007 SWP Report, the changes in run-off patterns and amounts were incorporated into the analyses, but the potential rise in sea level was not.

The updated 2009 analyses indicate the SWP, using existing facilities operated under current regulatory and operational constraints and future anticipated conditions, and with all contractors requesting delivery of their full Table A amounts in most years, could deliver 60 percent of Table A amounts on a long-term average basis. DWR also prepared Delivery Reliability Reports (DRRs) for long-term average SWP supplies to individual SWP contractors based upon the unique conditions that impact each contractor. The DRR for MWA indicated average reliability would be 60 percent in 2009 and will increase to 61 percent in 2029. MWA's Final 2010 UWMP³⁸ projections for Table A SWP deliveries are summarized in Table 4.1-2 below. These projections are based SWP MWA's maximum Table A amounts from 2010 to 2035 and the supply reliability analyses provided in the 2009 SWP Report and associated DRR.

**Table 4.1-2
DWR's Estimated Future SWP Deliveries for MWA**

Supply	2010	2015	2020	2025	2030	2035
Percent of Full MWA Table A Amount	60%	60%	60%	60%	61%	61%
Anticipated Deliveries in AFY	49,680	51,480	53,880	53,880	54,778	54,778

The 2010 through 2025 values shown in Table 4-2-1 are based in DWR's 2009 – 2029 projections. The values shown for 2030 and 2035 are based on the DWR estimates for 2029. Although the 2009 Report presents an extremely conservative projection of SWP delivery reliability, it is nevertheless based on DWR's most up-to-date modeling and

³⁸ Refer to Table 3-4 in Final 2010 MWA UWMP

represents the best available information for future SWP deliveries. This information was therefore used in the preparation of MWA’s Final 2010 UWMP and has also been used in the preparation of Adelanto’s UWMP. Based on this information, MWA has concluded that sufficient supplies will be available in all future years to meet normal, single dry and multiple dry years demands of their member agencies (including the City of Adelanto) through 2035.

Groundwater Basin Supply Reliability and Safe Yield

As noted in Section 2 of this UWMP, Adelanto lies within an adjudicated basin under which Basin Annual Production and Free Production Allowances have been established. Additionally, a Production Safe Yield (PSY) is determined annually for each of the five previously referenced Subareas. The PSY for the Alto Subarea in which Adelanto lies is shown in Table 4.1-3.

**Table 4.1-3³⁹
Mojave Basin Alto Subarea Projected Groundwater Production in AFY**

Subarea	2010	2015	2020	2025	2030	2035
Alto	84,226	93,994	99,440	108,851	118,262	127,674

In their Final 2010 UWMP, MWA also notes the current (2009/10) BAP for the Alto Subarea was 116,412 AFY, the FPA was 74,534 AFY and the PSY was 69,862 AFY. MWA’s Final 2010 UWMP also projects net long-term Alto Subarea supply reliability in the amounts of 25,900 AFY for normal, single-dry and multiple-dry years. These figures compare with MWA’s net average annual long-term Alto Subarea water supply availability estimates of 34,700 AFY, 13,650 AFY, and 7,250 AFY for normal, single-dry and multiple dry years.⁴⁰

Based on this information, MWA’s concluded sufficient water supplies will exist to meet the demand of their member agencies through 2035 for all normal, single-dry and multiple dry years. While these findings are subject to future re-evaluation, they currently represent the best available information on which to base Adelanto’s 2010 UWMP.

SWP and MWA Water Transfer and Exchange Programs

California’s agricultural activities consume approximately 34 million acre-feet of water annually, which is 80 percent of the total water used for agricultural and urban uses and 40 percent of the water used for all consumptive uses. Voluntary water transfers and exchanges can make a portion of this agricultural water supply available to support the State’s urban areas. Such existing and potential water transfers and exchanges are an important element for improving the water supply reliability within MWA’s service area.

³⁹ Per Table 3-6 in MWA’s Final 2010 UWMP

⁴⁰ MWA 2004 Regional Water Management Plan, Tables 4-2, 4-3, and 4-4; the report is available at: <http://www.mojavewater.org/home/projects/documents/2004RegionalWaterManagementPlanFinal.pdf>

Also, as noted in their Final 2010 UWMP, MWA is currently exploring opportunities to purchase water supplies from other water agencies and sources. Such transfers, exchanges, and groundwater banking programs, are important elements to enhancing the long-term reliability of the total mix of supplies currently available to meet water demand. MWA has identified several transfer and exchange opportunities with the Metropolitan Water District of Southern California, Solano County Water Agency and other SPW contractors.⁴¹

Regional Water Quality Control Board – Lahontan Region 6

The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB or Regional Board) are responsible for the protection and, where possible, the enhancement of the quality of California's waters. The SWRCB sets statewide policy, and together with the Regional Boards, implements state and federal laws and regulations. Each of the nine Regional Boards adopts a Water Quality Control Plan or Basin Plan, which recognizes and reflects regional differences in existing water quality, the beneficial uses of the region's ground and surface waters, and local water quality conditions and problems.

The current Lahontan Basin Plan incorporates language from and replaces three earlier plans: the Lahontan Regional Board's 1975 *North and South Lahontan Basin Plans*, as amended through 1991, and the State Water Resources Control Board's 1980 *Lake Tahoe Basin Water Quality Plan*, as amended through 1989. The earlier plans were combined into a single plan which was adopted by the Lahontan Regional Board in November 1994 and which took effect upon approval by the California Office of Administrative Law in March 1995. The current Basin Plan also incorporates important provisions of the Tahoe Regional Planning Agency's *Water Quality Management Plan for the Lake Tahoe Region*.

Rather than simply a collection of abstract goals and policies, the Lahontan Region Basin forms the basis for the Regional Board's regulatory program. It sets forth water quality standards for the surface and ground waters of the Region, which include both designated beneficial uses of water and the narrative and numerical objectives which must be maintained or attained to protect those uses. It also identifies general types of water quality problems, which can threaten beneficial uses in the Region as well as required or recommended control measures for these problems. In some cases, it prohibits certain types of discharges in particular areas. The Basin Plan summarizes applicable provisions of separate State Board and Regional Board planning and policy documents and water quality management plans adopted by other federal, state, and regional agencies. The Basin Plan also summarizes past and present water quality monitoring programs, and identifies monitoring activities, which should be carried out to provide the basis for future Basin Plan updates as well as waste discharge requirements or conditional waivers. The Basin Plan is not only a resource for the Regional Board's technical staff, but also serves as an educational document for both staff and dischargers. Regional Board orders cite the Basin Plan's applicable water quality standards and prohibitions. The Lahontan Basin

⁴¹ Refer to Final MWA 2010 UWMP dated June 2011 for further details on transfers and exchanges

is also be used by other agencies in their permitting and resource management activities.⁴²

4.2 REGIONAL DEMAND AND SUPPLIES COMPARISON

MWA Supplies and Demands

As previously noted, Adelanto currently obtains all of its water supply from the local groundwater aquifer, which means the reliability of the City’s water supply is entirely dependent on the reliability of the groundwater in the Mojave River Basin. Table 4.2-1 shows the historic and projected total retail water demands within MWA’s service area. MWA’s projections assume moderate conservation and are further explained in MWA’s 2010 Urban Water Management Plan.

**Table 4.2-1
Mojave Water Agency Service Area Projected Water Demand (AFY)**

2005	2010	2015	2020	2025	2030	2035
166,280	151,885	163,161	170,496	181,740	192,969	204,181

Source: MWA Final 2010 UWMP, Table 2-3

MWA analyzed water demands in their service area to assess the region’s ability to satisfy demands during average, single-dry and multiple-dry years. Based on an analysis of more than 80 years of data, MWA determined historical averages as well as the most significant single and multiple dry year periods on which to base future projections. MWA’s findings are presented in Table 4.2-2 below:

**Table 4.2-2
Basis of Water Year Data**

Water Year Type	Base Years	Historical Sequence
Average Water Year	Average	1922 - 2003
Single-Dry Water Year	1977	---
Multiple-Dry Water Year	1931 – 1934	---

Source: Mojave Water Agency Final 2010 UWMP, Table 6-2

Table 4.2-3 summarizes MWA’s projections for total supply and demand during normal, single-dry year, and multiple dry years through 2035. MWA estimates demands will increase by 10 percent during single-dry year and multiple dry- year periods. MWA plans on meeting 100 percent of their service area demands through 2035 in single-dry years and multiple dry-year periods with consistent local sources, SWP banking, and supply enhancement projects.

⁴² Additional detailed information on the Lahontan Basin Plan is available on the Lahontan RWQCB website at http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/index.shtml

**Table 4.2-3
MWA Supply/Demand Reliability Projections
for Normal, Single Dry Years, and Multiple Dry Years (AFY)**

Normal Year	2010	2015	2020	2025	2030	2035
Total Estimated Supply	181,674	189,113	195,194	201,001	207,698	213,490
Total Estimated Demand	151,885	163,161	170,496	181,740	192,969	204,181
Difference/Surplus	29,789	25,952	24,698	19,261	14,729	9,309
Difference as a % of Supply	16.4%	13.7%	12.7%	9.6%	7.1%	4.4%
Difference as a % of Demand	19.6%	15.9%	14.5%	10.6%	7.6%	4.6%
Single-Dry Year	2010	2015	2020	2025	2030	2035
Total Estimated Supply	167,074	179,477	187,546	199,914	212,266	224,599
Total Estimated Demand	167,074	179,477	187,546	199,914	212,266	224,599
Multiple-Dry Year	2010	2015	2020	2025	2030	2035
Total Estimated Supply	167,074	179,477	187,546	199,914	212,266	224,599
Total Estimated Demand	167,074	179,477	187,546	199,914	212,266	224,599

Source: Mojave Water Agency Final 2010 UWMP, Tables 6-3, 6-4 and 6-5

Based on their analysis, MWA anticipates the availability of adequate supplies to meet demand during average, single-dry, and multiple-dry years, and excess supplies in normal years through 2035.

4.3 VULNERABILITY OF SUPPLY FOR SEASONAL OR CLIMATIC SHORTAGE

As previously stated, the City obtains its water from the Mojave River Basin, which is managed by MWA to ensure the reliability of local groundwater supplies during droughts and shortages. MWA is contracted with the California Department of Water Resources (DWR) for delivery of SWP water, but the variability in SWP supplies affects the ability of MWA to meet the overall recharge water supply needs for their service area. The amount of SWP water actually allocated to MWA each year is dependent on a number of factors, including seasonal or climatic shortages. These factors can cause the amount of available SWP water to vary significantly from year to year. As noted earlier in this section, the Department of Water Resources' "State Water Project Delivery Reliability Report 2009" presents a projection of SWP delivery reliability. Although it is very conservative, it assists MWA and other SWP contractors in assessing the reliability of their SWP supplies. The 2009 Report shows that deliveries during multiple-dry year periods could average about 34 to 35 percent of the maximum amount of water that MWA may request and could drop as low as 7 to 11 percent during an unusual single dry year.⁴³

⁴³ Final MWA 2010 UWMP dated June 2011

MWA assumes its local supply sources will remain constant during dry weather years. Since annual fluctuations in natural surface flows do not impact the long-term sustainability of the groundwater basins, MWA assumes the natural supply is 100 percent available under single-dry year and multiple-dry year conditions. MWA has also assumed that imported wastewater from agencies inside and outside of their service area, as well as return flow from pumped groundwater not consumptively used, will remain 100 percent available during dry weather conditions. Both are a direct function of water demands, which will typically increase during periods of dry weather. Additionally, MWA has assumed that supply of recycled water from wastewater treatment plants within their service area will actually increase during dry weather years, due to increased demands.

The variability in SWP supplies has the largest effect on the reliability of the groundwater supply during seasonal or climatic shortages. MWA anticipates that consistent local supplies, combined with several existing and planned programs and projects will ensure that its purveyors, including the city of Adelanto, will have an adequate and reliable water supply during seasonal or climatic shortages.

4.4 PLANNED WATER SUPPLY PROJECTS AND PROGRAMS TO MEET PROJECTED WATER USE

4.4.1 City of Adelanto Projects

The City continually reviews practices that will provide its customers with adequate and reliable supplies. Trained staff provide safe reliable water, which meets present and future needs in an environmentally and economically responsible manner. The City also works closely with MWA in regional water supply issues as well as water shortage contingency planning.

The City projects that water demands within its service area will increase over the next 25 years mainly due to population increases within the Adelanto's service area. Water use efficiency measures described in Section 7 and recycled water use described in Section 9 of this Plan have the potential to reduce overall demand on potable water thereby reducing overall per capita usage.

The City has identified a number of capital projects aimed at improving the City's water supply reliability and enhancing the operations of the City's facilities. These projects, which are referenced in the City's 2010-2015 Capital Improvement Program, include:

1. Water Treatment Plant Project - The City has access to the State Project Water via the Barstow Pipeline, but before the surface water can be utilized, it must first be treated. The utilization of the State Project Water in future years will be important in meeting the City's future development needs. To assist in meeting that need, this project envisions design and development of a water treatment facility to treat SPW to meet safe drinking water standards as well as the extension of transmission lines to connect that source to the City's distribution

- grid. Total design and construction costs for this project have been estimated at \$11.75 million.
2. Water Reclamation Pipeline and Storage Project – As discussed in further detail in Section 9 of this UWMP, the City of Adelanto’s has been exploring construction of a recycled water system as an alternative source of water for irrigation and other non-potable uses. This project would involve the design and development a waste water effluent reclamation facility capable of storing and distributing recycled water as well as construction of a recycled water distribution system with connections to parks and streetscape irrigation. Total design and construction costs for this project have been estimated at \$4.5 million.
 3. Water Storage Reservoir Zone 3 Tank Site Project - The City has identified the need to expand existing storage capacity to meet future peak demands relating to the potential development of a new prison facility. The city has additional space at the existing storage facilities in pressure zone three. This project will include design and construction of one to two additional storage reservoirs. Total design and construction costs for this project have been estimated at \$4.5 million.
 4. Supervisory Control and Data Acquisition System (SCADA) – A SCADA system is envisioned to automatically operate the City’s water treatment plant, wells, and storage reservoirs. SCADA controls the on-off operation of the wells and booster pumps, alerts staff to malfunctions and their location, generate reports, storage reservoir water levels, and other data, which will contribute to the increased reliability of the overall water system. The proposed system will replace an existing system, which is over 11 years old, obsolete, and inefficient, suffers from frequently malfunctions and requires semi-automatic or manual operation. Total design and construction costs for this project have been estimated at \$0.4 million.
 5. Valve Operator & GIS Software – Valve operators have been identified as a means to more efficiently exercise the City’s water valves. The Geographic Information System (GIS) software, in conjunction with handheld Geographic Positioning (GPS) devices will be used to identify the locations of these valves. Total implementation costs for this project has been estimated at \$30,000.
 6. Utility Vacuum - The City plans to purchase a 500 gallon utility vacuum for use during water line breakages and valve box clean-outs. This vacuum would facilitate these water system repairs and enable the system to be returned to operation quickly. The vacuum would also be used to pothole or locate water lines on an as-needed basis. Purchase of this equipment is estimated to cost \$60,000.

4.4.2 Regional Agency Projects and Programs

The planned projects and programs implemented by MWA to secure their water supplies and effectively recharge the groundwater supply in the Mojave River Basin directly affect the reliability of the City’s water supply.

To account for the variability of available SWP water and to prevent shortages during dry years, MWA banks SWP storage water when possible. Although there can be a large variability in available SWP supplies, MWA's available SWP supply on average is greater than the demand within their service area. MWA takes advantage of this by storing the excess water in various groundwater basins for future use when SWP supplies are not available. During normal and wet years, MWA recharges SWP water in excess of local demands. They store this excess water as part of a groundwater storage program. During dry years when SWP supplies are limited, MWA uses the banked supply to meet demands. To prioritize where available water should be banked, MWA adopted a Water Banking Policy in 2006. The Policy established banking targets for each groundwater basin based on demands in each Subarea.

To enhance the long-term reliability of the water supply, MWA is currently exploring opportunities to purchase water supplies from other water agencies and sources, in addition to SWP water supplies. MWA has made short term transfers with the Metropolitan Water District of Southern California (Metropolitan) and the Sonoma County Water Agency (SCWA). Although these exchange programs were short-term, they represent the types of exchange opportunities that MWA and other SWP contractors have to maximize utilization of available water supplies from the SWP.

MWA has supply enhancement projects planned to prevent groundwater overdraft in the future and improve supply reliability. Their 2004 Regional Water Management Plan as well as MWA's Final 2010 UWMP lists several recharge projects that will improve water reliability within the Mojave Basin Area. These projects include:

1. Regional Recharge and Recovery Project (R³ Project) – This is a conjunctive use project that it currently under construction. It will store SPW underground in the local aquifer and later recovers and distributes the water to local water purveyors. The project will provide a new source of supply for water providers in the Mojave Basin and offset their need to continue excessive pumping within the declining regional aquifer.
2. Oro Grande Wash Recharge Project – This project, which will ultimately recharge 8,000 AFY, is also currently under construction.
3. Ames Valley Recharge Project – A feasibility study for this recharge project is currently being prepared. The project will initially recharge 1,500 AFY to mitigate historical overdraft conditions in the Ames Valley.
4. Joshua Bain Recharge Project – This project is also currently under construction. The project will recharge 1,000 AFY into the Copper Mountain Valley and Joshua Tree Subarea beginning in 2012.
5. Antelope Valley Wash Recharge Project – This planned project could provide up to 3,500 AFY in groundwater recharge capacity.

4.5 ADELANTO'S EXCHANGE OR TRANSFER OPPORTUNITIES

As previously described in Section 2, the City's system has two available interties with the Victorville Water District. During normal operation of the water system, there are no transfers or exchanges of water within the Adelanto's service area. These two interties provide a potential additional source of water in case of a shortage or emergency. However, the City of Victorville also obtain all of its water from the local groundwater supply, and thus its reliability is also tied directly to the reliability of the groundwater supply. Because Adelanto is entirely dependent on the local groundwater supply, to improve future reliability the City is considering future projects that would allow direct purchase of wholesale imported water, such as the previously described Barstow Pipeline Treatment Plant.

4.6 DESALINATED WATER OPPORTUNITIES

The City does not have any desalination facilities. Adelanto's service area is not located near the ocean, so desalination is not a practical or economically feasible source of water for the City.

5 WATER SUPPLY BASELINES AND TARGETS AND WATER SUPPLY RELIABILITY COMPARISON TABLES

5.1 WATER BASELINES AND TARGETS

To comply with the SBX7-7 water conservation legislation, water suppliers must first establish a baseline water usage, which is then used to set targets for 2015 and 2020. The SBX7-7 legislation stipulates that targets must be established by using one of four allowable methods briefly defined as follows:

- Method 1: Per capita daily use equals eighty percent of the water supplier's baseline per capita usage;
- Method 2: Per capita daily use is set based on performance standards applied to indoor residential use; landscape area water use, and commercial, industrial and institutional use;
- Method 3: Per capita daily use is set at 95 percent of the applicable State hydrologic region target based on DWR's April 30, 2011 draft 20x2020 Water Conservation Plan (Adelanto is in the South Lahontan Region 9); and
- Method 4: Per capita daily use is set based on standards consistent with CUWCC BMPs

Detailed information on the calculation of Adelanto's baseline water usage and 2015 and 2020 per capita water conservation targets can be found in Appendix F, a Technical Memorandum dated June 1, 2011, entitled "*20x2020 Baseline Calculation & Water Use Target Method Selection.*"

As noted in Appendix F, the City's per capita usage baseline average, minimum baseline average and SBX7-7 water conservation targets for 2015 and 2020 have been established as follows:

- Baseline Average (based on 10-year data from 1996-2005) = 321.8 gpcd
- Minimum Baseline Average (based on 5-year data from 2004-2008) = 214.6 gpcd
- 2015 Water Conservation Target = 262.9 gpcd
- 2020 Water Conservation Target = 203.9 gpcd

These per capita usage targets will be used to develop water demands over the next 25 years.

5.2 WATER SUPPLY RELIABILITY COMPARISON TABLES

Tables 5.2-1 through 5.2-3 compare the City's anticipated available water supply with expected demands for normal, single dry and multiple dry years beginning in 2010 and extending through 2035. The normal, single-dry, and multiple-dry year conditions assume conditions from base years shown in Table 4.2-2.

Normal Year Supply and Demand Projections

The City's projected supply and demand estimates for normal year water usage were provided by the Mojave Water Agency and are presented in Table 5.2-1.

**Table 5.2-1
Adelanto Projected Water Supply and Demand
Normal Water Year (AFY)**

Water Sources	2015	2020	2025	2030	2035
Available Supply ¹	7,576	9,300	10,444	11,581	12,640
Demand ²	6,537	8,122	9,443	10,763	12,084
Difference	1,039	1,178	1,001	818	556
Difference as a Percentage of Supply	13.7%	12.7%	9.6%	7.1%	4.4%
Difference as a Percentage of Demand	15.9%	14.5%	10.6%	7.6%	4.6%

[1] Available Supply determined from water demand projections for Adelanto provided by MWA.
Supply/demand ratio assumed to be proportional to MWA's supply/demand during normal years.
Supply/demand ratio determined from MWA's Final 2010 UWMP as shown in Table 4.2-3 of this UWMP

[2] Demand provided by MWA

Single Dry Year Supply and Demand Projections

MWA's Final 2010 UWMP projects good supply availability during all single dry years occurring over the next 25 years with supplies ranging from about 95 to 100 percent of normal year supplies in 2015 through 2025 and 102 to 105 percent of normal year supplies in 2030 and 2035. These projections, coupled with the MWA's excess supply availability during normal years (ranging from 4.6 to 15.9 percent as shown in Table 5.2-1), support Mojave Water Agency finding that they should be able to meet demands during all single dry years from 2015 through 2035 despite a projected 10 percent increase in demand during all single dry years. The single dry year projections presented in Table 5.2-2 for the City of Adelanto are thus consistent with MWA's regional projections for single dry years.

**Table 5.2-2
Adelanto Projected Water Supply and Demand
Single Dry Water Year (AFY)**

Water Sources	2015	2020	2025	2030	2035
Available Supply ¹	7,191	8,934	10,387	11,839	13,292
Demand ²	7,191	8,934	10,387	11,839	13,292
Difference	0	0	0	0	0
Difference as a % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
Difference as a % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

[1] Available Supply determined from water demand projections for Adelanto provided by MWA.
Supply/demand ratio assumed to be proportional to MWA's supply/demand during single dry years.
Supply/demand ratio determined from MWA's Final 2010 UWMP and indicated in Table 4.2-3 of this UWMP.

[2] Demand assumed to increase by 10 percent during dry years based on MWA regional projection.
Normal year demand volume provided by MWA.

Multiple Dry Year Supply and Demand Projections

As previously noted in Table 4.2-3, MWA has projected a 10 percent increase in demand for all single dry and multiple dry years as compared with the normal year demands. MWA has also projected equal average demands during each of the first three years of a multiple dry year period. Additionally, MWA has projected the same demands during single dry years and the first three years of all multiple dry year scenarios. MWA also projects supplies equal to these demands in all single dry and multiple dry year scenarios. Consistent with MWA’s regional projections, the City of Adelanto has also made similar projections for both single dry and multiple dry years scenarios. Adelanto’s multiple dry year projections are presented in Table 5.2-3. They indicate the City will have sufficient supplies during all multiple dry years to meet their demands.

**Table 5.2-3
Adelanto Projected Water Supply and Demand
Multiple Dry Water Years (AFY)**

		2015	2020	2025	2030	2035
Multiple-dry year first year supply and demand	Available Supply ¹	7,191	8,934	10,387	11,839	13,292
	Demand ²	7,191	8,934	10,387	11,839	13,292
	Difference	0	0	0	0	0
	Difference as a % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
	Difference as a % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%
Multiple-dry year second year supply and demand	Available Supply ¹	7,191	8,934	10,387	11,839	13,292
	Demand ²	7,191	8,934	10,387	11,839	13,292
	Difference	0	0	0	0	0
	Difference as a % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
	Difference as a % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%
Multiple-dry year third year supply and demand	Available Supply ¹	7,191	8,934	10,387	11,839	13,292
	Demand ²	7,191	8,934	10,387	11,839	13,292
	Difference	0	0	0	0	0
	Difference as a % of Supply	0.0%	0.0%	0.0%	0.0%	0.0%
	Difference as a % of Demand	0.0%	0.0%	0.0%	0.0%	0.0%

[1] Available Supply determined from water demand projections for Adelanto provided by MWA. Supply/demand ratio assumed to be proportional to MWA’s supply/demand during single dry years. Supply/demand ratio determined from MWA’s Final 2010 UWMP and shown in Table 4.2-3 of this UWMP.

[2] Demand assumed to increase by 10 percent during multiple dry years. Normal year demand volume provided by Mojave Water Agency.

Summary of Future Supply and Demand Projections and Consideration of Purchase or Lease of Additional Groundwater Rights

In summary, Mojave Water Agency anticipates excess supplies during all normal years through 2035 and sufficient supplies to meet demands during all single-dry and multiple-dry years through 2035. However, Adelanto's normal, single dry and multiple dry year demand projections will increase to 12,084 AFY, 13,292 AFY and 13, 292 AFY, respectively, by the year 2035. Given that Adelanto only has a current FPA of 2,620 AFY, the City may wish to give consideration to purchase and or long-term leases of additional groundwater rights from other entities not using those rights. The purchase or lease of such rights will reduce the City's payment of replacement charges in future years, thereby reducing the cost of water to the City and its customers.

5.3 LOW-INCOME PROJECTED WATER DEMANDS

The California Water Code, Division 6, Part 2.6, Section 10631.1⁴⁴ requires each urban water retailer to include projected water use for single family and multi-family residential housing needed for lower income households as defined in Section 50079.5⁴⁵ of the Health and Safety Code, as identified in the housing element of the City.

The City's 2008-2014 Housing Element dated March 2010 addresses the Regional Housing Needs Assessment (RHNA) from 1998-2008 and 2008-2014. Table 5.3-1 summarizes this information.⁴⁶

**Table 5.3-1
Adelanto RHNA**

Income Category	1998-2005 RHNA	2008-2014 RHNA	Total
Very Low Income	258	1,908	2,166
Low Income	153	1,344	1,497
Moderate Income	177	1,561	1,738
Above Moderate	312	3,610	3,922
Total RHNA	900	8,423	9,323

From the Table 5.3-1 above, the very low and low income homes are the ones subject to the Water Code requirements totaling 3,663 homes (2,166 + 1,497). The 2008-2014 Housing Element also states that between 1998 and 2008, 98 percent of the single family

⁴⁴ All California Law Codes can be accessed at this website: <http://www.leginfo.ca.gov/calaw.html>; Section 10631.1 of the California Water Code is available at this website:

<http://www.leginfo.ca.gov/cgi-bin/displaycode?section=wat&group=10001-11000&file=10630-10634>

⁴⁵ Section 500.79.5 of the Health and Safety Code is available at this website:

<http://www.leginfo.ca.gov/cgi-bin/displaycode?section=hsc&group=50001-51000&file=50050-50106>

⁴⁶ 2008-2014 Housing Element, City of Adelanto, March 2010, Hogle-Ireland, Inc. available at:

<http://www.ci.adelanto.ca.us/vertical/Sites/%7BB5D4A1FE-8A01-4BEF-B964-5A44B9339C72%7D/uploads/%7B080858D8-CEE8-43CD-A39E-CF70C2799B23%7D.PDF>

units constructed were classified as affordable (very low and low income) plus all of the apartments and mobile home units. This totals 3,023 units per Table 40 of the 2008-2014 Housing Element study. Another 300 units are estimated to be constructed in 2009 and 2010, bringing this total to 3,323. Subtracting the affordable units constructed between 1998 and 2010 from the RHNA amount of 3,663 derived above leaves 340 affordable homes to be constructed between 2010 and 2014 to meet the City’s RHNA requirement. From Table 1.3-3, the population increase projected between 2010 and 2015 is 7,101 (38,866-31,765). At 3.86 people per dwelling unit in Adelanto as estimated by the U.S. Census Bureau⁴⁷, the projected 7,101 population increase between 2010 and 2015 equates to about 1,840 dwelling units. Therefore, there is more than enough population and water demand projected to provide for Adelanto’s estimated remaining RHNA requirements between now and 2014.

5.4 WATER USE REDUCTION PLAN

As demonstrated from the historical water usage data presented in Appendix E, the City has achieved substantial reductions in per capita water usage in recent years. In fact, the City has met its SBX7-7 2020 target of 203.9 gpcd for the past four years and has met its 2015 interim target of 262.9 gpcd for the past eight years.

To ensure continued long-term adequate reliability, the City plans on meeting or exceeding its SBX7-7 target while matching or staying below demand projections estimated by the Mojave Water Agency. MWA’s demand and population projections estimate that the City’s per capita usage from 2015 through 2035 will vary from 150.2 to 158.1 gallons per day, which is well below the 20x2020 target of 203.9 gpd.

**Table 5.4-1
Adelanto Projected Water Supply and Demand
Multiple Dry Water Years (AFY)**

Water Sources	2015	2020	2025	2030	2035
Demand in AFY (from Table 5.2-1)	6,537	8,122	9,443	10,763	12,084
Demand in gallons per day (gpd)	5,835,800	7,250,800	8,430,100	9,608,600	10,787,900
Population (from Table 1.3-3)	38,866	45,967	53,395	60,824	68,252
Per Capita Usage in gpcd	150.2	157.7	157.9	158.0	158.1

⁴⁷ Per the U.S. Census Bureau American FactFinder Fact Sheet for Adelanto, 2005-2009 estimate of household size; available at:
http://factfinder.census.gov/servlet/ACSSAFFacts?_event=&geo_id=16000US0600296&_geoContext=01000US%7C04000US06%7C16000US0600296&_street=&_county=adelanto&_cityTown=adelanto&_state=04000US06&_zip=&_lang=en&_sse=on&ActiveGeoDiv=&_useEV=&pctxt=fph&pgsl=160&_submenuId=factsheet_1&ds_name=null&_ci_nbr=null&qtr_name=null®=null%3Anull&_keyword=&_industry=ad

As demonstrated, the City of Adelanto should not have any problem meeting its 2015 interim and 2020 water conservation targets. Nevertheless, the City will continue to encourage water conservation through a variety of means including:

- Encouraging residents and businesses in the City to conserve water;
- Educating the public through a variety of programs on the need for continued water conservation;
- Continuing to operate and maintain the water distribution system with an eye toward reducing water losses by repairing or eliminating any leaks that may develop as soon as practical;
- Encouraging or requiring new developments to install water conservation fixtures and landscape with low water use plant materials (xeriscape); and
- Possible construction of a recycled water system.

6 WATER USE PROVISIONS

6.1 PAST, CURRENT AND PROJECTED WATER CONNECTIONS BY SECTOR

Table 6.1-1 shows the past and projected number of water service customers by sector from 2010 through 2035. Figures shown for 2010 are based on actual data. The projections shown for 2015 through 2035 reflect increasing usage based on the population growth projected in Table 1.3-2.

**Table 6.1-1
Number of Water Service Connections by Sector**

City Billing Class	2010	2015	2020	2025	2030	2035
Residential ^[1]	7,104	8,692	10,280	11,941	13,603	15,264
Commercial	158	193	229	266	303	339
Industrial	67	80	97	113	128	144
Irrigation ^[2]	6	5	7	7	8	10
Other	1	1	1	2	2	2
Recycled	0	2	2	3	3	3
Total Connections	7,336	8,974	10,616	12,331	14,047	15,763

Note: 2010 data obtained from annual Public Water Statistics Report

[1] Includes both Single Family and Multi Family Residential

[2] Includes both agricultural and non-agricultural

6.2 PAST, CURRENT AND PROJECTED WATER USE BY SECTOR

Unaccounted-for Water

Unaccounted-for water is the difference between water production and water consumption and represents “lost” water. Unaccounted-for water occurs for a number of reasons including:

- Leakage – Water lost from system leakage from pipes, valves, pumps, and other water system appurtenances.
- Hydrant Testing – Hydrant testing to monitor the level of fire protection available throughout the City is performed by the San Bernardino County Fire Department. The APUA also performs hydrant flushing to eliminate settled sediment and ensure better water quality water. Water used during hydrant testing and flushing is not metered.
- Firefighting – Water used to fight fires is also not metered.
- Customer Meter Inaccuracies – Meters have an inherent accuracy for a specified flow range; however, flow above or below that range is usually registered at a lower rate. Meters also become less accurate with time due to wear.

As noted in Table 6.2-1, actual unaccounted-for-water in the City during the years 2008 through 2010 averaged approximately 3.3 percent of total water produced. This percentage has been used to estimate unaccounted for water for the years 2015 through 2035.

**Table 6.2-1
City of Adelanto Unaccounted-for-Water – 2008 through 2010 (AFY)**

Item	2008	2009	2010	3-Year Total
Water Production	5,326	5,477	4,866	15,669
Water Consumption	5,672	5,434	4,047	15,153
Difference (Unaccounted-for-Water)	-346	43	819	516
Percent (Unaccounted-for-Water)	-6.5%	0.8%	16.8%	3.3%

Past, Current and Projected Water Use

Table 6.2-2 shows past, current and projected water use by sector between 2010 and 2035. Water usage figures for 2010 are based on actual data. The projections shown for 2015 through 2035 reflect increasing usage based on the population growth projected in Table 1.3-2. These projections also incorporate the only planned project for which a current draft Water Supply Assessment is being considered by the APUA, i.e., the RE Victor Phelan Solar Project. Although that project encompasses a land area of approximately 160 acres, it will only have a long-term projected water usage of less than one AFY. All projections shown in Table 6.2-2 take unaccounted-for water into account.

**Table 6.2-2
Past, Current and Projected Water Use by Sector in AF**

City Billing Class	2010	2015	2020	2025	2030	2035
Single-Family Residential	2,883	4,577	5,687	6,612	7,536	8,461
Multi-Family Residential	319	506	629	731	833	935
Commercial / Institutional ^[1]	483	766	952	1,107	1,262	1,417
Industrial ^[1]	272	431	536	623	710	797
Landscape Irrigation (Potable)	3	4	5	5	6	7
Other	23	36	45	52	59	66
Agriculture Irrigation	0	0	0	0	0	0
Subtotal Potable Water Use	3,982	6,320	7,853	9,129	10,406	11,683
Unaccounted for System Losses ^[2]	884	216	268	312	355	399
Total Potable Water Use ^[3]	4,866	6,537	8,122	9,443	10,763	12,084
Recycled Water	0	1	1	2	2	2
TOTAL ADELANTO WATER USE	4,866	6,538	8,123	9,445	10,765	12,086

Source: 2010 data obtained from Water Breakdown Report obtained from the City of Adelanto; 2010 data is for water year (October-September); projections for all future years are estimated based on 2010 proportions

[1] Sum of Commercial/Schools/Institutional/Industrial in Water Breakdown Report obtained from the City of Adelanto was proportioned by average ration between calendar years 2000-2002 and 2004-2007 as follows: Commercial/Institutional = 64% and Industrial = 36%

[2] 2010 unaccounted for losses are based on actual data; all other years based on an estimated average loss of 3.3% (i.e., the average percentage loss over the past three water years)

[3] Total Potable Water Use from Table 5.2-1

7 WATER DEMAND MANAGEMENT MEASURES

7.1 INTRODUCTION

The City of Adelanto recognizes water use efficiency as an integral component of current and future water strategy in its service area. Demand management measures (DMM) refer to policies, programs, rules, regulation and ordinances, and the use of devices, equipment and facilities that, over the long term; have been generally justified and accepted by the industry as providing the means to achieve a “reliable” reduction in water demand. This means providing education, tools, and incentives to help residents and businesses reduce the amount of water used on their property. Demand management is as important to ensuring water supply reliability as is providing a new water supply. The City has aggressively pursued conservation in an effort to reduce demand and stretch existing water supplies.

The Urban Water Management Planning Act requires implementation of 14 Demand Management Measures (DMM) or best management practices (BMP). These 14 BMPs include technologies and methodologies that have been sufficiently documented in multiple demonstration projects that result in more efficient water use and conservation. Specifically, the 14 BMPs include:

1. Water survey programs for single-family residential and multifamily residential customers
2. Residential plumbing retrofit
3. System water audits, leak detection, and repair
4. Metering with commodity rates for all new connections and retrofit of existing connections
5. Large landscape conservation programs and incentives
6. High-efficiency washing machine rebate programs
7. Public information programs
8. School education programs
9. Conservation programs for commercial, industrial, and institutional accounts
10. Wholesale agency programs
11. Conservation pricing
12. Water conservation coordinator
13. Water waste prohibition
14. Residential ultra-low-flush toilet replacement programs

As previously noted, the City of Adelanto is a water purveyor of Mojave Water Agency, which is a member of the California Urban Water Conservation Council (CUWCC). As a CUWCC member, MWA submits annual reports to the Council in accordance with the

Memorandum of Understanding Regarding Urban Water Conservation in California (MOU), most recently amended in 2008. MWA implements many of the urban water conservation Demand Management Measures (DMMs) on behalf of its purveyors, including the City of Adelanto. Because the Adelanto is not a member of the CUWCC, it has not submitted past Retail Water Agency Annual Reports to the Council; however, City staff is currently considering future membership in CUWCC.

Additionally the assistance Adelanto receives from MWA, the City is also a member of the Alliance for Water Awareness and Conservation (AWAC).⁴⁸ AWAC is a coalition of 25 High Desert regional organizations whose mission is to promote the efficient use of water and increase communities' awareness of conservation as an important tool to help ensure an adequate water supply. AWAC was formed in 2003 in response to growing water demand throughout the 4,900-square-mile area of the Mojave Desert in Southern California. AWAC works to help the region's residents and businesses use water more efficiently. In doing so, AWAC has set the following three goals:

1. Educate the local communities with the understanding of the importance of water conservation;
2. Provide the local communities with the tools to effectively reduce per capita consumption to targeted goals; and
3. Reduce regional water use by 10 percent gross per capita by 2010 and 15 percent gross per capita by 2015 to achieve a sustainable, reliable supply to meet regional water demands.

AWAC has also adopted an Operational Plan to assist its members in reporting on conservation activities in their service areas in accordance with state requirements.⁴⁹ The Operation Plan addresses feasible water conservation alternatives including implementation of the DMMs and conservation priorities as contained in the MWA's Integrated Regional Water Management Plan (IRWMP) and CUWCC's Memorandum of Understanding (MOU).

As Signatory to the CUWCC MOU, MWA has committed to a good faith effort in implementing the 14 previously mentioned cost-effective BMPs. "Implementation" means achieving and maintaining the staffing, funding, and in general, the priority levels necessary to achieve the level of activity called for in each BMP's definition, and to satisfy the commitment by the signatories to use good faith efforts to optimize savings from implementing BMPs as described in the MOU. A BMP as defined in the MOU is a "practice for which sufficient data are available from existing water conservation practices to indicate that significant conservation or conservation related benefits can be achieved; that the practice is technically and economically reasonable and not environmentally or socially unacceptable; and that the practice is not otherwise unreasonable for most water agencies to carry out."

⁴⁸ Information on AWAC has been extracted from their website at: <http://www.hdawac.org/aboutus/>

⁴⁹ The Operational Plan, adopted in November 2006 and most recently amended in November 2009 can be found on AWAC's website at: <http://www.hdawac.org/documents/documents/OperationalPlan2009.pdf>

A summary of all current Demand Management Measures being implemented within the Adelanto's water service area by either by the City or with assistance from AWAC or MWA is provided below. MWA's Final 2010 Urban Water Management Plan should be referred to for more detailed information on the regional best management practices (BMPs) program and each individual BMP.

7.2 DETERMINATION OF DMM IMPLEMENTATION

As noted, the City works with both MWA and AWAC in implementing the 14 previously referenced cost-effective DMMs. Since the City did prepare a 2005 UWMP, no projections were made for DMM activities between the years 2005 and 2010. Therefore, the following section generally describes the level of DMM implementation by the City and/or AWAC or MWA on behalf of the City. Water savings incurred from the implementation of these DMMs relate directly to additional available water for beneficial use within the MWA'S service area, including the City of Adelanto.

1. DMM 1 – Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers

Definition - Implementation methods shall be at least as effective as identifying the top 20 percent of water users in each sector, directly contacting them (e.g., by mail and/or telephone) and offering the service on a repeating cycle; providing incentives sufficient to achieve customer implementation (e.g., free shower heads, hose and sprinkler timers, etc.). (Water Code Section 10631(f), 1-A)

MWA currently offers free low-flow shower heads, faucet aerators, and leak detection dye tablets to the City's customers.

2. DMM 2 – Residential Plumbing Retrofits

Definition – Plumbing Retrofit Implementation methods shall be at least as effective as delivering retrofit kits including high quality low-flow shower heads to pre-1980 homes that do not have them and toilet displacement devices or other devices to reduce flush volume for each home that does not already have ULF toilets, offering to install the devices; and following up at least three times. (Water Code Section 10631(f), 1-B)

The City, along with MWA, encourage the use of EPA WaterSense certified High-Efficiency Toilets (HET), using only 1.28 gallons per flush. In addition, as mentioned under DMM 1, MWA provides free low-flow shower heads, faucet aerators, and leak detection dye tablets at their facilities.

3. DMM 3 – System Water Audits, Leak Detectors, and Repair

Definition – Implementation methods shall be at least as effective as at least once every three years completing a water audit of the water supplier's distribution system using methodology such as that described in the American Water Works Association's "Manual of Water Supply Practices, Water Audits and Leak Detection;" advising customers whenever it appears possible that leaks exist on the customer's side of the

meter, and performing distribution system leak detection and repair whenever the audit reveals that it would be cost effective. (Water Code Section 10631(f), 1-C)

MWA is currently developing a program to provide technical support to its retailers for addressing the new American Water Works Association (AWWA) requirements for System Water Audit implementation. Implementing the methodology presented in the AWWA's "Manual of Water Supply Practices, Water Audits and Leak Detection" (AWWA M36) will help reduce water lost to leaks.

Many of the recommendations noted in the manual are currently integrated into the City's regular operations and maintenance procedures. From recent metered sales totals and groundwater production records, the City is able to approximate loss of water in the system due to leaks. During the three year period from 2008 through 2010, the volume of unaccounted for water losses within the City's water distribution system was estimated to be 3.3 percent. This loss is well within industry standards for a well-operated system. Therefore, a full-scale system audit is not necessary at this time.

4. DMM 4 – Metering with Commodity Rates for all New Connections and Retrofit of Existing Connections

Definition – Implementation methods shall be requiring meters for all new connections and billing by volume of use; and establishing a program for retrofitting any existing unmetered connections and billing by volume of use; for example, through a requirement that all connections be retrofitted at or within six months of resale of the property or retrofitted by neighborhood. (Water Code Section 10631(f), 1-D)

All service connections within the City's water service area are provided with water meters. There are no unmetered water service connections within the service area. The City's meters are classified into four sectors including residential (combining both single and multi-family), commercial (including institutional), industrial and irrigation (combining both agricultural and non-agricultural). The City bills each customer based on the volume of water used. Billing is based on a tiered rate structure. Further details on the rate structure are listed under BMP 11.

5. DMM 5 – Large Landscape Conservation Programs and Incentives

Definition – Implementation methods shall be at least as effective as identifying all irrigators of large (at least 3 acres) landscapes (e.g., golf courses, green belts, common areas, multi-family housing landscapes, schools, business parks, cemeteries, parks and publicly owned landscapes on or adjacent to road rights-of-way); contacting them directly (by mail and/or telephone); offering landscape audits using methodology such as that described in the Landscape Water

Management Handbook prepared for the California Department of Water Resources; and cost-effective incentives sufficient to achieve customer implementation; providing follow-up audits at least once every five years; and providing multi-lingual training and information necessary for implementation. In addition, enacting and implementing landscape water conservation ordinances, or if the supplier does not have the authority to enact ordinances, cooperating with cities, counties and the green industry in the service area to develop and implement landscape water conservation ordinances pursuant to the 'Water Conservation in Landscaping Act' (Government Code 65591 et. seq.). (Water Code Section 10631(f), 1-E)

MWA provides agencies within its service area with help in developing landscape programs and assisting customers in water conservation. MWA also currently provides small to large landscape rebates of \$0.50 per square foot of turf converted to desert adaptive landscaping with 25 percent canopy coverage. Additionally, Section 17.60 of the City's Municipal Code set for landscaping and water conservation guidelines to be followed in Adelanto (Appendix G)

AWAC also promotes turf replacement incentives for both residential and commercial users. AWAC was also instrumental in drafting the compliant water efficiency landscape ordinance template for AB 1881.⁵⁰

6. **DMM 6 – High-Efficiency Washing Machine Rebate Programs**

Definition – Implementation methods shall be enacted to provide incentives for replacement of older less efficient washing machines with newer, high-efficiency models. (Water Code Section 10631(f), 1-F)

The MWA program offers rebates of \$175 to residential customers who purchase high efficiency washing machines (HEWM) with a minimum water use efficiency, or water factor. AWAC also promotes the use of HEWMs.

7. **DMM 7 – Public Information Programs**

Definition – Implementation methods shall be at least as effective as ongoing programs promoting water conservation and conservation related benefits including providing speakers to community groups and the media; using paid and public service advertising; using bill inserts; providing information on customer's bills showing use in gallons per day for the last billing period compared to the same period the year before; providing public information to promote other water conservation practices; and coordinating with other governmental agencies, industry groups and public interest groups. (Water Code Section 10631(f), 1-G)

⁵⁰ A copy of AB 1881 (the Model Efficiency Landscape Ordinance) can be found here:
http://www.water.ca.gov/wateruseefficiency/docs/ab_1881_bill.pdf

MWA promotes water conservation through several public information programs. MWA provides outreach, educational, informational materials and literature, public service announcements, and paid advertisements promoting water conservation to the public. MWA and AWAC also provide flyers and bill inserts, and other promotional materials, which the Adelanto provides to its customers.

The City also participates in the annual Adelanto Community Water Awareness Festival as well as other regional events promoted by AWAC including the San Bernardino County Fair and Home and Garden Trade Show at the County Fair Grounds in Victorville. Additionally, City of Adelanto staff have chaired the 2009/10 and 2010/11 Desert Communities Water Awareness Expo, which promotes water awareness at regional trade shows and at the Victor Valley Mall.

AWAC also prepares and/or distribution various outreach materials including the following booklets, pamphlets or handouts:⁵¹

- A Guide to High Desert Landscaping
- A Complete Guide to High Desert Water Conservation
- High Desert Vegetable Planting Guide
- Water Efficient and Native Plants Lists
- Water Efficient Irrigation
- Water Efficient Landscaping
- Water Smart Landscaping

8. DMM 8 – School Education Programs

Definition – Implementation methods shall be at least as effective as ongoing programs promoting water conservation and conservation related benefits including working with the school districts in the water supplier's service area to provide educational materials and instructional assistance. (Water Code Section 10631(f), 1-H)

The City participates in school water conservation education programs in cooperation with MWA and the Mojave Environmental Education Consortium (MEEC). MWA provides literature and staff support to the City for teacher training workshops known as “Project Wet”. Additionally, AWAC works with local school districts and community colleges and prepares and distributes the outreach materials referenced under DMM 7.

⁵¹ Refer to MWA website for additional information:
<http://www.mojavewater.org/home/conservation/conservPlantContent.aspx>

9. DMM 9 – Conservation Programs for Commercial, Industrial and Institutional (CII) Accounts

Definition – Implementation methods shall be at least as effective as identifying and contacting the top 10 percent of the industrial and commercial customers directly (by mail and/or telephone); offering audits and incentives sufficient to achieve customer implementation; and providing follow-up audits at least once every five years if necessary. (Water Code Section 10631(f), 1-I)

DMM 9 is implemented by MWA. Rebates are offered as an incentive to upgrade to more efficient equipment. AWAC also promotes conservation programs for commercial, industrial and institutional accounts.

10. DMM 10 – Wholesale Agency Assistance Program

Definition – Implementation shall consist of at least the following actions: Wholesale Water Agency shall provide conservation-related technical support and information; financial incentives, or equivalent resources; and, when mutually agreeable and beneficial, operate all or any part of the conservation-related activities which a given retail supplier is obligated to implement under the BMP's cost-effectiveness test. (Water Code Section 10631(f), 1-J)

The City is not a wholesale water agency and therefore does not implement this DMM. However, AWAC and MWA promote water conservation wholesale agency assistance programs. AWAC also provides technical and legislative support on water conservation related technical issues.

11. DMM 11 – Conservation Pricing

Definition – Implementation methods shall be at least as effective as eliminating non-conserving pricing and adopting conserving pricing. For signatories supplying both water and sewer, this BMP applies to pricing of both water and sewer service. Signatories that supply water but not sewer service shall make a good faith effort to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service. (Water Code Section 10631(f), 1-K)

In 2009, after eight years with no increases in water rates, the City adopted a tiered rate structure, which encourages water conservation. Specific information on the City's rate structure is presented in tables 7.2-1 and 7.2-2. As noted, the tiered commodity rates will be phased in over a four year period, which began in 2009.

**Table 7.2-1
Adelanto's Base Water Rates by Meter Size**

Meter Size	Base Rate Effective 9/1/09	Base Rate Effective 7/1/10	Base Rate Effective 7/1/11	Base Rate Effective 7/1/12
¾"	\$13.38	\$18.90	\$18.98	\$26.50
1"	\$22.34	\$31.56	\$31.70	\$44.26
1-½"	\$44.56	\$62.94	\$63.20	\$88.25
2"	\$71.32	\$100.74	\$101.16	\$141.25
3"	\$133.80	\$189.00	\$189.80	\$265.00
4"	\$223.04	\$315.06	\$316.40	\$441.76

**Table 7.2-2
Adelanto's Tiered Water Conservation Commodity Rates**

Commodity Rate Tier ^[1]	Effective 9/1/09		Effective 7/1/10		Effective 7/1/11		Effective 7/1/12	
	Units ^[2]	Rate	Units	Rate	Units	Rate	Units	Rate
1	1-20	\$1.25	1-15	\$2.40	1-15	\$2.40	1-15	\$2.40
2	21-35	\$2.16	16-25	\$3.40	16-25	\$3.40	16-25	\$3.40
3	> 36	\$2.50	> 26	\$4.40	> 26	\$4.40	> 26	\$4.40

[1] Units are billed in hundred cubic feet (CCF) which is approximately 748 gallons

[2] The number of units in each tier will vary from the above based on meter size; all commercial and industrial properties will be charged at Tier 1 rates for all water used

12. DMM 12 – Conservation Coordinator

Definition – Implementation methods shall be at least as effective as designating a water conservation coordinator responsible for preparing the conservation plan, managing its implementation, and evaluating the results. For very small water suppliers, this might be a part-time responsibility. For larger suppliers this would be a full-time responsibility with additional staff as appropriate. This work should be coordinated with the supplier's operations and planning staff. (Water Code Section 10631(f), 1-L)

The City has designated Conservation Specialist who is responsible for water conservation coordination. The City also continues to be involved in water conservation programs implemented by MWA.

13. DMM 13 – Water Waste Prohibition

Definition – Implementation methods shall be enacting and enforcing measures prohibiting gutter flooding, sales of automatic (self-regenerating) water softeners, single pass cooling systems in new connections, non-recirculating systems in all

new conveyer car wash and commercial laundry systems and non-cycling decorative water fountains. (Water Code Section 10631(f), 1-M)

As noted in detail in Section 8.2 of this UWMP, Sections 17.60 (Landscape Water Conservation Ordinance) and 8.20 (Water Conservation Plan) of the City's Municipal Code address water waste prohibition in detail (Appendices G and H).

14. DMM 14 – Residential ULFT Replacement Program

Definition – An Implementation program for replacement of existing high-water-using toilets with ultra-low-flush toilets (1.6 gallons or less) in residential, commercial and industrial buildings shall be enacted. Such programs would be at least as effective as offering rebates of up to \$100 for each replacement that would not have occurred without the rebate, or requiring the replacement at time of resale, or requiring the replacement at the time of change of service. (Water Code Section 10631(f), 1-N)

MWA offers rebates of \$165 for each high efficiency toilet installed to both single family and multi-family residential customers to encourage them to replace older, high volume toilets with new, high-efficiency models.

7.3 WATER USE EFFICIENCY EFFECTIVENESS

MWA and AWAC assist in the development of DMM implementation plans for cost effective BMPs. Once the potential water savings have been quantified, programs can be developed to target potential savings. Quantifiable DMM programs include ULFT and low-flow showerhead retrofits, water audits and conservation pricing. Programs and activities that are not quantifiable, but known to save water, include public information, school education, conservation coordinator, water waste prohibitions, and metering with commodity rates.

Water use efficiency is an integral part of water supply planning and operations. The City works to improve the understanding of costs and benefits of conservation so that investment decisions are efficient and effective at meeting program goals. As a cooperative member of California's conservation community, the City supports MWA's and AWAC's significant contributions to the development and coordination of regional water use efficiency activities.

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8 WATER SHORTAGE CONTINGENCY PLAN

8.1 INTRODUCTION

California's extensive system of water supply infrastructure, its reservoirs, groundwater basins, and inter-regional conveyance facilities, mitigates the effect of short-term dry periods. Defining when a drought begins is a function of drought impacts to water users. Drought is a gradual phenomenon. Although droughts are sometimes characterized as emergencies, they differ from typical emergency events. Droughts occur slowly, over a multiyear period. Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline. In addition to climate, other factors that can cause water supply shortages include earthquakes, chemical spills, and energy outages at treatment and pumping facilities. The City has included the probability of catastrophic outages in its reliability planning.

8.2 URBAN WATER SHORTAGE CONTINGENCY PLAN

Stages of Action

The City of Adelanto has proposed a four stage plan of action for implementation in the event of a long term drought or a significant loss of supply, including losses of up to 50 percent of the water supply. The four stages include:

1. Stage 1 – This stage becomes effective when the City declares a water shortage exists. In this stage, the APUA will recommend a voluntary 10 percent reduction in water use based on an established baseline year determined by the City at the time Stage 1 is implemented. Simultaneously with this declaration, the City will begin a public outreach campaign to encourage the efficient use of water. This will include articles published in local newspapers, information posted on the City's website, literature distributed to customers and educational conservation programs held on school campuses.
2. Stage 2 – The second stage is entered when the Stage 1 reduction goal has not been met for two consecutive years of a drought. Public awareness efforts will continue and a survey will be conducted on Stage 1 efforts. The City will establish a water conservation advisory committee comprised of officials from the Adelanto Public Utilities Authority and the City of Adelanto.
3. Stage 3 – The third stage goes into effect if the water shortage continues for four consecutive years. This stage recommends 10% mandatory and 20% voluntary reductions in water use. A plan and Ordinance to enforce penalties for excessive water use will be developed as part of Stage 3. The Ordinance will include prohibitions against specific wasteful practices such as gutter flooding, open hose car washing, driveway washdowns and other similar practices as described in further detail below (under the heading "Water Conservation Plan"). During Stage 3, the City will also analyze the impacts of the Conservation Plan on revenue and expenditures and propose measures to overcome those impacts, if necessary.

4. Stage 4 – Stage four will be declared if a water shortage continues for one year beyond Stage 3. In this stage, the City shall determine the extent of any required additional conservation measures needed to address water supply reductions of up to 50 percent.

Consumer compliance with all stages will be enforced through penalties, as outlined in Section 8.4 of this UWMP.

Table 8.2-1 shows the use reduction stages as a guideline for recommending the appropriate conservation stage and water conservation target.

**Table 8.2-1
Water Use Reduction Stages**

% Shortage Condition	Water Conservation Stage	Type of Use Reduction Program
Up to 10%	1 and 2	Voluntary/ Mandatory
10% to 20%	3	Mandatory
20% to 50%	4	Mandatory

Water Conservation Plan

Chapter 8.20 (Appendix H) of Adelanto’s Municipal Code entitled “Water Conservation Plan”⁵² sets forth the rules and regulations governing the use of water in the City, even during non-drought times. The Code also requires adherence to the City’s Landscape Water Conservation Ordinance contained within Section 17.60 of the Municipal Code (Adopted by Ordinance No. 441 – Appendix G). This section of the City’s Municipal Code specifically requires all water users to abide by the following water conservation measures (even during non-drought times):

1. The use of water for any purpose shall not result in flooding or unnecessary runoff in gutters, driveways, streets or adjacent lands.
2. Lawns, trees, shrubs, and other landscaping shall not be watered beyond what they need for growth and to sustain life, and water shall not be permitted to pool or to run off property onto streets or adjacent land.
3. Sidewalks, walkways, driveways, parking areas, patios, porches or verandas or any other like area shall not be washed off with water from hoses or by any other means. The exception to this shall be the washing of flammable or other similar dangerous substances that require direct hose flushing using recognized safety control measures for the benefit of the public health and safety. Notification to the City of such wash down is required.

⁵² The City’s Code can be accessed here:

[http://www.amlegal.com/nxt/gateway.dll/California/adelanto_ca/cityofadelantocaliforniamunicipalcode?f=templates\\$fn=default.htm\\$3.0](http://www.amlegal.com/nxt/gateway.dll/California/adelanto_ca/cityofadelantocaliforniamunicipalcode?f=templates$fn=default.htm$3.0)

4. Water, sprinkling, aerial watering or irrigating of any landscaped or vegetated areas, including lawns, trees, shrubs, grass, ground cover, plants, vines, gardens, vegetables, flowers, or other landscaping shall not occur between the hours of 9:00 a.m. and 6:00 p.m. during the months of April through September; provided, however, that these restrictions shall not apply to hand-held hose or drip irrigation systems or to establishment of new lawns, landscaping, or gardens.
5. Non-commercial washing of privately owned vehicles, trailers, motor homes, buses, boats and mobile homes is prohibited except from a bucket, and except that a hose equipped with an automatic shut-off nozzle may be used for a quick rinse.
6. Water shall not be used to clean, fill, operate or maintain levels in decorative fountains unless such water is for replenishment of a recycling system.
7. Water lines, faucets, and other facilities shall be maintained so that they do not leak water. Existing leaks shall be repaired in a timely manner.
8. Restaurants, other food establishments, or other public places where food is served, shall not routinely provide glasses of drinking water to customers unless specifically requested by the customer.
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 be used in an efficient manner. The use of aerial type sprinklers is not recommended but, if used, shall not be operated between the hours of 9:00 a.m. and 6:00 p.m.
10. All new residential, commercial and industrial construction shall be equipped with low-flush toilets and low-flow showers and faucets.
11. Water used for cooling systems must be recycled to the extent possible.
12. Evaporation resistant covers are required for all new swimming pools and hot tubs and are encouraged to be installed for existing pools. The covers required by this Chapter shall, at the time of purchase, installation and all subsequent maintenance, meet or exceed current standards and specifications for swimming pool, spa and hot tub covers adopted by the American Society for Testing and Materials (ASTM).
13. Hotels/motels are required to post a notice in substantially the form provided by the City urging guests to conserve water.
14. All current and future water customers are encouraged to install flow restrictors or pressure reducers and to install toilet tank displacement devices (dams, bottles or bags), and as appliances or fixtures wear out, replace them with water-saving models.
15. Parks, schools, golf courses, cemeteries, school grounds and all public use lands shall not irrigate between the hours of 9:00 a.m. and 6:00 p.m. during the

months of April through September inclusive and are encouraged to use water conservation irrigation equipment.

16. The use of drought tolerant or native plant material is encouraged for exterior landscaping in all new residential construction, and required for new commercial and industrial construction.
17. The use of low precipitation sprinkler heads, bubblers, drip irrigation and timing devices are required in the exterior landscaping in all new residential, commercial and industrial construction.
18. At least fifty percent (50%) of all new model homes shall include as a part of the exterior landscape development low water use, drought-tolerant or native plants.
19. Projects, including Commercial and Planned Unit Developments, which utilize recycled water from sewage treatment or agricultural operations, may receive an exemption from Subsections 15 through 18 of this Section by approval of the City Council.

Health and Safety Requirements

The primary goal of the City's water system is to preserve the health and safety of its personnel and the public. Meeting this goal is a continuous function of the system – before, during and after a disaster or water shortage. Fire suppression capabilities will continue to be maintained during any water shortage contingency stage. Some water needs are more immediate than others. The following list of public health needs and the allowable time without potable water is a guideline and will depend on the magnitude of the water shortage:

- Hospitals – continuous need
- Emergency shelters – immediate need
- Kidney dialysis – 24 hours
- Drinking water – 72 hours
- Personal hygiene, waste disposal – 72 hours

Based on commonly accepted estimates of interior residential water use in the United States, Table 8.2-2 indicates per capita health and safety water requirements. During the initial stage of a shortage, customers may adjust either interior and/or outdoor water use to meet the voluntary water reduction goal.

**Table 8.2-2
Per Capita Health and Safety Water Quantity Calculations**

Item	Non-Conserving Fixtures		Habit Changes ^[1]		Conserving Fixtures ^[2]	
Toilet	5 flushes x 5.5 gpf	27.5	3 flushes x 5.5 gpf	16.5	5 flushes x 1.6 gpf	8.0
Shower	5 min. x 4.0 gpm	20.0	4 min. x 3.0 gpm	12.0	4 min. x 2.5 gpm	10.0
Washer	12.5 gpcd	12.5	11.5 gpcd	11.5	11.5 gpcd	11.5
Kitchen	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Other	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Total		68.0		48.0		37.5
CCF per capita per year		33.0		23.0		18.0

gpcd = gallons per capita per day / gpf = gallons per flush / gpm = gallons per minute
CCF = hundred cubic feet (approximately 748 gallons)

^[1] Reduced shower use from shorter and reduced flow. Reduced washer use from fuller loads.

^[2] Fixtures include ULF 1.6 gpf toilets, 2.5 gpm showerheads, and efficient clothes washers.

Priority by Use

Conditions prevailing in the City of Adelanto service area require that available water resources be put to maximum beneficial use to the extent possible. The waste, unreasonable use, or unreasonable method of use, of water should be prevented and water conservation and water use efficiency is encouraged with a view toward maximizing reasonable and beneficial use thereof in the interests of the people of the City and for the public welfare. Preservation of health and safety will be a top priority for the City.

8.3 ESTIMATE OF MINIMUM SUPPLY FOR NEXT THREE YEARS

The Mojave Water Agency has projected a reliable supply of water during all multiple dry years through 2035. Consequently, MWA does not anticipate any problems in meeting the City's demands during multiple dry years occurring over the next three years. With that in mind, the information presented below has been extracted from Table 5.2-3.

**Table 8.3-1
3-Year Estimated Water Supply Based on
Driest 3-Year Historic Sequence in AFY**

Water Supply Sources	Normal Years			Multiple Dry Years		
	2011	2012	2013	2011	2012	2013
Local (Groundwater)	5,408	5,940	6,492	5,721	6,089	6,457
Total City Water Supply	5,408	5,940	6,492	5,721	6,089	6,457

Source: Projections are interpolated from data in Tables 5.2-1 and 5.2-3

8.4 Catastrophic Supply Interruption Plan - Water Shortage Emergency Response

A water shortage emergency could result from a drought or a catastrophic event such as an earthquake, transmission facility failure, regional power outage, flooding, supply contamination from chemical spills, or other adverse conditions.

The City recognizes, that in the event of an emergency such as an earthquake, the integrity of the water system can be breached causing disruptions in water supply. Because of the possibility of emergencies from both man-made and natural causes, water utility emergency planning is of utmost importance. The City of Adelanto prepared an Emergency Operations Plan to comply with the Standardized Emergency Management System (SEMS) developed by the State of California, and the National Incident Management System (NIMS) developed by the Federal Emergency Management Agency. The plan includes information on the Emergency Operations Organization, the roles and responsibilities of each section, and includes operational checklists to guide response actions.⁵³

In the event of an emergency, the City Manager will assume overall responsibility for coordinating the City's response. The City's Director of Public Utilities will coordinate all activities relating to water operations. The City of Adelanto has also entered into mutual aid agreements with other local cities and the County of San Bernardino, which may be implemented during an emergency, if necessary.

8.4.1 Prohibitions, Penalties, and Consumption Reduction Methods

Chapter 8.20.050 of the City's Municipal Code stipulates that anyone who violates any provision of the City's water conservation code (Chapter 8.20) shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished in accordance with the provisions of Chapter 1.20 of the Code (Municipal Code Violations).

8.4.2 Revenue and Expenditure Impacts and Measures to Overcome those Impacts

The Adelanto Water Authority Fund provides funding for the operation and maintenance of the City's water distribution system under an enterprise fund separate from the City's General Fund. In governmental accounting, enterprise funds are used to account for operations that are operated and financed in a manner similar to private business enterprises where the intent is that the costs (expenses including depreciation) of providing goods or services to the general public on a continuing basis are to be financed or recovered primarily through user charges; or where periodic determination of revenues

⁵³ Information of the City's Emergency Operations Plan can be found in Adelanto's 2010 Hazard Mitigation Plan available on the City's website at:
<http://www.ci.adelanto.ca.us/vertical/Sites/%7BB5D4A1FE-8A01-4BEF-B964-5A44B9339C72%7D/uploads/%7B39A6B805-407E-4687-8AFD-5C5CC98707F5%7D.PDF>

earned, expenses incurred, and/or net income is deemed appropriate, for capital maintenance, public policy, management control accountability or other purposes.⁵⁴

The Water Authority Enterprise Fund also serves as an emergency source of funds in the event of an extreme water shortage. Should an extreme shortage be declared and a large reduction in water sales occur for an extended period of time, the City would re-examine its water rate structure and monitor projected expenditures. If needed, the City would consider increases in rates to overcome revenue lost.

8.5 WATER SHORTAGE CONTINGENCY ORDINANCE

As previously noted, the City's Municipal Code, adopted Ordinances and Four Stage Water Shortage Contingency Plan of Action address the use of water during periods of extreme drought including projected shortages of up to 50 percent.

8.6 MECHANISMS TO DETERMINE REDUCTIONS IN WATER USE

During normal water supply conditions, production figures are recorded daily and are incorporated into the City's water production report. During water shortages, water usage will continue to be closely monitored on a daily or, if necessary, hourly basis depending on the severity of the drought. Production data from the City's wells can be retrieved on an hourly basis. This will allow City staff to determine the effects of a reduction on water production within the system.

During a shortage resulting from a disaster, production figures will be monitored on an ongoing basis. The City's SCADA system will provide prompt warning of any critical conditions. Once a shortage stage is implemented, actual reductions in water production and usage can be determined based on the SCADA system monitoring. Reports will be provided on a daily basis to the City's Director of Utilities.

⁵⁴ Enterprise fund information extracted from City's APUA Independent Auditor's Report prepared by Moss, Levy and Hartzheim LLP, Certified Public Accountants, for the period ending June 30, 2009; the report is available on the City's website at: <http://www.ci.adelanto.ca.us/vertical/Sites/%7BB5D4A1FE-8A01-4BEF-B964-5A44B9339C72%7D/uploads/%7BEEFAA21A-E950-4EA2-AA43-11A9E2B3F4C1%7D.PDF>

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9 WATER RECYCLING

9.1 RECYCLED WATER IN SOUTHERN CALIFORNIA

The Southern California region generates large quantities of treated wastewater on a daily basis. This treated wastewater is considered a reliable and drought-proof water source and could greatly reduce the region's and the City's reliance on the use of limited groundwater supplies. As technological improvements continue to reduce treatment costs, and as public perception and acceptance continue to improve, numerous reuse opportunities should develop. Recycled water is a critical part of the California water picture because of the region's high likelihood of drought. As treatment technology continues to improve, demand for recycled water will also increase.

9.2 COORDINATION OF RECYCLED WATER IN SERVICE AREA

Adelanto does not currently use recycled water for municipal purposes nor does the City provide recycled water to its customers. However, the City is considering construction of a future recycled water system as described in the following sections of this Chapter.

9.3 WASTEWATER COLLECTION AND TREATMENT

Wastewater from Adelanto's water service area is collected and treated at the City's wastewater treatment plant. The City also operates and maintains the localized sewer collection pipelines that feed into the wastewater treatment plant. The City's sewer system includes approximately 33.5 miles of gravity sewer lines, one lift station, associated force mains and an existing 1.5 MGD wastewater treatment plant.⁵⁵ There are also approximately 775 septic tank systems in the northern end of the City's service area. These septic systems might be connected to the City sewer system in the future.⁵⁶

Municipal wastewater is generated in Adelanto's service area from a combination of residential, commercial, and industrial sources. The quantities of wastewater generated are generally proportional to the population and water usage in the service area. It is estimated that Adelanto's customers generate wastewater roughly proportional to 60 to 70 percent of the City's water demand. Table 9.3-1 projects wastewater flows generated within the City's service area through 2035. The estimates included in Table 9.3-1 compare favorably with similar estimates in the City's December 2007 Sewer Master Plan.⁵⁷

⁵⁵ Per December 2007 City of Adelanto Sewer Master Plan prepared by Wilson So and Associates, Chapter 3, page 3-1.

⁵⁶ Ibid., page 3-1

⁵⁷ Ibid. page 3-2. The sewer master plan notes a current (2004/05) flow of 2.1 MGD or approximately 2,352 AFY. The City's population in 2004/2005 averaged about 22,325 (refer to Table 1 of Appendix F of this UWMP) compared with a 2010 population of 31,765. The projected 2010 wastewater flow, based on 2007 Sewer Master Plan estimates would therefore be 3,347 AFY (2,352 AFY x (31,765/22,325)), which compares favorably with 3,163 AFY year 2010 estimate shown in Table 9.3-1.

**Table 9.3-1
City of Adelanto
Historic and Projected Wastewater Collection in AFY**

Item	2010	2015	2020	2025	2030	2035
Potable Water Demand	4,866	6,537	8,122	9,443	10,763	12,084
Estimated Volume of Wastewater Collected	3,163	4,249	5,279	6,138	6,996	7,855

Note: 2010 is actual demand from Table 2.2-1; water demands for subsequent years are from Table 5.3-1; Wastewater collected is assumed to equal 65% of the potable water demand.

9.4 REGIONAL RECYCLED WATER

Estimated Volume of Wastewater Collected

Since Adelanto relies on groundwater for 100 percent of its water supply, the City supports the efforts of the regional water management agencies to utilize recycled water in the High Desert region of San Bernardino County such as the Victor Valley Wastewater Reclamation Authority (VWVRA) regional efforts. VWVRA generates approximately 14.5 MGD of tertiary treated water at its treatment plant and uses recycled water at its facility for composting, dust control and fire protection and additionally serves a local golf course. VWVRA also began serving recycled water to the High Desert Power Plant for use in its cooling system in 2009. Most of the treated wastewater effluent produced by VWVRA is recharged to the groundwater basin. Because the Mojave Basin is essentially a closed basin, this recharge operation benefits all regional water agencies by contribute to the overall water supply of the area.⁵⁸

9.4.1 2005 Projection Comparison to 2010 Actual Recycled Water Use

The City of Adelanto did not operate a recycled water system in 2005 and did not project any recycled water use for 2010.

9.4.2 Potential Additional Uses of Recycled Water

The City of Adelanto is currently constructing a 2.5 million gallon per day upgrade to its existing 1.5 MGD wastewater treatment plant that will increase treatment capabilities to 4.0 million gallons per day and produce treated water that can be used for lawn/public parks irrigation, construction and dust control and other beneficial uses.⁵⁹ The City is currently planning infrastructure improvements, such as recycled water storage tanks and transmission lines, to provide non-potable water for irrigation, construction and other beneficial uses throughout the City. Completion of the water treatment plant is expected in 2012.

⁵⁸ Information on regional recycled water usage has been extracted from the MWA Final 2010 UWMP dated June 2011, pages 4-13 and 4-14

⁵⁹ Per City of Adelanto website:

http://www.ci.adelanto.ca.us/index.asp?Type=B_BASIC&SEC={F8909B8C-A37E-460E-9003-E5BD48A8738A}

9.4.3 Encouraging and Optimizing Recycled Water Use

In addition to the City of Adelanto's on-going efforts, other regional studies of water recycling opportunities throughout Southern California provide a context for promoting the development of water recycling plans. It is recognized that broad public acceptance of recycled water requires continued education and public involvement.

Public Education

The City continues to participate in MWA's public education and school education programs, which include learning programs on water recycling. MWA staff reaches out to area residents including those in the City, through a variety of public information programs. These programs include information on present and future water supplies, demands for a suitable quantity and quality of water, including recycled water, and the importance of implementing water efficient techniques and behaviors. Through MWA, water education programs have reached area students with grade-specific programs including information on recycled water.

Financial Incentives

The implementation of recycled water projects involves a substantial upfront capital investment for planning studies, environmental impact reports, engineering design and construction before there is any recycled water to market. For some water agencies, these capital costs exceed the short-term expense of purchasing additional water supplies.

The establishment of new supplemental funding sources through federal and state programs can provide significant financial incentives for local agencies to develop and make use of recycled water. Potential sources of funding include federal and state funding opportunities. These funding sources include the United States Bureau of Reclamation, California's Proposition 13 Water Bond and the State Revolving Fund. These funding opportunities may be sought by the City or possibly more appropriately by regional agencies. The City will continue to support seeking funding for regional water recycling projects and programs.

9.5 OPTIMIZING RECYCLED WATER USE

As previously noted, the majority of recycled water in the High Desert is used for recharging the Basin, with some landscape and golf course irrigation. However, future recycled water use can increase by requiring dual piping in new developments, retrofitting existing landscaped areas and constructing recycled water pumping stations and transmission mains to reach areas far from the treatment plants, pending the availability of funding.

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APPENDICES

Appendix A

Urban Water Management Planning Act of 1983
as Amended to 2010

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CALIFORNIA WATER CODE DIVISION 6

PART 2.6. URBAN WATER MANAGEMENT PLANNING

All California Codes have been updated to include the 2010 Statutes.

CHAPTER 1.	GENERAL DECLARATION AND POLICY	10610-10610.4
CHAPTER 2.	DEFINITIONS	10611-10617
CHAPTER 3.	URBAN WATER MANAGEMENT PLANS	
Article 1.	General Provisions	10620-10621
Article 2.	Contents of Plans	10630-10634
Article 2.5.	Water Service Reliability	10635
Article 3.	Adoption and Implementation of Plans	10640-10645
CHAPTER 4.	MISCELLANEOUS PROVISIONS	10650-10656

WATER CODE

SECTION 10610-10610.4

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2. (a) The Legislature finds and declares all of the following:

- (1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- (2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
- (3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.
- (4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.
- (5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
- (6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.
- (7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
- (8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
- (9) The quality of source supplies can have a significant impact

on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

WATER CODE

SECTION 10611-10617

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city

and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

WATER CODE

SECTION 10620-10621

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621. (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water

supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

(c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

WATER CODE

SECTION 10630-10634

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) (1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

- (A) An average water year.
- (B) A single dry water year.
- (C) Multiple dry water years.

(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

- (A) Single-family residential.
- (B) Multifamily.
- (C) Commercial.
- (D) Industrial.
- (E) Institutional and governmental.
- (F) Landscape.
- (G) Sales to other agencies.
- (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

- (A) Water survey programs for single-family residential and multifamily residential customers.
- (B) Residential plumbing retrofit.
- (C) System water audits, leak detection, and repair.
- (D) Metering with commodity rates for all new connections and retrofit of existing connections.
- (E) Large landscape conservation programs and incentives.
- (F) High-efficiency washing machine rebate programs.
- (G) Public information programs.
- (H) School education programs.
- (I) Conservation programs for commercial, industrial, and institutional accounts.

- (J) Wholesale agency programs.
- (K) Conservation pricing.
- (L) Water conservation coordinator.
- (M) Water waste prohibition.
- (N) Residential ultra-low-flush toilet replacement programs.
- (2) A schedule of implementation for all water demand management measures proposed or described in the plan.
- (3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.
- (4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.
- (g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:
 - (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.
 - (2) Include a cost-benefit analysis, identifying total benefits and total costs.
 - (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.
 - (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.
- (h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.
 - (i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
 - (j) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivisions (f) and (g) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California,"

dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

(k) Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

10631.1. (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

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

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

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

(4) (A) Notwithstanding paragraph (1), the department shall

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

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

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

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

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

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

(i) Compliance on an individual basis.

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

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

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

the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

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

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

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

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

10631.7. The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers, environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

10632. (a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:

(1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions that are applicable to each stage.

(2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic

sequence for the agency's water supply.

(3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(6) Penalties or charges for excessive use, where applicable.

(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(8) A draft water shortage contingency resolution or ordinance.

(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

(b) Commencing with the urban water management plan update due December 31, 2015, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's

service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

WATER CODE

SECTION 10635

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

WATER CODE

SECTION 10640-10645

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630).

The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644. (a) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report those water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section

10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.

(2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).

(3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

10645. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

WATER CODE

SECTION 10650-10656

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

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

(b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the

"Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

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.

Appendix B

DWR Checklist Form

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Table I-2 Urban Water Management Plan checklist, organized by subject

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
PLAN PREPARATION				
4	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.	10620(d)(2)		Section 1, Pg. 4-6
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, 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. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		Section 1, Pg. 4 and Appendix C
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		Section 1, Pg. 4 and Appendix C
54	Provide supporting documentation that the urban water management 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 this urban water management plan.	10635(b)		Section 1, Pg. 4 If item no. 59 is met, then item 54 is met as well
55	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.	10642		Section 1, Pg. 4
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		Section 1, Pg. 4-5 and Appendix C
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642	What is the difference between item 7 and 58	Section 1, Pg. 4
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Section 1, Pg. 5-6

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644(a)		Section 1, Pg. 4
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		Section 1, Pg. 4
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		Section 1, Pg. 6-7
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		Section 1, Pg. 6-9
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	Section 1, Pg. 9-10
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Section 1, Pg. 10
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		Section 1, Pg. 9-10
SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)		Section 5, Pg. 1 and Appendix F
2	<i>Wholesalers:</i> Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. <i>Retailers:</i> Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	Section 1, Pg. 4-5 Public Hearing held on June 22, 2011

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		Section 5, Pg. 5-6
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Section 6, Pg. 1-2
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	Section 5, Pg. 1-4
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		Section 5, Pg. 4-5
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	Section 2, Pg. 4-13 and Section 5, Pg. 2-4
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Section 2, Pg. 4-13
15	Indicate whether a groundwater management plan 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.	10631(b)(1)		Section 2, Pg. 10-11
16	Describe the groundwater basin.	10631(b)(2)		Section 2, Pg. 4-5
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		Section 2, Pg. 5-7 Appendix D

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate "not applicable" in the UWMP location column.	10631(b)(2)		Section 2, Pg. 1
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate "not applicable" in the UWMP location column.	10631(b)(2)		Not Applicable
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)		Section 2, Pg. 11-12
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	Section 2, Pg. 13
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		Section 4, Pg. 14
30	Include a detailed description of all 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, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		Section 4, Pg. 11-13
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		Section 4, Pg. 14
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		Section 9, Pg. 1-3
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)		Section 9, Pg. 1-2

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
46	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.	10633(b)		Section 9, Pg. 1-2
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		Section 9, Pg. 1
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		Section 2, Pg. 13 Section 9, Pg. 2
49	The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	10633(e)		Section 6, Pg. 2
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		Section 9, Pg. 3
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		Section 9, Pg. 3
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING ^b				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		Section 7, Pg 1-9
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		Section 4, Pg. 10-11 and Section 5, Pg. 1-3
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		Section 4, Pg. 11-13 and Section 7, Pg 1 -9

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		Section 8, Pg. 1-2
36	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's water supply.	10632(b)		Section 8, Pg. 5
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)		Section 8, Pg. 6-7
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)		Section 8, Pg. 2-3 and Appendix G-H
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)		Section 8, Pg. 1-2 and 6
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		Section 8, Pg. 6 and Appendix H
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)		Section 8, Pg. 6-7
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		Appendix G and H
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		Section 8, Pg. 7
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030	Section 3, Pg. 1-5

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
53	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, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		Section 5, Pg. 1-4
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Section 7, Pg 1-9
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		Section 7, Pg. 1-9
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631(f)(4)		Section 7, Pg. 9
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	Section 7, Pg 1-9
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Not Applicable

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.

Appendix C

Notice of Public Hearing, Resolution of Plan Adoption, Proof of
Publication of Public Hearing Notice and 60-day Notice of Public
Hearing Letter

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Cari Thomas
Mayor

Ed Camargo
Mayor Pro Tem

Steven R. Baisden
Council Member

Trinidad Perez
Council Member

Charles S. Valvo
Council Member

D. James Hart, Ph.D.
City Manager

April 21, 2011

County of San Bernardino Planning Department
Christine Kelly
Planning Director
385 N. Arrowhead Ave
San Bernardino, Calif. 92415

City of Adelanto 2010 Urban Water Management Plan Update

Dear Ms. Kelly:

The City of Adelanto is in the process of preparing our 2010 Urban Water Management Plan (UWMP) in accordance with the California Water Management Planning Act (Act) of 1983, as amended. The Act requires water suppliers to develop an UWMP every five years in years ending in zero and five.

Recent amendments to the Act require providing a 60-day notice to cities and the county in which we provide water service. This letter serves as that notice. We anticipate holding a public hearing on June 22, 2011 to receive comments and adopt this UWMP. If you have any questions or comments regarding the preparation of this UWMP please feel free to contact me at (760) 246-2300 Ext 3031 or our consultant preparing the Plan, Harvey Gobas of Psomas at (714) 751-7373.

Sincerely,

A handwritten signature in black ink, appearing to read "Rick Gomez", is written over a faint, larger signature.

Rick Gomez, AICP
Director of Development Services

Cc: City Council
City Manager
Harvey Gobas, Psomas

APUA RESOLUTION NO. 11-12

A RESOLUTION OF THE ADELANTO PUBLIC UTILITY AUTHORITY OF THE CITY OF ADELANTO, COUNTY OF SAN BERNARDINO, CALIFORNIA, APPROVING THE 2010 URBAN WATER MANAGEMENT PLAN ADOPTION AND ORDERING THE REPORT TO BE FILED WITH THE DEPARTMENT OF WATER RESOURCES

WHEREAS, the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et Seq., known as the Urban Management Planning Act) during the 1983-1984 Regular Session, and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the Adelanto Public Utility Authority is an Urban Supplier of water in excess of over 3,000 acre feet annually; and

WHEREAS, the Plan shall be periodically reviewed at least once every five years, and that the Adelanto Public Utility Authority shall make any amendments or changes to its plan which are indicated by the review; and

WHEREAS, the Adelanto Public Utility Authority has therefore, prepared and circulated for public review a draft Urban Water Management Plan and a properly noticed public hearing regarding said plan was held by the Adelanto Public Utility Authority on June 22, 2011; and

WHEREAS, the Adelanto Public Utility Authority did prepare and shall file said plan with the Department of Water Resources within 30 days of the date of adoption.

NOW, THEREFORE BE IT RESOLVED, the Adelanto Public Utility Authority does hereby resolve as follows:

Section 1. The Adelanto Public Utility Authority authorizes the adoption of its updated Urban Water Management Plan and orders the filing of the Plan with the California Department of Water Resources.

Section 2. The Adelanto Public Utility Authority is further authorized to implement the Water Conservation Programs as set forth in the 2010 Urban Water Management Plan, which includes water shortage contingency analysis and recommendations regarding necessary procedures, rules, and regulations to carry out effective and equitable water conservation and water recycling programs.

Section 3. The Adelanto Public Utility Authority is further authorized to declare a Water Shortage Emergency according to the Water Shortage Stages and Triggers indicated in the Plan, implement necessary elements of the Plan, and recommend additional regulations to carry out effective and equitable allocation of water resources.

PASSED APPROVED AND ADOPTED this 22nd day of June, 2011, by the following vote:



Cari Thomas, President



James Hart, Secretary of the Adelanto Public Utility Authority

APPROVED AS TO FORM:



Todd O. Litfin, City Attorney

APUA Resolution 11-12

Page 3

I, D. James Hart, Board Secretary of the Adelanto Public Utility Authority, California, do hereby certify that the foregoing Resolution No. 11-12 was duly and regularly adopted at a regular meeting of the Adelanto Public Utility Authority on this 22th day of June, 2011, by the following vote, to wit:

AYES: Council Members Baisden, Perez, Valvo, Mayor Pro Tem Camargo, and Mayor Thomas

NOES: None

ABSENT: None

ABSTAIN: None

IN WITNESS THEREOF, I hereunto set my hand affix the official seal of the Adelanto Public Utility Authority, on the 22th day of June, 2011.

A handwritten signature in black ink, appearing to read "D. James Hart", written over a horizontal line.

D. James Hart, Board Secretary

PROOF OF PUBLICATION

(2015.5 C.C.P.)

**STATE OF CALIFORNIA,
County of San Bernardino**

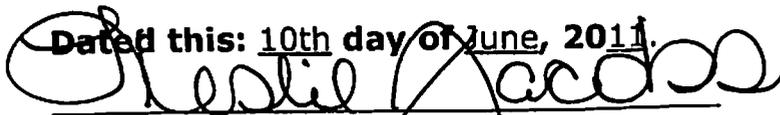
I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the publisher of the DAILY PRESS, a newspaper of general circulation, published in the City of Victorville, County of San Bernardino, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of San Bernardino, State of California, under the date of November 21, 1938, Case number 43096, that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

June 10

All in the year 2011.

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated this: 10th day of June, 2011.



Signature

Leslie Jacobs

This space is the County Clerk's Filing Stamp

**Proof of Publication of
NOTICE OF PUBLIC
HEARING**

**CITY OF ADELANTO
NOTICE OF PUBLIC
HEARING**

NOTICE IS HEREBY GIVEN that a public hearing for the following project will be held before the City of Adelanto City Council in the City Council Chambers, 11600 Air Expressway, Adelanto, California 92301, on Wednesday, June 22, 2011 at 7:00 p.m.

2010 Water Management Plan: The City Council will consider adoption of the draft 2010 Urban Water Management Plan (UWMP) as prepared in accordance with the California Urban Water Management Planning Act.

Any person may submit written comments to the City Council before the hearing or may appear and be heard before the City Council at the time of the hearing. If you challenge the City's action in court you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice or in written correspondence delivered to the City Council at or before the public hearing. At the hearing or during deliberations, the City Council could approve a modified project or changes to the project proposal.

The proposed project application plans may be reviewed during regular business hours at the Adelanto City Hall, Planning Department, located at 11600 Air Expressway, Adelanto, California 92301. Further information concerning this matter may be obtained by contacting the Planning Department at (760) 246-2300 Ext. 3028.

Published in the
Daily Press
June 10, 2011
(F-155)

Appendix D

Mojave Basin Judgment

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JUDGMENT AFTER TRIAL

JANUARY 10, 1996

**MOJAVE BASIN AREA ADJUDICATION
CITY OF BARSTOW, ET AL V. CITY OF ADELANTO, ET AL
RIVERSIDE COUNTY SUPERIOR COURT CASE NO. 208568**



CHAMBERS OF
VICTOR MICELI
JUDGE OF THE SUPERIOR COURT

Superior Court
STATE OF CALIFORNIA
COUNTY OF RIVERSIDE

COURTHOUSE
4050 MAIN STREET
RIVERSIDE, CALIFORNIA 92501

January 10, 1996

TO: ALL PARTIES LISTED ON THE ATTACHED MAILING LIST
FROM: E. MICHAEL KAISER, JUDGE *by ss*
SUBJECT: CITY OF BARSTOW VS CITY OF ADELANTO, Case No.: 208568

The Judgment in the above-entitled case was signed on January 10, 1996. Please find attached the amended two pages of Exhibit B, Table B-1.

Please find attached two amended pages of Exhibit B, Table B-1.

~~12/10/92~~
~~01/20/93~~
~~02/02/93~~
~~04/18/93~~
~~04/28/93~~
09/25/95

EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBAREA PRODUCER	BASE ANNUAL ¹	BASE ANNUAL ²	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
	PRODUCTION (ACRE-FEET)	PRODUCTION RIGHT (PERCENT)	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 S	126	0.1030	126	119	113	107	100
* VAN BURGER, CARL	710	0.5802	710	674	639	603	568
VAN LEEUWEN FAMILY TRUST	341	0.2787	341	323	306	289	272

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

~~12/10/92~~
~~01/20/93~~
~~02/02/93~~
~~01/10/93~~
~~01/28/92~~
09/25/95

EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN CENTRO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

CENTRO SUBAREA PRODUCER	BASE ANNUAL ¹	BASE ANNUAL ²	FREE PRODUCTION ALLOWANCES (ACRE-FBET)				
	PRODUCTION (ACRE-FBET)	PRODUCTION RIGHT (PERCENT)	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, PAY - EXECUTOR OF ESTATE OF WAYNE BARNES	243	0.4289	243	230	218	206	194
BROMMER, MARVIN	361	0.6372	361	342	324	306	288
BURNS, RITA J & PAMELA E	16	0.0282	16	15	14	13	12
CHAPA, LARRY R	96	0.1694	96	91	86	81	76
CHOI, YONG IL & JOUNG AE	38	0.0671	38	36	34	32	30
CHRISTISON, JOEL	75	0.1324	75	71	67	63	60
COOK, KWON W	169	0.2983	169	160	152	143	135
DE VRIES, NEIL	3,800	6.7070	3,800	3,610	3,420	3,230	3,040
DESERT COMMUNITY BANK	156	0.2753	156	148	140	132	124
DURAN, FRANK T	50	0.0883	50	47	45	42	40
GAINES, JACK	117	0.2065	117	111	105	99	93
GESIRIECH, WAYNE	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	131	124	117	110
GRIEDER, RAYMOND H & DORISANNE	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & MILLIE D	21	0.0371	21	19	18	17	16
GROEN, CORNELIS	1,043	1.8409	1,043	990	938	886	834
HANIFY, DBA - WHITE BEAR RANCH	152	0.2683	152	144	136	129	121
HARMSBN, JAMES & RUTH ANN	1,522	2.6863	1,522	1,445	1,369	1,293	1,217
HARPER LAKE COMPANY	1,433	2.5293	1,433	1,361	1,289	1,218	1,146

Steven A. Figueroa, President
Latino's Unidos M.A.P.A. Victor Valley
P.O. Box 520
Victorville, CA 92393-0520

Pryke Properties, Trustee
P.O. Box 400937
Hesperia, CA 92340-0937

Arthur G. Kidman, Esq.
Douglas J. Evertz, Esq.
McCormick, Kidman & Behrens
3100 Bristol St., #290
Costa Mesa, CA 92626-3033

Office of the County Counsel
of San Bernardino County
Paul M. St. John, Dep.
385 No. Arrowhead Ave.
San Bernardino, CA 92401

William J. Brunick, Esq.
Boyd L. Hill, Esq.
Brunick, Alvarez & Battersby
1839 Commercenter West
P.O. Box 6425
San Bernardino, CA 92412

Thomas P. McGuire, Esq.
Monteleone & McCrory
10 Universal City Plaza, #2500
P.O. Box 7806
Universal City, CA 91608-7806

James L. Markman, Esq.
William P. Curley, III, Esq.
Number One Civic Center Circle
P.O. Box 1059
Brea, CA 92622-1059

Robert E. Dougherty, Esq.
Eric S. Vail, Esq.
Covington & Crowe
1131 West 6th St., #300
Ontario, CA 91762

Arthur L. Littleworth, Esq.
Best, Best & Krieger
3750 University Ave., #400
Riverside, CA 92501

Michael Duane Davis, Esq.
Gresham, Varner, Savage
& Nolan
14011 Park Ave., #140
Victorville, CA 92392

Frederick A. Fudacz, Esq.
John Ossiff, Esq.
445 So. Figueroa St., Floor 31
Los Angeles, CA 90071-1602

Nino J. Mascolo, Esq.
So. Cal. Edison Co.
2244 Walnut Grove Ave.
P.O. Box 800
Rosemead, CA 91770

Steven B. Abbott, Esq.
Redwine & Sherrill
1950 Market St.
Riverside, CA 92501

Calvin R. House, Esq.
Lisa R. Klein, Esq.
Fulbright & Jaworski
865 So. Figueroa St., Fl. 29
Los Angeles, CA 90017-2571

Therese Exline Parker
P.O. Box 1318
Upland CA 91785-1318

Mark B. Salas
205 No. Acacia, #D
Fullerton, CA 92631

Office of the Attorney General
Marilyn H. Levin, Dep.
300 So. Spring St.
Floor 11, North Tower
Los Angeles, CA 90004

Joseph B. Vail
16993 Abby Lane
Victorville, CA 92392

Office of the Attorney General
Joseph Barbieri, Dep.
2101 Webster St., 12th Fl.
Oakland, CA 94612-3049

R. Zaiden Corrado, APC
By: Robert Corrado
420 N. Montebello Blvd. #204
Montebello, CA 90640

Edward C. Dygert, Esq.
Cox, Castle & Nicholson
2049 Century Park East
28th Floor
Los Angeles, CA 90067

1 BRUNICK, ALVAREZ & BATTERSBY
PROFESSIONAL LAW CORPORATION
2 1839 COMMERCENTER WEST
POST OFFICE BOX 6425
3 SAN BERNARDINO, CALIFORNIA 92412
TELEPHONE: (909) 889-8301 824-0623

FILED
RIVERSIDE COUNTY

4 William J. Brunick, (Bar No. 46289)
Boyd L. Hill, (Bar No. 140435)

JAN 10 1996

5 Attorneys for

Cross-Complainant
6 MOJAVE WATER AGENCY

ARTHUR A. BURNS, Clerk
By *Y.A. Burns* Y.A. Burns
Deputy

7
8 SUPERIOR COURT OF THE STATE OF CALIFORNIA
9 IN AND FOR THE COUNTY OF RIVERSIDE

10
11 CITY OF BARSTOW, et al,)

CASE NO. 208568

12 Plaintiff,)

ASSIGNED TO JUDGE KAISER
13 DEPT. 4 FOR ALL PURPOSES

14 v.)

JUDGMENT AFTER TRIAL

15 CITY OF ADELANTO, et al,)

16 Defendant.)

17 _____)
MOJAVE WATER AGENCY,)

18 Cross-complainant,)

19 v.)

20 ANDERSON, RONALD H. et al,)

21 Cross-defendants.)
22 _____)

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

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

Exhibit "C" - Engineering Appendix.

Exhibit "D" - Time Schedules.

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

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

Exhibit "G" - Subarea Obligations.

Exhibit "H" - Biological Resource Mitigation.

Exhibit "I" - Map Showing Potential Groundwater Recharge Areas

1 I. INTRODUCTION

2 A. The Complaint. The original complaint herein was filed
3 by the City of Barstow and Southern California Water Company
4 (collectively "Plaintiffs") in San Bernardino Superior Court, North
5 Desert District, on May 30, 1990 as Case No. BCV6672, and
6 transferred to Riverside County Superior Court on November 27,
7 1990. Plaintiffs allege that the cumulative water Production
8 upstream of the City of Barstow Overdrafted the Mojave River
9 system, and request an average Annual flow of 30,000 acre-feet of
10 surface water to the City of Barstow area. The complaint also
11 includes a request for a writ of mandate to require the Mojave
12 Water Agency ("MWA") to act pursuant to its statutory authority to
13 obtain and provide Supplemental Water for use within the Mojave
14 Basin Area.

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

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

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

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

17 Several non-stipulating parties requested a trial. On April
18 20, 1994, the Court issued a memorandum setting forth the trial
19 issues. This cause came on regularly for trial on February 6,
20 1995, and was tried in Department 4 of the above-entitled Court,
21 the Honorable E. Michael Kaiser, Judge, Presiding, without a jury.
22 Oral and documentary evidence was introduced on behalf of the
23 respective parties and the cause was argued and submitted for
24 decision.

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1 II. DECREE

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

3 A. JURISDICTION, PARTIES, DEFINITIONS.

4 1. Jurisdiction and Parties.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

25 i. Carry Over Right - The right of a Producer to delay
26 and accumulate the Production of such Producer's
27 share of a Subarea Free Production Allowance until
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1 and only until the following Year free of any
2 Replacement Water Assessment.

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

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

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

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

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

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

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

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

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

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

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

20 t. MWA - Cross complainant Mojave Water Agency.

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

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

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

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

6 x. Produce - To pump or divert water.

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

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

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

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

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

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

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

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

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

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

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- 1 ii. Subareas - The five Subareas of the Mojave Basin
2 Area -- Este, Oeste, Alto, Centro and Baja -- as
3 shown on Exhibit "A".
- 4 jj. Subarea Obligation - The average Annual amount of
5 water that a Subarea is obligated to provide to an
6 adjoining downstream Subarea or the Transition Zone
7 or, in the case of the Baja Subarea, the average
8 Annual Subsurface Flow toward Afton at the MWA
9 eastern boundary as set forth in Exhibit "G".
- 10 kk. Subsurface Flow - Groundwater which flows beneath
11 the earth's surface.
- 12 ll. Supplemental Water - Water imported to the Basin
13 Area from outside the Basin Area, water that would
14 otherwise be lost from the Basin Area but which is
15 captured and made available for use in the Basin
16 Area, or any Producer's share of Free Production
17 Allowance that is not Produced and is acquired by
18 Watermaster pursuant to this Judgment.
- 19 mm. Transition Zone - The portion of the Alto Subarea,
20 shown on Exhibit "A", that lies generally between
21 the Lower Narrows and the Helendale Fault.
- 22 nn. Watermaster - The Person(s) appointed by the Court
23 to administer the provisions of this Judgment.

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

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

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

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

9 Exhibit "C" - Engineering Appendix.

10 Exhibit "D" - Time Schedules.

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

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

13 Exhibit "G" - Subarea Obligations.

14 Exhibit "H" - Biological Resource Mitigation.

15 Exhibit "I" - Map Showing Potential Groundwater Recharge
16 Areas

17 B. DECLARATION OF HYDROLOGIC CONDITIONS.

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

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

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

3 C. DECLARATION OF RIGHTS AND OBLIGATIONS.

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

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

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

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

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

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

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

17 a. Secure Supplemental Water. MWA, separate and
18 apart from its duties as the initial Watermaster designated under
19 this Judgment, shall exercise its authority under Sections 1.5 and
20 15 of the MWA Act to pursue promptly, continuously and diligently
21 all reasonable sources to secure Supplemental Water as necessary to
22 fully implement the provisions of this Judgment.

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

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

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

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

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

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

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

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

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

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

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

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

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

6 b. All Producers have contributed to the Overdraft;

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

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

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

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

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

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

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

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

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

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

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

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

21
22 **III. INJUNCTION**

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

28 ///

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

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

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

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

1 IV. CONTINUING JURISDICTION

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

16
17 V. Physical Solution

18 A. GENERAL

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

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

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

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

1 percentages of the aggregate Base Annual Production for that
2 Subarea:

	<u>Judgment Year</u>	<u>Percentage</u>	
3			
4	1993-1994	First Full Year	100
5	1994-1995	Second Full Year	95
6	1995-1996	Third Full Year	90
7	1996-1997	Fourth Full Year	85
8	1997-1998	Fifth Full Year	80

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

24 B. ADMINISTRATION.

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

28 ///

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

26 k. Annual Report to Court.

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

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

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

18 Determinations and data required by:

- 19 i) Paragraph 24(c) (Makeup and Replacement Obligations)
- 20 ii) Paragraph 24(e) (Hydrologic Data Collection)
- 21 iii) Paragraph 24(g) (Purchase of and Recharge with
22 Supplemental Water)
- 23 iv) Paragraph 24(i) (Notice List)

24 Rules and regulations adopted pursuant to:

- 25 v) Paragraph 24(a) (Rules and Regulations)
- 26 vi) Paragraph 24(d) (Measuring Devices, etc.)
- 27 vii) Paragraph 24(s) (Storage Agreements)

28 Reports required by:

- 1 viii) Paragraph 24(j) (Annual Administrative Budget)
2 ix) Paragraph 24(n) (Transfers)
3 x) Paragraph 24(o) (Free Production Allowance)
4 xi) Paragraph 24(p) (Production Reports)
5 xii) Exhibit "D" (Prior Year Report)
6 xiii) Exhibit "F" (Transfers of Base Annual Production
7 Rights)
8 xiv) Exhibit "G" (Status of Subarea Obligation)
9 xv) Exhibit "H" (Biological Resource Mitigation)

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

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

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

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

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

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

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

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

7 r. Reallocation of Base Annual Production Rights.

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

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

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

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

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

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

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

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

27 ///

28 ///

1 C. ASSESSMENTS

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

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

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

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

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

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

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

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

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

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

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

3 28. Use of Replacement Water Assessment Proceeds and
4 Makeup Water Assessment Proceeds. The Proceeds of Replacement
5 Water Assessments and any interest accrued thereon shall only be
6 used for the purchase of Replacement Water for that Subarea from
7 which they were collected. In addition, the proceeds of
8 Replacement Water Assessments collected on account of Production in
9 the Transition Zone, except as provided in Exhibit "G", shall only
10 be used for the purchase of Replacement Water for the Transition
11 Zone, and the proceeds of Replacement Water Assessments collected
12 on account of Production in that portion of the Baja Subarea
13 downstream of the Calico-Newberry fault shall only be used for the
14 purchase of Replacement Water for that portion of the Baja Subarea
15 downstream of the Calico-Newberry fault. The proceeds of Makeup
16 Water Assessments and any interest accrued thereon shall only be
17 used for the purchase of Makeup Water to satisfy the Makeup
18 Obligation for which they are collected.

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

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

4 D. SUBAREA ADVISORY COMMITTEES.

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

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

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

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

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

10 E. TRANSFERABILITY.

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

16 F. MISCELLANEOUS PROVISIONS.

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

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

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

1 on the date of the order, decision or action.

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

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

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

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

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

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

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

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

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

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EXHIBIT A

MAP OF MOJAVE BASIN AREA

[INDEX MAP AND DETAIL SHEET CONSISTING OF 42
1" = 4,000' SCALE MAPS COVERING THE BASIN
AREA; THE MAP IS ON DISPLAY AT THE OFFICE OF
THE MOJAVE WATER AGENCY, 22450 HEADQUARTERS,
APPLE VALLEY, CA 92307 AND ON FILE WITH THE
COURT]

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EXHIBIT B

PRODUCTION TABLES

CONTENTS

TABLE B-1: TABLE SHOWING BASE ANNUAL PRODUCTION AND BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN EACH SUBAREA AND FREE PRODUCTION ALLOWANCES FOR EACH SUBAREA FOR THE FIRST FIVE YEARS AFTER ENTRY OF THE INTERLOCUTORY JUDGMENT

TABLE B-2: TABLE SHOWING TOTAL VERIFIED PRODUCTION, BASE ANNUAL PRODUCTION AND RECIRCULATED WATER PRODUCTION FOR AQUACULTURE AND FOR RECREATIONAL LAKES

~~12/30/92~~
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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION (ACRE-FEET)	BASE ANNUAL ² PRODUCTION RIGHT (PERCENT)	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
			FIRST YEAR	SECOND 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	475
DELPERDANG, ROBERT H	56	0.2550	56	53	50	47	44
DESERT DAWN MUTUAL WATER COMPANY	15	0.0683	15	14	13	12	12
GABTA, TRINIDAD	512	2.3317	512	486	460	435	409
GAYJIKIAN, SAMUEL & HAZEL	102	0.4645	102	96	91	86	81
GRACETOWN INVESTMENT CO - JETCO PROP FUND	752	3.4247	752	714	676	639	601
GUBLER, HANS	30	0.1366	30	28	27	25	24
HAL-DOR LTD	23	0.1047	23	21	20	19	18
HANDLEY, DON R & MARY ANN	73	0.3325	73	69	65	62	58
HART, MERRILL W	473	2.1541	473	449	425	402	378
HERT, SCOTT	276	1.2569	276	262	248	234	220
HI-GRADE MATERIALS	442	2.0129	442	419	397	375	353
HITCHIN LUCERNE, INC	16	0.0729	16	15	14	13	12
JAMS RANCH	28	0.1275	28	26	25	23	22

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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

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

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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ESTE SUBAREA PRODUCER	BASE ANNUAL 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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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ESTE SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

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

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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

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

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

OESTE SUBAREA PRODUCER	BASE ANNUAL 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					
OESTE SUBAREA TOTALS =	12,303	100					

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN ALTO SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

ALTO SUBARRA 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 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
CDFG - MOJAVE NARROWS REGIONAL PARK	2,107	1.7219	2,107	2,001	1,896	1,790	1,685
CDFG - MOJAVE RIVER FISH HATCHERY	20	0.0163	20	19	18	17	16
CLARK, KENNETH R	223	0.1822	223	211	200	189	178
CLEAR VIEW FARMS	501	0.4094	501	475	450	425	400
COPELAND, ET AL (C/O DON W. LITTLE)	175	0.1430	175	166	157	148	140
CRAMER, MARGARET MUIR	280	0.2288	280	266	252	238	224
CUNNINGHAM, WILLIAM	29	0.0237	29	27	26	24	23
DEXTER, CLAIR F	175	0.1430	175	166	157	148	140
DEXTER, J P	515	0.4209	515	489	463	437	412
DIBERNARDO, JOHN	203	0.1659	203	192	182	172	162
DOLCH, ROBERT & JUDY	426	0.3481	426	404	383	362	340
DOMBROWSKI, MICHAEL W & SUSAN M	19	0.0155	19	18	17	16	15
DOWSE, PHILIP	20	0.0163	20	19	18	17	16
EVENSON, EDWIN H & JOYCELAINE	70	0.0572	70	66	63	59	56
FISHER, DOLORES DR	48	0.0392	48	45	43	40	38
FISHER, JEROME	633	0.5173	633	601	569	538	506
FITZWATER, R E	291	0.2378	291	276	261	247	232
GARCIA, SONIA L	288	0.2354	288	273	259	244	230
GOMBZ, CIRIL - LIVING TRUST	330	0.2697	330	313	297	280	264
GREEN ACRES ESTATES	25	0.0204	25	23	22	21	20
GULBRANSON, MERLIN	163	0.1332	163	154	146	138	130
HELENDALE SCHOOL DISTRICT	18	0.0147	18	17	16	15	14
HESPERIA GOLF AND COUNTRY CLUB	678	0.5541	678	644	610	576	542
HESPERIA WATER DISTRICT	12,213	9.9808	12,213	11,602	10,991	10,381	9,770

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EXHIBIT B
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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
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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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
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
SUDMEYER, GLENN W	121	0.0989	121	114	108	102	96
SUMMIT VALLEY RANCH	452	0.3694	452	429	406	384	361
TATRO, RICHARD K & SANDRA A	280	0.2288	280	266	252	238	224
TATUM, JAMES B	829	0.6775	829	787	746	704	663
TAYLOR, ALLEN C / HAYMAKER RANCH	456	0.3727	456	433	410	387	364
THOMAS, S DALE	440	0.3596	440	418	396	374	352
THOMAS, WALTER	36	0.0294	36	34	32	30	28
THOMPSON, JAMES A	418	0.3416	418	397	376	355	334
THOMPSON, RODGER	76	0.0621	76	72	68	64	60
THRASHER, GARY	373	0.3048	373	354	335	317	298
THUNDERBIRD COUNTY WATER DISTRICT	118	0.0964	118	112	106	100	94
TURNER, ROBERT	70	0.0572	70	66	63	59	56
VAIL, JOSEPH B & PAULA B	126	0.1030	126	119	113	107	100
VAN BURGER, CARL	710	0.5802	710	674	639	603	568
VAN LEEUWEN FAMILY TRUST	341	0.2787	341	323	306	289	272

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

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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 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 ³ 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, HARVIN	361	0.6372	361	342	324	306	288
BURNS, RITA J & PAMELA E	16	0.0282	16	15	14	13	12
CHAFI, LARRY R	96	0.1694	96	91	86	81	76
CHOI, YONG IL & JOUNG AE	38	0.0671	38	36	34	32	30
CHRISTISON, JOEL	75	0.1324	75	71	67	63	60
COOK, KWON W	169	0.2983	169	160	152	143	135
DE VRIES, NEIL	3,800	6.7070	3,800	3,610	3,420	3,230	3,040
DESERT COMMUNITY BANK	156	0.2753	156	148	140	132	124
DURAN, FRANK T	50	0.0883	50	47	45	42	40
GAINES, JACK	117	0.2065	117	111	105	99	93
GBSIRIECH, WAYNE	121	0.2136	121	114	108	102	96
GORMAN, VIRGIL	138	0.2436	138	131	124	117	110
GRIEDER, RAYMOND H & DORISANNE	30	0.0530	30	28	27	25	24
GRILL, NICHOLAS P & MILLIE D	21	0.0371	21	19	18	17	16
GROEN, CORNELIS	1,043	1.8409	1,043	990	938	886	834
HANIFY, DBA - WHITE BEAR RANCH	152	0.2683	152	144	136	129	121
HARMSEN, JAMES & RUTH ANN	1,522	2.6863	1,522	1,445	1,369	1,293	1,217
HARPER LAKE COMPANY	1,433	2.5293	1,433	1,361	1,289	1,218	1,146

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

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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 & B	1,657	2.9246	1,657	1,574	1,491	1,408	1,325
REDDY, BOMMI V & KARUNA V	24	0.0424	24	22	21	20	19
ROWLAND, JAMES & HELEN	22	0.0388	22	20	19	18	17
RUISCH, DALE W	650	1.1473	650	617	585	552	520
SHIRKEY, ALAN G & MARY E	35	0.0618	35	33	31	29	28
SMITH, ROBERT A	43	0.0759	43	40	38	36	34
SOPPELAND, WAYNE	783	1.3820	783	743	704	665	626
SOUTHERN CALIFORNIA WATER COMPANY	11,309	19.9605	11,309	10,743	10,178	9,612	9,047
SPINK, WALTHALL	44	0.0777	44	41	39	37	35
ST CHARLES, DONALD B	609	1.0749	609	578	548	517	487
SUN 'N SKY COUNTRY CLUB	337	0.5948	337	320	303	286	269
TALLAKSON, WILLIAM V	17	0.0300	17	16	15	14	13
TILLEMA, HAROLD	874	1.5426	874	830	786	742	699
VAN DAM, ELBERT & SUSAN	722	1.2743	722	685	649	613	577
VAN LEEUWEN, JOHN	1,922	3.3923	1,922	1,825	1,729	1,633	1,537
VAN VLIET, HENDRIKA	820	1.4473	820	779	738	697	656
VANHOF, LUTHER C	23	0.0406	23	21	20	19	18
VERNOLA, PAT	3,116	5.4998	3,116	2,960	2,804	2,648	2,492
VISSER, ANNIE	91	0.1606	91	86	81	77	72
YANG, YOUNG MO	371	0.6548	371	352	333	315	296
YKEMA HARMSSEN DAIRY	1,000	1.7650	1,000	950	900	850	800

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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 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 ³ YEAR	SECOND ³ YEAR	THIRD ³ YEAR	FOURTH ³ YEAR	FIFTH ³ YEAR
AKE, CHARLES J & MARJORIE M	23	0.0333	23	21	20	19	18
ANGERSER, ROBERT J & PEGGY	24	0.0347	24	22	21	20	19
ANTELOPE VALLEY DAIRY	5,430	7.8597	5,430	5,158	4,887	4,615	4,344
ARGUELLES, ALFREDO	1,047	1.5155	1,047	994	942	889	837
ATCHISON, TOPEKA, SANTA FE RAILWAY CO	80	0.1158	80	76	72	68	64
BAGLEY, ROY	20	0.0289	20	19	18	17	16
BALDERRAMA, ALFRED & LINDA	250	0.3619	250	237	225	212	200
BALL, DAVID P	81	0.1172	81	76	72	68	64
BARAK, RICHARD	132	0.1911	132	125	118	112	105
BARBER, JAMES B	167	0.2417	167	158	150	141	133
BARSTOW CALICO K O A	24	0.0347	24	22	21	20	19
BAUR, KARL & RITA	26	0.0376	26	24	23	22	20
BEDINGFIELD, LYNDLELL & CHARLENE	56	0.0811	56	53	50	47	44
BENTON, PHILIP G	35	0.0507	35	33	31	29	28
BORGOGNO, STEVEN & LILLIAN B	1,844	2.6691	1,844	1,751	1,659	1,567	1,475
BOWMAN, EDWIN L	31	0.0449	31	29	27	26	24
BROWN, RONALD A	1,080	1.5632	1,080	1,026	972	918	864
BROWY, ORVILLE & LOUISE	33	0.0478	33	31	29	28	26
BRUINS, NICHOLAS	29	0.0420	29	27	26	24	23
CALICO LAKES HOMEOWNERS ASSOCIATION	1,031	1.4923	1,031	979	927	876	824
CALIF DEPT OF TRANSPORTATION	71	0.1028	71	67	63	60	56
CAMPBELL, M A & DIANNE	22	0.0318	22	20	19	18	17
CARTER, JOHN THOMAS	746	1.0798	746	708	671	634	596
CDFG - CAMP CADY	14	0.0203	14	13	12	11	11

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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
CHANG, TIMOTHY & JANE	18	0.0261	18	17	16	15	14
CHASTAIN, W C	100	0.1447	100	95	90	85	80
CHEYENNE LAKE, INC	122	0.1766	122	115	109	103	97
CHIAO MEI DEVELOPMENT	451	0.6528	451	428	405	383	360
CHO BROTHERS RANCH	758	1.0972	758	720	682	644	606
CHUANG, MARSHAL	70	0.1013	70	66	63	59	56
CONNER, WILLIAM H	25	0.0362	25	23	22	21	20
COOL WATER RANCH	76	0.1100	76	72	68	64	60
CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	447	0.6470	447	424	402	379	357
DAGGETT COMMUNITY SERVICES DISTRICT	235	0.3402	235	223	211	199	188
DALJO CORPORATION	31	0.0449	31	29	27	26	24
DAVIS, RONALD & DONNA	53	0.0767	53	50	47	45	42
DE JONG, ALAN L	1,648	2.3854	1,648	1,565	1,483	1,400	1,318
DENNISON, QUENTIN D	29	0.0420	29	27	26	24	23
DESERT LAKES CORPORATION - (LAKE DOLORES)	483	0.6991	483	458	434	410	386
DOCIMO, DONALD P & PATRICIA J	23	0.0333	23	21	20	19	18
DONALDSON, JERRY & BEVERLY	90	0.1303	90	85	81	76	72
ELLISON, SUSAN	15	0.0217	15	14	13	12	12
EVKHANIAN, JAMES H	110	0.1592	110	104	99	93	88
FAWCETT, EDWARD C	20	0.0289	20	19	18	17	16
FELIX, ALAN E & CAROL L	36	0.0521	36	34	32	30	28
PERRO, DENNIS & NORMA	32	0.0463	32	30	28	27	25
FRIEND, JOSEPH & DEBORAH	60	0.0868	60	57	54	51	48
FUNDAMENTAL CHRISTIAN ENDRAVOR	285	0.4125	285	270	256	242	228

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 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
GARCIA, DANIEL	23	0.0333	23	21	20	19	18
GOLD, HAROLD	249	0.3604	249	236	224	211	199
GRAVES, CHESTER B	32	0.0463	32	30	28	27	25
HAIGH, WHILLYN & MARGARET	32	0.0463	32	30	28	27	25
HALL, LARRY	23	0.0333	23	21	20	19	18
HARALIK, BESS & ROBERT	27	0.0391	27	25	24	22	21
HARDESTY, LESLIE E & BECKY J	47	0.0680	47	44	42	39	37
HARSON, NICHOLAS & MARY	30	0.0434	30	28	27	25	24
HARTER FARMS	1,083	1.5676	1,083	1,028	974	920	866
HARTER, JOE & SUE	738	1.0682	738	701	664	627	590
HARTLEY, LONNIE	19	0.0275	19	18	17	16	15
HARVEY, FRANK	38	0.0550	38	36	34	32	30
HENDLEY, RICK & BARBARA	48	0.0695	48	45	43	40	38
HIETT, PATRICIA J	16	0.0232	16	15	14	13	12
HILARIDES, FRANK	1,210	1.7514	1,210	1,149	1,089	1,028	968
HOLLISTER, ROBERT H & RUTH M	44	0.0637	44	41	39	37	35
HONG, PAUL B & MAY	95	0.1375	95	90	85	80	76
HORTON'S CHILDREN'S TRUST	106	0.1534	106	100	95	90	84
HORTON, JOHN MD	183	0.2649	183	173	164	155	146
HOSKING, JOHN W & JEAN	94	0.1361	94	89	84	79	75
HUBBARD, ESTER & MIZUNO, ARLEAN	28	0.0405	28	26	25	23	22
HUNT, RALPH M & LILLIAN F	31	0.0449	31	29	27	26	24
HUTCHISON, WILLIAM O	901	1.3042	901	855	810	765	720
HYATT, JAMES & BRENDA	210	0.3040	210	199	189	178	168

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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBARRA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBARRA PRODUCER	BASE ANNUAL 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
IRVIN, BERTRAND W	29	0.0420	29	27	26	24	23
J V A AIR INC	54	0.0782	54	51	48	45	43
JACKSON, RAY	20	0.0289	20	19	18	17	16
JOHNSON, JAMES R	247	0.3575	247	234	222	209	197
JUSTICE, CHRIS	6	0.0087	6	5	5	5	4
KAPLAN, ABRAHAM M	76	0.1100	76	72	68	64	60
KASNER, ROBERT	1,001	1.4489	1,001	950	900	850	800
KATCHER, AUGUST M & MARCELYNE	23	0.0333	23	21	20	19	18
KEMP, ROBERT & ROSE	32	0.0463	32	30	28	27	25
KIEL, MARY	34	0.0492	34	32	30	28	27
KIM, JOON HO	764	1.1059	764	725	687	649	611
KOSHAREK, JOHN & JOANNE	54	0.0782	54	51	48	45	43
LAKE JODIE PROPERTY OWNERS ASSOCIATION	254	0.3677	254	241	228	215	203
LAKE WAIKIKI	98	0.1419	98	93	88	83	78
LAKE WAINANI OWNERS ASSOCIATION	202	0.2924	202	191	181	171	161
LANGLEY, MICHAEL R	20	0.0289	20	19	18	17	16
LAWRENCE, WILLIAM W	45	0.0651	45	42	40	38	36
LBE, MOON & OKBEA	49	0.0709	49	46	44	41	39
LBE, VIN JANG T	630	0.9119	630	598	567	535	504
LESHIN, CONNIE & SOL	1,416	2.0496	1,416	1,345	1,274	1,203	1,132
LESHIN, SOL	1,997	2.8906	1,997	1,897	1,797	1,697	1,597
LEVINE, DR LESLIE	1,637	2.3695	1,637	1,555	1,473	1,391	1,309
LONG, BALLARD	35	0.0507	35	33	31	29	28
M BIRD CONSTRUCTION	41	0.0593	41	38	36	34	32

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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

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

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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL 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
RIBGER, WALTER M	62	0.0897	62	58	55	52	49
RIKUO CORPORATION	1,517	2.1958	1,517	1,441	1,365	1,289	1,213
ROSSI, JAMES L & NAOMI I	614	0.8887	614	583	552	521	491
ROTEX CONSTRUCTION COMPANY	2,529	3.6606	2,529	2,402	2,276	2,149	2,023
SAN BERNARDINO COUNTY BARSTOW - DAGGETT AIRPORT	168	0.2432	168	159	151	142	134
SANTUCCI, ANTONIO & WILSA	30	0.0434	30	28	27	25	24
SCOGGINS, JERRY	105	0.1520	105	99	94	89	84
SHEPPARD, THOMAS & GLORIA	217	0.3141	217	206	195	184	173
SHORT, CHARLES & MARGARET	54	0.0782	54	51	48	45	43
SHORT, JEFF	30	0.0434	30	28	27	25	24
SILVER VALLEY RANCH, INC	109	0.1578	109	103	98	92	87
SMITH, WILLIAM E	19	0.0275	19	18	17	16	15
SNYDER, KRYL K & ROUTH, RICHARD J	64	0.0926	64	60	57	54	51
SOUTHERN CALIFORNIA EDISON CO - AGRICULTURE	5,858	8.4792	5,858	5,565	5,272	4,979	4,686
SOUTHERN CALIFORNIA EDISON CO - INDUSTRIAL	4,565	6.6076	4,565	4,336	4,108	3,880	3,652
SOUTHERN CALIFORNIA GAS COMPANY	98	0.1419	98	93	88	83	78

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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

BAJA SUBAREA PRODUCER	BASE ANNUAL ¹ PRODUCTION	BASE ANNUAL ² PRODUCTION RIGHT	FREE PRODUCTION ALLOWANCES (ACRE-FEET)				
	(ACRE-FEET)	(PERCENT)	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, TAKRAKI	154	0.2229	154	146	138	130	123
SUNDOWN LAKES, INC	168	0.2432	168	159	151	142	134
SWARTZ, ROBERT & IRENE	50	0.0724	50	47	45	42	40
TAPIE, RAYMOND & MURIEL	18	0.0261	18	17	16	15	14
TAYLOR, TOM	503	0.7281	503	477	452	427	402
THAYER, SHARON	58	0.0840	58	55	52	49	46
THE 160 NEWBERRY RANCH CALIFORNIA, LTD	1,033	1.4952	1,033	981	929	878	826
TRIPLE H PARTNERSHIP	993	1.4373	993	943	893	844	794
UNION PACIFIC RAILROAD COMPANY	249	0.3604	249	236	224	211	199
VAN BASTELAAR, ALPHONSE	78	0.1129	78	74	70	66	62
VAN DIEST, CORNELIUS	934	1.3519	934	887	840	793	747
VAN LEEUWEN, JOHN	1,084	1.5690	1,084	1,029	975	921	867
VANDER DUSSEN, AGNES	1,792	2.5938	1,792	1,702	1,612	1,523	1,433
VAUGHT, ROBERT E & KAREN M	43	0.0622	43	40	38	36	34
VERNOLA, PAT	1,310	1.8962	1,310	1,244	1,179	1,113	1,048
WARD, ERNEST & LAURA	38	0.0550	38	36	34	32	30
WARD, RONNY H	130	0.1882	130	123	117	110	104
WEBER, F R & JUNELL	96	0.1390	96	91	86	81	76
WEBSTER, THOMAS M & PATRICIA J	24	0.0347	24	22	21	20	19
WEIDKNECHT, ARTHUR J & PEGGY A	79	0.1143	79	75	71	67	63
WESTERN HORIZON ASSOCIATES INC	1,188	1.7196	1,188	1,128	1,069	1,009	950
WESTERN ROCK PRODUCTS	31	0.0449	31	29	27	26	24

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EXHIBIT B
TABLE B-1
TABLE SHOWING BASE ANNUAL PRODUCTION AND
BASE ANNUAL PRODUCTION RIGHT OF EACH PRODUCER WITHIN BAJA SUBAREA
TOGETHER WITH FREE PRODUCTION ALLOWANCES
FOR FIRST FIVE YEARS OF THE JUDGMENT

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

- 1 Base Annual Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records, site inspection, land use estimates from 1987 and 1989 aerial photography and responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production Right expressed as a percentage of the Total Base Annual Production.
- 3 Values based on production ramp down of five percent (5%) per year. Free Production Allowance for the fifth year is equal to eighty percent (80%) of the Base Annual Production.

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

PRODUCER	TOTAL WATER 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 (ACRE-FEET)	RECIRCULATED ³ WATER
BROWY, ORVILLE & LOUISE	210	33	177
CALICO LAKES HOMEOWNERS ASSOCIATION	2,513	1,031	1,482
CDFG - CAMP CADY	102	14	88
CHEYENNE LAKE, INC	638	122	516
CRYSTAL LAKES PROPERTY OWNERS ASSOCIATION	6,575	447	6,128
DESERT LAKES CORPORATION - (LAKE DOLORES)	928	483	445
FUNDAMENTAL CHRISTIAN ENDEAVOR	440	285	155
HORTON'S CHILDREN'S TRUST	1,291	106	1,185
HORTON, JOHN MD	672	183	489
KIEL, MARY	188	34	154
LAKE JODIE PROPERTY OWNERS ASSOCIATION	2,805	254	2,551
LAKE WAIKIKI	400	98	302
LAKE WAINANI OWNERS ASSOCIATION	1,420	202	1,218
LEE, MOON & OKBEA	171	49	122
O F D L INC	434	109	325
RICE, DANIEL & MARY	614	121	493
SCOGGINS, JERRY	922	105	817
SILVER VALLEY RANCH, INC	455	109	346
SMITH, WILLIAM E	153	19	134
SUNDOWN LAKES, INC	1,109	168	941
TAPIE, RAYMOND & MURIEL	108	18	90
THAYER, SHARON	159	58	101
WET SET, INC	441	129	312
WLSR INC	678	133	545

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

PRODUCER	TOTAL WATER ¹ PRODUCTION	BASE ANNUAL ² PRODUCTION	RECIRCULATED ³ WATER
(ACRE-FEET)			
BAJA SUBAREA TOTALS =	23,426	4,310	19,116

- 1 Total Water Production is the reported maximum year production for each producer for the five year period 1986-1990. These values reflect the maximum production determined by one or more of the following: Southern California Edison records; James C. Hanson site inspection; land use estimates from 1989 aerial photography; responses to special interrogatories. All values are subject to change if additional information is made available, or if any value reported herein is found to be in error.
- 2 Base Annual Production as shown on Table B-1.
- 3 Amount shown is the difference between the Total Water Production and the Base Annual Production.

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EXHIBIT C

ENGINEERING APPENDIX

CONTENTS

- A. ADJUSTMENT OF FREE PRODUCTION ALLOWANCES
- B. DETERMINATION OF SURFACE FLOW COMPONENTS

TABLE C-1: MOJAVE BASIN AREA ADJUDICATION SUBAREA HYDROLOGICAL INVENTORY BASED ON LONG-TERM AVERAGE NATURAL WATER SUPPLY AND OUTFLOW AND CURRENT YEAR IMPORTS AND CONSUMPTIVE USE

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

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

14 Other factors considered included:

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

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

25 a. For those periods during which there was obviously no
26 Storm Flow, the entire recorded mean daily flows were assumed to be
27 Base Flow.
28

1 b. For the remaining Storm Flow periods, the Base Flow
2 component was taken as the area under the Base Flow Curve, except
3 that for those days within the Storm Flow period when the actual
4 mean daily discharge is less than the amount indicated by the Base
5 Flow Scalping Curves, then the actual recorded amount is used.

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

12	Storm Flow At Barstow Gage ¹ 13 <u>(Acre-Feet)</u>	Estimated Surface Flow at Waterman Fault 14 <u>(Acre-Feet)</u>
14	2,000	0
15	10,000	6,200
16	20,000	14,300
17	30,000	22,600
18	40,000	31,400
19	50,000	40,500
20	60,000	49,200
21	70,000	58,400
22	80,000	67,800
23	90,000	76,800
24	100,000	85,400

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26
27 ¹From Recorded Flow at USGS Gaging Station Mojave River at
28 Barstow. Relationship is based on single storm events. More than
one storm event separated by more than five day of zero flow will
be considered as separate storms.

1 3. Determination of Surface Flow Components at Afton.

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

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

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

26 a. For those periods during which there is obviously no
27 Storm Flow, the entire recorded mean daily flows were assumed to be
28 Base Flow.

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b. For the remaining Storm Flow periods, the Base Flow component was taken as the area under the Base Flow Curve except that for those days within the Storm Flow period when the actual mean daily discharge was less than the amount indicated by the Base Flow Scalping Curves, then the actual recorded amount was used.

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

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

WATER SUPPLY	Este	Oeste	Alto	Centro	Baja	Basin Totals
Surface Water Inflow						
Gaged	0	0	65,000	0	0	65,000 ¹
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	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	16,300	20,300	30,200	76,500
Urban	1,900	1,200	36,300	9,500	9,700	58,600 ⁶
Phreatophytes	0	0	5,100	900	1,500	7,500
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.

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EXHIBIT D

TIME SCHEDULES

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

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

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

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

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EXHIBIT E

LIST OF PRODUCERS AND THEIR DESIGNEES

EXHIBIT E

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

BALL, DAVID P
BAR H MUTUAL WATER COMPANY
BARAK, RICHARD
BARBER, JAMES B
BARNES, FAY
BARSTOW CALICO K O A
BASS, NEWTON T
BASTIANON, REMO
BASURA, STEVE
BAUR, KARL & RITA
BEDINGFIELD, LYNDELL&CHARLENE
BEINSCHROTH, A J
BELL, CHUCK
BENTON, PHILIP G
BORGOGNO, STEVEN & LILLIAN
BOWMAN, EDWIN L
BOYCE, KENNETH & WILLA
BROMMER, MARVIN
BROWN, BOBBY G & VALERIA R
BROWN, DOUG & SUE
BROWN, RONALD A
BROWY, ORVILLE & LOUISE
BRUINS, NICHOLAS
BURNS, BOBBY J & EVELYN J
BURNS, RITA J & PAMELA E
BURNS, ANNIE L
CALICO LAKES HOMEOWNERS
CALIF DEPT OF TRANSPORTATION
CAMPBELL, M A & DIANNE
CARDOZO, MANUEL & MARIA
CARTER, JOHN THOMAS
CASA COLINA FOUNDATION
CDFG - CAMP CADY

DESIGNEE

Same
Paul Nelson, President
Therese Parker, Esq.
Same
Kirtland Mahlum, Esq.
Robert L. Moore
Barbara Davisson, Business Manager
Same
Same
Same
Same
Same
Therese Parker, Esq.
Same
Therese Parker, Esq.
Same
Same
Billy Wyckoff
Alexander De Vorkin, Esq.
Same
Robert Dougherty, Esq.
Therese Parker, Esq.
Charles E. Schwartz
Marilyn Levin, Esq.

PRODUCER

CDFG - MOJAVE NARROWS REG.
CDFG - MOJAVE RIVER FISH
CENTER WATER CO
CHAFA, LARRY R
CHAMISAL MUTUAL
CHANG, TIMOTHY & JANE
CHASTAIN, W C
CHEYENNE LAKE, INC
CHIAO MEI DEVELOPMENT
CHO BROTHERS RANCH
CHOI, YONG IL & JOUNG AE
CHRISTISON, JOEL
CHUANG, MARSHAL
CLARK, KENNETH R
CLEAR VIEW FARMS
CLUB VIEW PARTNERS
CONNER, WILLIAM H
COOK, KWON W
COOL WATER RANCH
COPELAND, ETAL
CRAMER, MARGARET MUIR
CROSS, LAWRENCE E & SHARON I
CRYSTAL HILLS WATER COMPANY
CRYSTAL LAKES PROPERTY OWNERS
CUNNINGHAM, WILLIAM
DAGGETT COMMUNITY SERVICES
DAHLQUIST, GEORGE R
DALJO CORPORATION
DAVIS, Paul
DAVIS, RONALD & DONNA
DEJONG, ALAN L
DELPERDANG, ROBERT H
DENNISON, QUENTIN c/o Clegg, Frizell & Joke

DESIGNEE

Marilyn Levin, Esq.
Marilyn Levin, Esq.
Morgan Daniels
Same
Earl D. McCool
Same
Same
Michael Hayes
Maple Sia
Chung Cho Gong
Same
Same
Therese Parker, Esq.
Same
Terry Caldwell, Esq.
Manoucher Sarbaz
Same
Same
Paul Henderson, Esq.
Don W. Little
Terry Caldwell, Esq.
Same
Same
Russell Khouri
Same
Lawrence Alf, CSD Chairman
Therese Parker, Esq.
George Rubsch
Same
Same
Therese Parker, Esq.
Same
Same

PRODUCER

DESERT DAWN MUTUAL WATER COMPANY
DESERT LAKES CORPORATION - (LAKE DOLORES)
DESERT COMMUNITY BANK
DEVRIES, NEIL
DEXTER, CLAIR F
DEXTER, J P
DIBERNARDO, JOHN
DOCIMO, DONALD P & PATRICIA J
DOLCH, ROBERT & JUDY
DOMBROWSKI, MICHAEL W & SUSAN M
DONALDSON, JERRY & BEVERLY
DOSSEY, D A
DOWSE, PHILIP
DURAN, FRANK T
ELLISON, SUSAN
EVENSON, EDWIN H & JOYCELAINE
EVKHANIAN, JAMES H & PHYLLIA
FAWCETT, EDWARD C
FELIX, ALAN E & CAROL L
FERRO, DENNIS & NORMA
FISHER, DR DOLORES
FISHER, JEROME
FITZWATER, R E
FRIEND, JOSEPH & DEBORAH
FUNDAMENTAL CHRISTIAN ENDEAVOR
GAETA, TRINIDAD C/O BLUE BEAD FARMS
GAINES, JACK & MARY
GARCIA, DANIEL
GARCIA, SONIA L
GAYJIKIAN, SAMUEL & HAZEL
GESIRIECH, WAYNE
GILBERT, HERBERT & BERNICE
GOLD, HAROLD

DESIGNEE

Same
Terry Christianson
Same
Robert Dougherty, Esq.
Same
Same
Same
Terry Caldwell, Esq.
Same
Same
Same
Same
Same
Therese Parker, Esq.
Same
Same
Same
Same
Same
Same
Same
Same
Same
Robert Dougherty, Esq.
Same
Betty Brock
Therese Parker, Esq.
Same
Same
Same
Same
Therese Parker, Esq.
Same
Therese Parker, Esq.

PRODUCER

GOMEZ, CIRIL - LIVING TRUST
GORMAN, VIRGIL
GRACETOWN INVESTMENT CO - JETCO PROP FUND
GRAVES, CHESTER B
GREEN ACRES ESTATES
GRIEDER, RAYMOND H & DORISANNE
GRILL, NICHOLAS P & MILLIE D
GROEN, CORNELIUS
GUBLER, HANS
GULBRANSON, MERLIN
HAIGH, WHILLDYN & MARGARET
HAL-DOR LTD
HALL, LARRY
HANDLEY, DON R & MARY ANN
HANIFY, DBA - WHITE BEAR RANCH
HARALIK, BESS & ROBERT
HARDESTY, LESLIE E & BECKY J
HARESON, NICHOLAS & MARY
HARPER LAKE CO;UC OPERATING/HARPER DRY LAKE
HART, MERRILL W
HARTER FARMS
HARTER, JOE & SUE
HARTLEY, LONNIE
HARVEY, FRANK
HELENDALE SCHOOL DISTRICT
HENDLEY, RICK & BARBARA
HERT, SCOTT
HESPERIA GOLF AND COUNTRY CLUB
HESPERIA WATER DISTRICT
HI DESERT MUTUAL WATER CO
HI-GRADE MATERIALS
HI-GRADE MATERIALS CO.
HIETT, HARRY L & PATRICIA J

DESIGNEE

Therese Parker, Esq.
Robert Dougherty, Esq.
Same
Same
Susan Zutavern
Same
Therese Parker, Esq.
Robert Dougherty, Esq.
Same
Therese Parker, Esq.
Same
Russ Jones, Owner
Same
Same
Same
Same
Same
Same
David J. Cooper, Esq.
Same
Richard Slivikin, Esq.
Richard Slivikin, Esq.
Same
Same
Patricia Bristol
Same
Therese Parker, Esq.
Michael Davis, Esq.
James Markman, Esq.
Stanley Derryberry
Robert E. Hove
Robert E. Hove
Same

PRODUCER

DESIGNEE

HILARIDES, FRANK
HILEMAN, KATHERINE
HILL, MELVIN
HITCHIN LUCERNE, INC
HODGE, STANLEY W
HOLLISTER, ROBERT H & RUTH M
HOLWAY, ROBERT
HONG, PAUL B & MAY
HORTON'S CHILDREN'S TRUST
HORTON, JOHN MD
HOSKING, JOHN W & JEAN
HOY, MIKE
HRUBIK, THOMAS A
HUBBARD, ESTER & MIZUNO, ARLEAN
HUNT, RALPH M & LILLIAN F
HUTCHISON, WILLIAM O
HYATT, JAMES & BRENDA
INDUSTRIAL ASPHALT
IRVIN, BERTRAND W
JACKSON, RAY
JAMS RANCH
JESS RANCH WATER COMPANY
JOHNSON, JAMES R
JOHNSON, LARRY & CARLEAN
JOHNSON, RONALD
JOHNSTON, HARRIET AND LARRY W
JORDAN, RAYMOND
JUBILEE MUTUAL WATER COMPANY
JUNIPER RIVIERA COUNTY WATER DISTRICT
JUSTICE, CHRIS
JUSTICE, CHRIS
J V A AIR INC
KAPLAN, ABRAHAM M

Same
Same
Therese Parker, Esq.
Same
Same
Same
Same
Same
Same
John W. Horton, M.D.
Same
Same
Therese Parker, Esq.
Dan McKinney, Esq.
Same
Same
Same
Same
Same
Martha Guy, Esq.
Same
Same
Melvin Finklestein
Calvin House, Esq.
Same
Same
Same
Same
Same
Ray Clark
William Smillie
Same
Same
Jim Anders
Same

PRODUCER

DESIGNEE

KASNER, ROBERT	Same
KATCHER, AUGUST M & MARCELINE	Same
KEMP, ROBERT & ROSE	Same
KEMPER CAMPBELL RANCH	Steve Abbott
KIEL, MARY	Same
KIM, JOON HO	Same
KING, GENEVIEVE E	Same
KOSHAREK, JOHN & JOANN	Same
LAKE ARROWHEAD COMMUNITY SERVICES DISTRICT	Steve Abbott, Esq.
LAKE JODIE PROPERTY OWNERS ASSOCIATION	Same
LAKE WAIKIKI	Virginia Cahill, Esq.
LAKE WAINANI OWNERS ASSOCIATION	Same
LANGLEY, MICHAEL R & SHARON	Same
LAWRENCE, WILLIAM W	Same
LAWSON, ERNEST & BARBARA	Same
LEE, DOO HWAN	Same
LEE, MOON & OKBEA	Same
LEE, SEPOONG ETAL & WOO POONG	Same
LEE PHD, VIN JANG T C/O ARCHIBEK, ERIC&SANDI	Same
LENHERT, RONALD & TONI	Same
LESHIN, CONNIE & SOL	Same
LESHIN, SOL	Same
LEVINE, DR LESLIE	Therese Parker, Esq.
LEWIS HOMES OF CALIFORNIA	Kenneth P. Corhan, Esq.
LEYERLY, GENEVA	Robert Dougherty, Esq.
LEYERLY, RICHARD	Robert Dougherty, Esq.
LINT, GORDON	Same
LONG, BALLARD	Same
LONGMAN, JACK	Same
LOPEZ, BALTAZAR	Same
LOUNSBURY, J PETER & CAROLYN	Therese Parker, Esq.
LOW, ROBERT	Same
LUA, ANTONIO	Same

PRODUCER

MOST, MILTON W
MULLIGAN, ROBERT & INEZ
MURPHY, BERNARD H
MURPHY, BERNARD TRUST
MURPHY, KENNETH
MUTUAL FUNDING CORP
NAVAJO MUTUAL WATER CO
NELSON, MILDRED L
NEWBERRY COMMUNITY SERVICE DIST
NEWBERRY SPRINGS COMPANY
NUNN, DONALD & PEARL
NU VIEW DEVELOPMENT, INC
O'BRYANT, ROBERT C & BARBARA
O F D L INC
OHAI, REYNOLDS & DOROTHY
O'KEEFE, SARAH-LEE & JOKE E
ORMSBY, HARRY G
OROPEZA, JOSE M
OSTERKAMP, GEROLD
OWL ROCK PRODUCTS COMPANY
P & H ENGINEERING & DEV CORP
PALISADES RANCH
PARK, CHANHO
PARK, HEA JA & JEONG IL
PARKER, DAVID E
PARKER, GEORGE R
PATHFINDER INVESTORS
PAYAN, PAUL
PEARL, ALICE
BORUFF, PAUL & LINDA; PEARSON, DERYL B
PEREZ, EVA
PERKO, BERT K
PERRY, THOMAS A

DESIGNEE

Therese Parker, Esq.
Same
Same
Same
Same
Ron Yee-Dong, President
James Hanson
Same
Vicki Morris
Ed Dygert, Esq.
Paul Henderson, Esq.
Richard Slivkin, Esq.
Same
Virginia Cahill, Esq.
Same
Same
Same
Robert Dougherty, Esq.
Vince Dommarito, Area Manager
Same
Robert Dougherty, Esq.
Same
Same
Same
Therese Parker, Esq.
Same
Same
Same
Same
Therese Parker, Esq.
Same
Same

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
SCOGGINS, JERRY	Same
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.
SMITH, WILLIAM E	Same
SNYDER, KRYL K & ROUTH, RICHARD J	Terry Caldwell, Esq.
SON'S RANCH	Therese Parker, Esq.
SOPPELAND, WAYNE	Terry Caldwell, Esq.
SOUTHERN CALIFORNIA EDISON CO - AGRICULTURE	Douglas Ditonto, Esq.
SOUTHERN CALIFORNIA EDISON CO - INDUSTRIAL	Douglas Ditonto, Esq.
SOUTHERN CALIFORNIA GAS COMPANY	Jane Goichman, Esq.
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.
SPECIALTY MINERALS, INC	Michael Davis

PRODUCER

SPILLMAN, JAMES R & NANCY J
SPINK, WALTHALL
SPRING VALLEY LAKE ASSOCIATION
SPRING VALLEY LAKE COUNTRY CLUB
ST ANTHONY COPTIC ORTHODOX MONASTERY
DONALD B ST CHARLES, ATTY AT LAW
STEWART WATER COMPANY
STEWART, STANLEY & PATRICIA
STORM, RANDALL
STRINGER, W EDWARD
SUDMEIER, GLENN W
SUGA, TAKEAKI
SUMMIT VALLEY RANCH
SUNDOWN LAKES, INC
SUN & SKY COUNTRY CLUB
SWARTZ, ROBERT & IRENE
TALLAKSON, WILLIAM V & ELIZABETH A
TAPIE, RAYMOND & MURIEL
TATUM, JAMES B
TATRO, RICHARD K. & SANDRA A.
TAYLOR, ALLEN C / HAYMAKER RANCH
TAYLOR, TOM
THAYER, SHARON
THE 160 NEWBERRY RANCH CALIFORNIA, LTD
THE CUSHENBURY TRUST, C/O SPECIALTY MINERALS
THOMAS FARMS
THOMAS, WALTER
THOMPSON, JAMES A
THOMPSON, RODGER
THORESON, ROBERT F & A KATHLEEN
THRASHER, GARY
THUNDERBIRD COUNTY WATER DISTRICT
TILLEMA, HAROLD

DESIGNEE

Same
Same
Thomas Bunn, III, Esq.
Richard Opper, Esq.
Mike Stiller, Esq/Karas (Bishop)
Same
Isidro Baca
Therese Parker, Esq.
Same
Therese Parker, Esq.
Same
Same
Michael Davis, Esq.
Thomas Hargraves
Everett Hughes
Same
Same
Same
Same
Same
Same
Therese Parker, Esq.
Same
Therese Parker, Esq.
Michael Davis, Esq.
Therese Parker, Esq.
Same
Therese Parker, Esq.
Same
Same
Same
Same
Peter Taylor, General Manager
Same

PRODUCER

TRIPLE H PARTNERSHIP
TROEGER FAMILY TRUST, RICHARD H
TURNER, LOYD & CAROL
TURNER, ROBERT
UNION PACIFIC RAILROAD COMPANY
VAIL, JOSEPH B & PAULA E
VAN BASTELAAR, ALPHONSE
VAN DAM BROTHERS
VAN DAM, ELDERT & SUSAN
VAN DIEST, CORNELIUS
VAN LEEUWEN FAMILY TRUST
VAN LEEUWEN, JOHN
VAN VLIET, HENDRIKA
VANDER DUSSEN, ED
VANHOY, LUTHER C & ROBERTA L
VANNI, MIKE
VAN BURGER, CARL c/o CVB INVESTMENT
VAUGHT, ROBERT E. & KAREN M.
VERNOLA, PAT
VERNOLA, PAT
VICTOR VALLEY COMMUNITY COLLEGE DIST
VICTOR VALLEY WATER DISTRICT
VICTORVILLE, CITY OF
VISOSKY JR, JOSEPH F
VISSER, ANNIE
VOGLER, ALBERT H
WACKEEN, CAESAR
WAKULA, JOHN & HELEN
WARD, KEN & BARBARA
WARD, RONNY H
WEBER, DAVE
WEBER, F R & JUNELL
WEBSTER, THOMAS M & PATRICIA J

DESIGNEE

Ronald A. Van Blarcom, Esq.
Rollin N. Rauschl, Esq.
Same
Same
Jim Barclay
Same
Same
Same
Same
Therese Parker, Esq.
Therese Parker, Esq.
Robert Dougherty, Esq.
Robert Dougherty, Esq.
Steve Tyler, Esq.
Same
Tom O'Donnell
Same
Same
Robert Dougherty, Esq.
Robert Dougherty, Esq.
W. W. Miller, Esq.
Thomas McGuire, Esq.
Thomas McGuire, Esq.
Same
Same
Therese Parker, Esq.
Jack W. Evarone, Esq.
Same
Same
Same
Same
Same
Same

PRODUCER

WEIDKNECHT, ARTHUR J & PEGGY A
WEISER, SIDNEY & RAQUEL
WEST, CAROLYN & SMITH, RICHARD
WEST, HOWARD & SUZY
WESTERN HORIZON ASSOCIATES INC
WESTERN ROCK PRODUCTS
WET SET, INC
WHITTINGHAM, RICHARD V
WILLOW WELLS MUTUAL WATER COMPANY
WITTE, E DANIEL & MARCIA
WLSR INC
WOO, CHEN C/O ASTER DUCK CO
WORSEY, JOSEPH A & REVAE
YANG, YOUNG MO
YARD, WILLIAM & BETTY
YEAGER, E L - CONSTRUCTION COMPANY INC
YERMO WATER COMPANY
YKEMA HARMSSEN DAIRY
YKEMA TRUST
YOUNG, KEITH O - (DESERT TURF)

DESIGNEE

Same
Same
Same
Same
Ernest Leff, Esq.
Kathleen Daprato
Thomas Ferruzzo, Esq.
Same
Richard A. Joh
Same
Steve Winfield
Same
Same
Same
Same
Roger Luebs, Esq.
Donald Walker
Therese Parker, Esq.
Therese Parker, Esq.
Therese Parker, Esq.

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EXHIBIT F
TRANSFERS OF BASE ANNUAL PRODUCTION RIGHTS.

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EXHIBIT F
TRANSFERS OF
BASE ANNUAL PRODUCTION RIGHTS

1. Transferability. Any Base Annual Production Right, including any Carryover Right (Right) or any portion thereof may be sold, assigned, transferred, licensed or leased subject to the rules set forth in this Exhibit "F".

2. Consumptive Use Adjustments. A transferred Right shall be adjusted so as not to cause an increased Consumptive Use of water. For either inter Subarea or intra Subarea transfers, if the transferee's Consumptive Use of water Produced under the transferred Right would be at a higher rate than that of transferor, the transferred Right shall be reduced by Watermaster to a level that equalizes the Consumptive Use to that of transferor. Any such adjustments by Watermaster shall be made using the following Consumptive Use rates. If a transfer would cause the same or a decreased Consumptive Use, no adjustment shall be made.

Type of Water Use	Consumptive Use Rate
Municipal	50%
Irrigation	50%
Industrial	case by case
Lakes or Aquaculture	surface acres x 7 ft.

For mixed or sequential uses of water excluding direct reuse of municipal wastewater, the total acre-feet of Consumptive Use shall be the sum of Consumptive Uses for each use.

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

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

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

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

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

1 through other Country Club lakes, and finally is discharged to
2 Spring Valley Lake. The Association Produces Groundwater that is
3 discharged to Spring Valley Lake. Water overflowing from Spring
4 Valley Lake flows to lakes in the Park. The Park Produces
5 Groundwater that is discharged to the lakes in the Park. The Park
6 also Produces Groundwater that is used directly for irrigation of
7 the Park. The Park is also irrigated by pumping from the lakes in
8 the Park. Water overflowing from the lakes in the Park is
9 discharged to the Mojave River. Some water from the lakes in the
10 Park also flows to a lake on the Ranch. The Ranch also Produces
11 Groundwater. The Ranch is irrigated from the lake on the Ranch.
12 No water flows on the surface from the Ranch property to the Mojave
13 River.

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

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

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

28

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

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

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

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

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

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

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

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

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

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EXHIBIT G

SUBAREA OBLIGATIONS

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

8 i. If the accounting pursuant to Paragraph 5, below,
9 reflects a net cumulative credit at the beginning of the Year,
10 the combined minimum flow obligation shall be 18,400 acre-feet
11 minus any net cumulative credit, but shall be not less than
12 15,000 acre-feet.

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

19 2. Obligation for Transition Zone Replacement Water.

20 a. Until the Court approves Groundwater levels to be
21 established and maintained pursuant to Subparagraph 2b of this
22 Exhibit, Watermaster shall provide Replacement Water in the
23 Transition Zone equal to Production in the Transition Zone that is
24 in excess of the Transition Zone Producers' share of the Alto
25 Subarea Free Production Allowance for that Year. All such
26 Replacement Water shall be provided as soon as practicable during
27 the next ensuing Year.
28

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

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

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

26 4. Makeup Water. Assessments for Makeup Water shall be paid
27 in accordance with the time schedule set forth in Exhibit D.
28

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

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

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

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

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

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

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

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

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

25 h. Any Makeup Water Obligation;

26 i. The Minimum Subarea Obligation for the current Year.

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

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

19 7. Example Calculation. Table G-1 sets forth an example of
20 Subarea Obligation accounting procedures using hypothetical flows.
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TABLE G-1
 HYPOTHETICAL EXAMPLE
 ACCOUNTING FOR COMPLIANCE WITH SUBAREA OBLIGATIONS

OBLIGATION OF SUBAREA A TO SUBAREA B

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

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

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF
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	50,000	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	50,000	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 NOT 15,000	0	0	0	0	0	0	0	0	0	15,622
MINIMUM OBLIGATION										
	20,400	22,867	24,467	26,044	27,711	28,696	25,407	23,607	21,074	15,622

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EXHIBIT H

BIOLOGICAL RESOURCE MITIGATION

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

14 b. If, pursuant to Paragraph 27, Watermaster buys or
15 leases Free Production Allowance in the Baja Subarea below the
16 Calico-Newberry Fault to satisfy the need for Replacement Water,
17 priority shall be given to purchases or leases that will result in
18 reducing Production in or near the area described in Subparagraph
19 1(c) of this Exhibit.

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

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

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

1 establish and maintain the Trust Fund Watermaster shall levy
2 against each acre-foot of Production within the Basin Area, other
3 than Production by the California Department of Fish and Game
4 (DFG), a Biological Resource Assessment of fifty cents (\$0.50)
5 (1993 dollars) to be collected at the same time and in the same
6 manner as the Administrative Assessment, except that no Biological
7 Resources Assessment shall be levied whenever the Trust Fund
8 account balance exceeds \$1,000,000 (1993 dollars).

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

24 i. not to exceed \$100,000 for the preparation by DFG of
25 a DFG habitat water supply management plan, which plan shall
26 include the water needs of the species listed in Table H-1 and
27 the riparian habitat areas shown on Figure H-1.
28

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

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

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

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

TABLE H-1

LIST OF SPECIES
(CONT'D)

SPECIES	ALTO			CENTRO		BAJA		
	Forks Dam to Upper Narrows	Upper Narrows to Lower Narrows	Lower Narrows to Helendale	Helendale to Hodge	Hodge to Barstow	Barstow to Harvard Road	Harvard Road to Mannix Wash	Afton Canyon
Yellow Warbler	9							
Yellow-breasted Chat	8	8			8	8		
Summer Tanager	8	8						8
Pale Big Eared Bat	8							
Mohave Ground Squirrel	4, 6		4, 6	4, 6				
Mohave Vole			6	6				
Nelson's Bighorn Sheep					10	10		10
TOTAL NUMBER OF SPECIES = 30								
TOTAL NUMBER OF SPECIES IN EACH AREA:	25	11	7	8	7	8	3	5

- 1 = Federally Endangered
- 2 = Federally Threatened
- 3 = State Endangered
- 4 = State Threatened
- 5 = Federal Category: 1
- 6 = Federal Category: 2
- 7 = Federal Category: 3b
- 8 = State: Special Concern
- 9 = State: Sensitive
- 10 = State: Fully Protected

TABLE H-2

**RIPARIAN HABITAT MONITORING WELL
WATER LEVEL CRITERIA**

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

H-2



Riparian Forest Habitat Area

SCALE



FIGURE H-1: LOWER NARROWS TRANSITION RIPARIAN ZONE

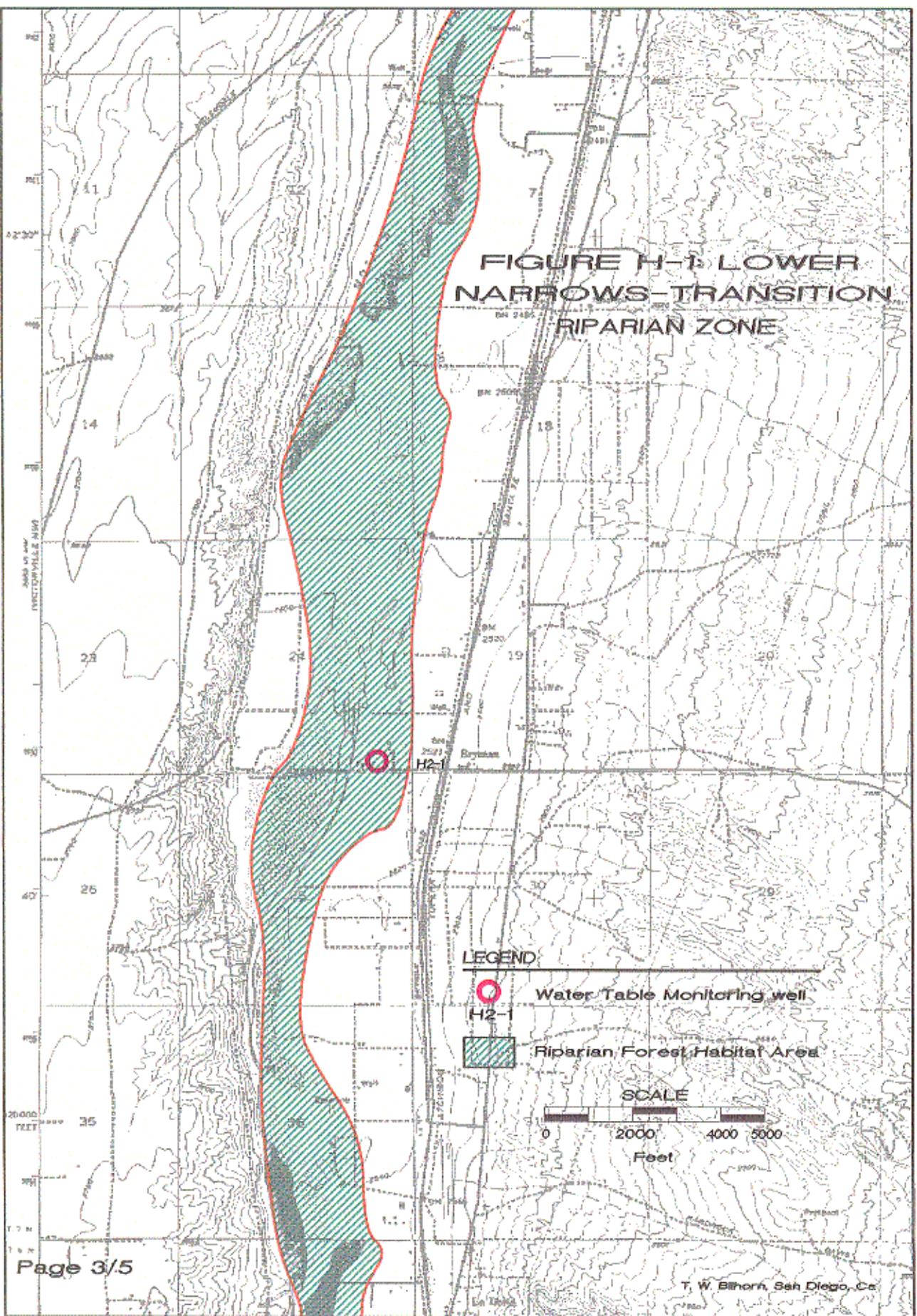
LEGEND

-  Water Table Monitoring well
H1-1
-  Riparian Forest Habitat Area

SCALE



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



LEGEND

-  Water Table Monitoring well
H2-1
-  Riparian Forest Habitat Area

SCALE



FIGURE HI TRANSITION RIPARIAN ZONE

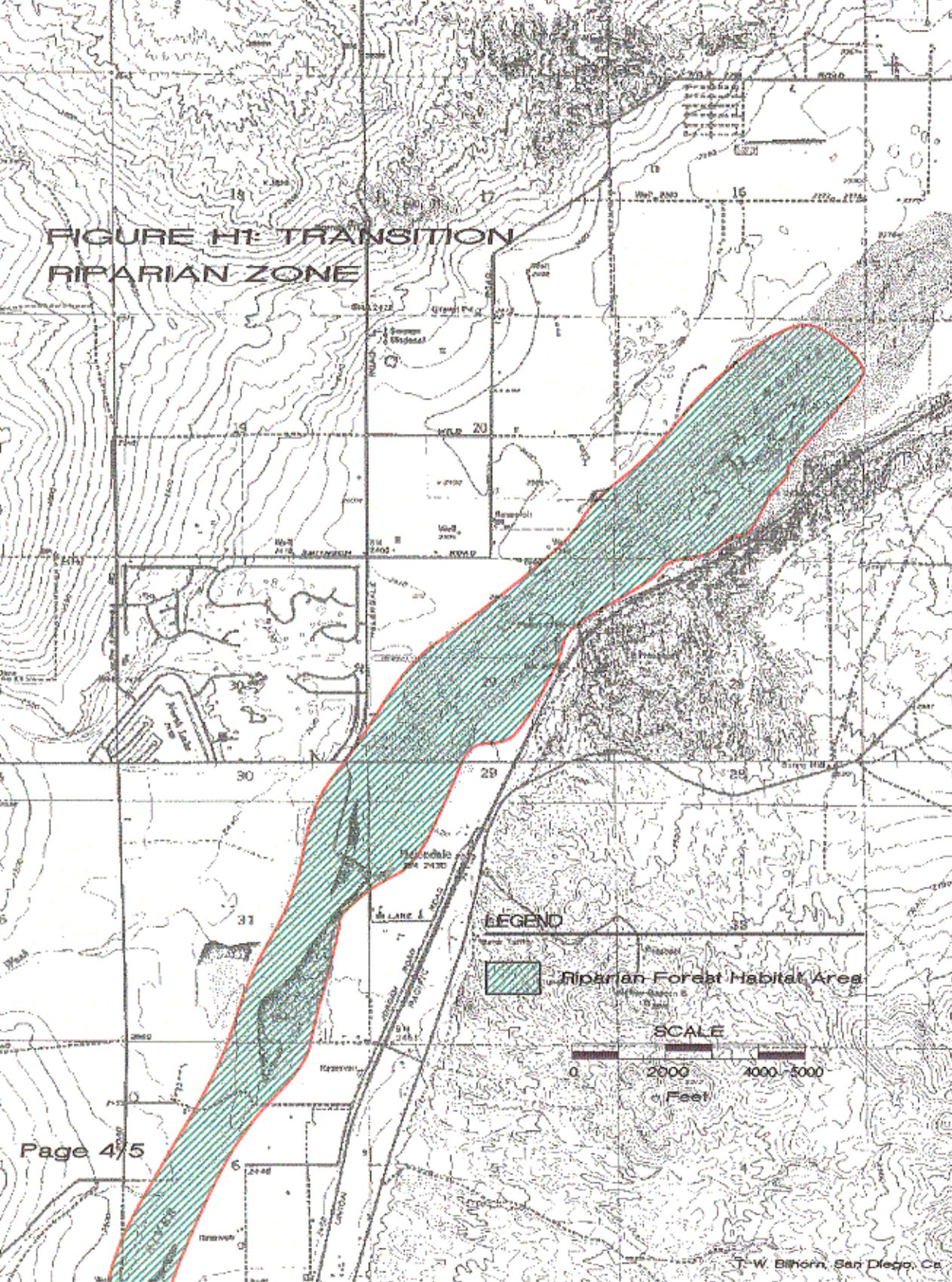
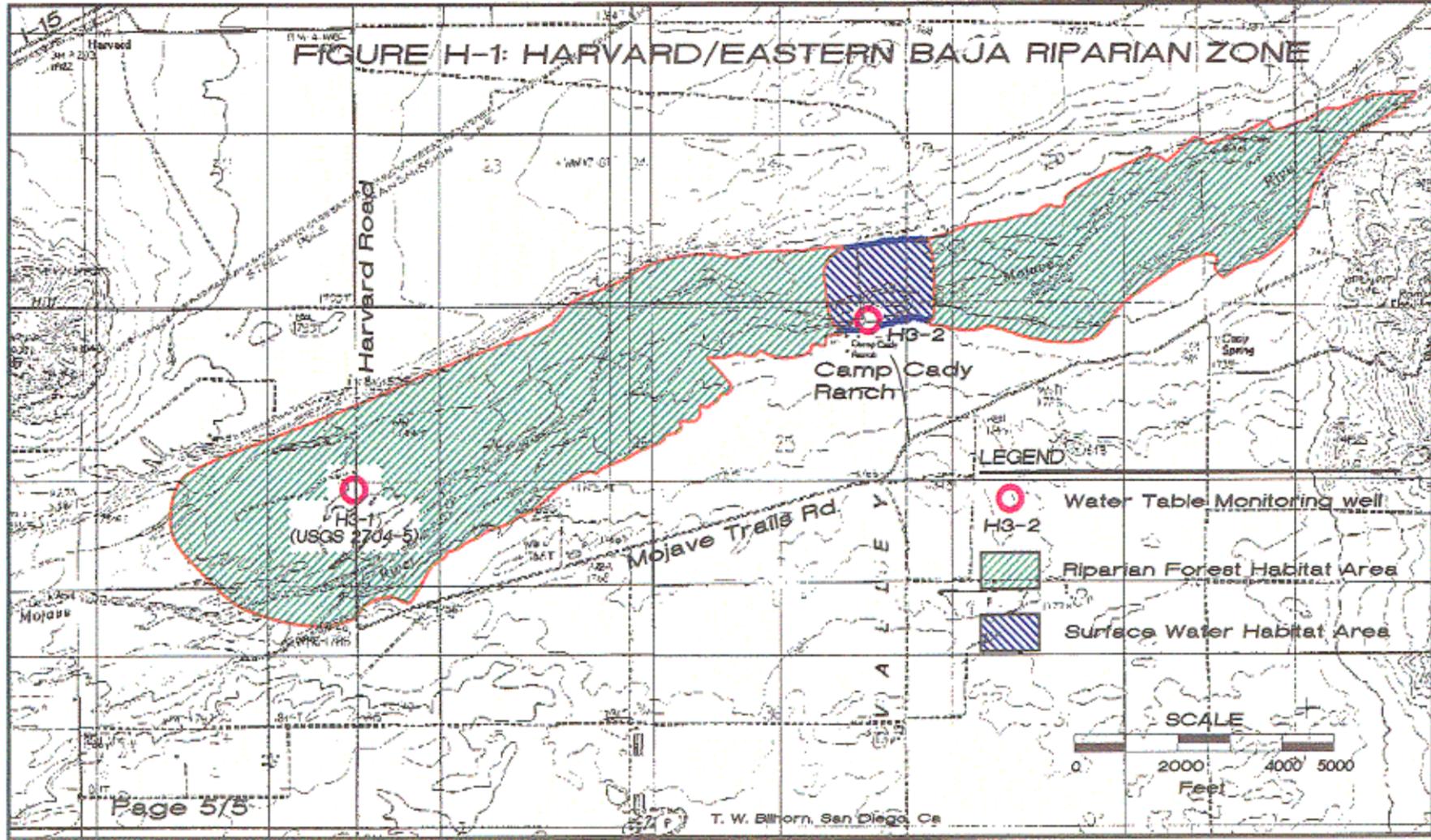


FIGURE H-1: HARVARD/EASTERN BAJA RIPARIAN ZONE



LEGEND

- STATE BOUNDARY
- COUNTY BOUNDARY
- DISTRICT BOUNDARY
- WATER RIGHT
- POTENTIAL RECHARGE AREA

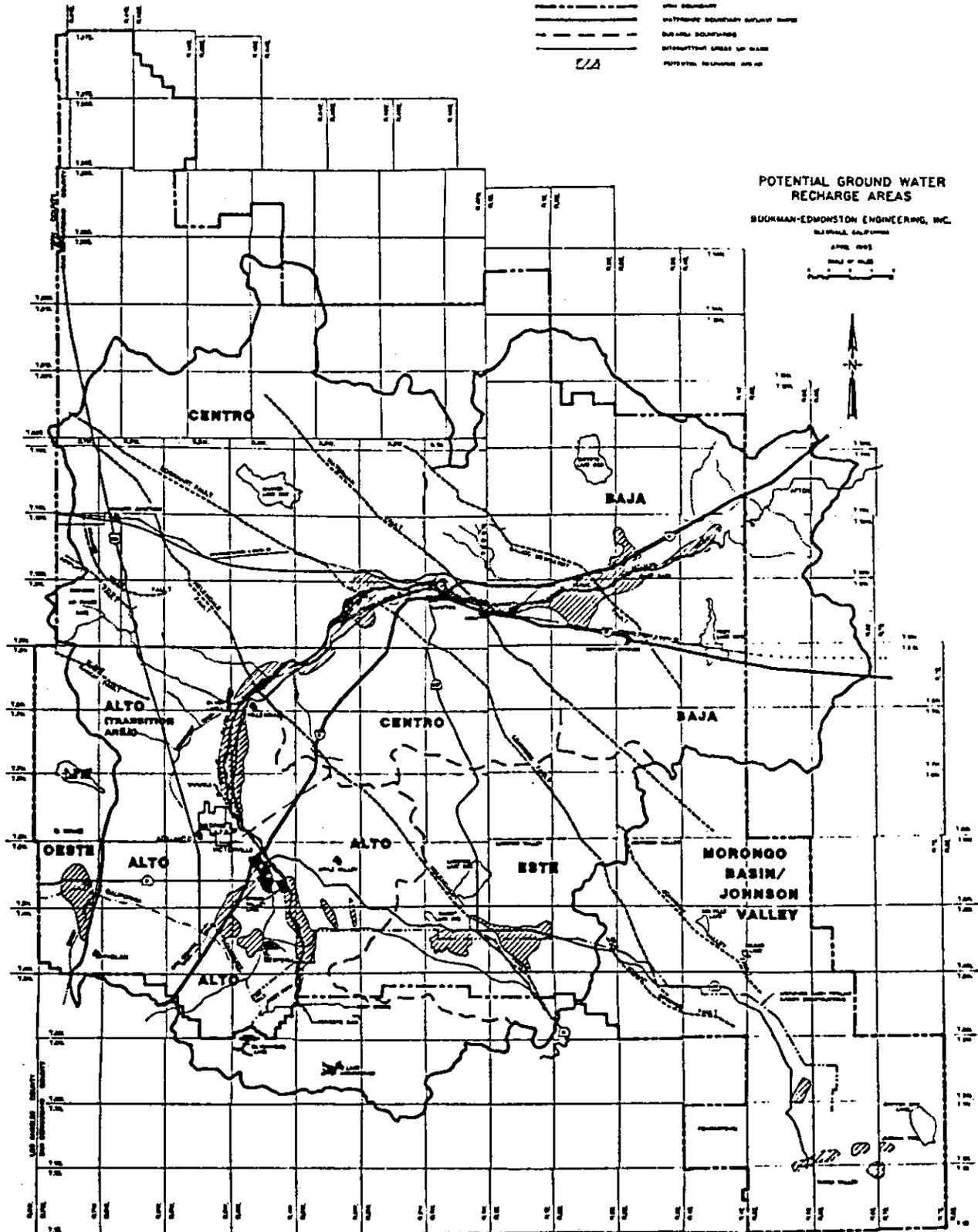
POTENTIAL GROUND WATER RECHARGE AREAS

BOOKMAN-EDMONSTON ENGINEERING, INC.

NATIONAL CAPITAL

APRIL 1995

SCALE OF 1:50,000



MOJAVE WATER AGENCY

REGIONAL WATER MANAGEMENT PLAN

Appendix E

Mojave Water Agency 2004 Regional Water Management Plan Update

[Provided in attached compact disc (CD)]

Report may be accessed using the following URL:

<http://www.mojavewater.org/home/projects/documents/2004RegionalWaterManagementPlanFinal.pdf>

Appendices may be accessed using the following URL:

<http://www.mojavewater.org/Reports/RegionalandLocalizedStudies/RegionalandLocalizedDocuments/RegionalWaterManagementPlan2004Volume2Appendices.pdf>

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Appendix F

**Technical Memorandum on SBX7-7 20x2020 Baseline Calculation
& Water Use Target Method Selection**

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TECHNICAL MEMORANDUM

To: Rick Gomez

From: Harvey Gobas, PE

Date: June 1, 2011

Subject: 20x2020 Baseline Calculation & Water Use Target Method Selection

According to the Department of Water Resources (DWR), a water supplier must define a continuous 10 or 15 year base period (baseline) for water use ending no earlier than December 31, 2004 and no later than December 31, 2010 that will be used to develop their per capita water use target for the year 2020 and an interim target for 2015. A water supplier who met at least 10 percent of its 2008 measured retail water demand through recycled water may use a 15-year baseline period; otherwise a supplier must use a 10-year baseline. The City of Adelanto did not use any recycled water to meet its 2008 water demand and, as a result, must use a 10-year baseline.

Table 1 shows the groundwater use within the City water service area. Since the City has no agricultural use, no recycled water use or any other source of water the groundwater use is the gross water use for purposes of determining the per capita consumption. The table also includes population of the water service area and per capita water use from fiscal year (FY) 1996 through FY 2010. Population data used herein is from the Department of Finance (DOF) and includes the entire water service area. Since water use has been trending downward recently even with increasing population, per capita use has been dropping. The most advantageous period for the City to use is the one generating the highest per capita use, making subsequent conservation easier to achieve. Therefore, the 10-year period from FY 1996 thru FY 2005 was determined to be the most advantageous and was used to calculate a baseline per capita water use average of 321.8 gallons per capita per day (GPCD) as shown in *Table 1*.

Table 1
City of Adelanto Base Daily Per Capita Use

Water Year	Ground-water^[1] (AFY)	Gross Water Use^[2] (AFY)	Gross Water Use (gal/day)	Water Service Area Population^[3]	Annual/ Capita Use (GPCD)
1996	4,475	4,475	3,994,750	7,123	560.8
1997	4,396	4,396	3,924,229	8,433	465.3
1998	4,015	4,015	3,584,117	10,676	335.7
1999	4,336	4,336	3,870,668	12,708	304.6
2000	4,871	4,871	4,348,252	18,130	239.8
2001	5,402	5,402	4,822,266	18,284	263.7
2002	5,710	5,710	5,097,212	18,777	271.5
2003	5,714	5,714	5,100,783	19,447	262.3
2004	6,062	6,062	5,411,436	21,313	253.9
2005	6,795	6,795	6,065,772	23,338	259.9
2006	6,538	6,538	5,836,353	24,796	235.4
2007	4,653	4,653	4,153,648	27,007	153.8
2008	5,326	5,326	4,754,422	28,000	169.8
2009	5,477	5,477	4,889,217	28,221	173.2
2010	4,866	4,866	4,343,789	31,765	136.7
Baseline (Average FY 1996-2005)					321.8
Minimum Baseline (Average FY 2004-2008)					214.6

[1] Pumped Water is groundwater pumped from the City's active wells.

[2] Gross Water Use = Pumped Water

[3] Population is obtained from Department of Finance's (DOF) Table E-4: Population Estimates for California State and Counties. Population for 2000 is as of Census date (April 1st), all other years are January 1st DOF estimates. Per DOF's Press Release on April 29, 2011 the 2010 populations were revised to incorporate 2010 Census counts as the benchmark.

A water supplier must set a 2020 water use target and a 2015 interim target using one of the following four methods as defined further in Section 10608.20 of Senate Bill No. 7 (SBX7-7):

- Method 1: Eighty percent of the water supplier's baseline per capita water use
- Method 2: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscape area water use; and commercial, industrial, and institutional uses
- Method 3: Ninety-five percent of the applicable state hydrologic region target as stated in the State's April 30, 2009, draft 20x2020 Water Conservation Plan
- Method 4: A BMP Option based on standards that are consistent with the California Urban Water Conservation Council's (CUWCC) best management practices (BMPs).

Calculation of Minimum Targets

If the average base daily per capita water use is greater than 100 GPCD for a defined 5-year baseline period, the legislation's minimum water use reduction requirement must also be met as set in Section 10608.22 of Senate Bill No. 7 SBX7-7.

Per SBX7-7, the minimum water use reduction baseline period must end no earlier than December 31, 2007 and no later than December 31, 2010 and the minimum reduction shall be no less than 5 percent of this 5-year base daily per capita water use. A minimum water use reduction baseline period between FY 2004 through 2008 was selected to calculate the most advantageous 5-year minimum water use reduction target. As shown in *Table 1*, the minimum baseline water use for that period averages 214.6 GPCD. The minimum per capita water use target for 2020 would therefore be 203.9 GPCD (95% of 214.6).

Calculation of Targets Using Methods 1 – 4

Method 1: Using a baseline per capita average of 321.8 GPCD (shown in Table 1) the City of Adelanto 2020 target would be 257.4 GPCD (80% of 321.8). Since the target water use for Method 1 is greater than the one found using the legislation's minimum requirement criteria (203.9), the water target level needs to be reduced to the minimum target of 203.9 GPCD for 2020, if this method is selected.

Method 2: The City of Adelanto does not currently maintain records of lot size, irrigated landscaped area for each parcel, reference evapotranspiration for each parcel, etc. to split its residential, commercial, industrial, or institutional uses into inside and outside (landscape irrigation) uses. The use of Method 2 to calculate conservation targets is therefore not feasible.

Method 3: The City of Adelanto falls within the South Lahontan Region (Hydrologic Region 9). According to the State's April 30, 2009 draft 20x2020 Water Conservation Plan, the 2020 Target for Hydrologic Region 9 is 170 GPCD. Using Method 3, the City of Adelanto's 2020 water use target would be 161.5 GPCD (95% of 170). Since the target water use generated by Method 3 is less than the one found using the minimum requirement criteria (203.9), no further adjustments to this water use target would be required, if this method is selected.

Method 4: DWR recently released this method and a calculator for agencies wishing to use this BMP-based method. A default indoor residential water savings of 15 GPCD was assumed and the City of Adelanto's Public Water System Statistics Report for calendar year 2000 submitted to the Department of Water Resources (DWR) was referenced to obtain the Commercial, Industrial and Institutional (CII) water use consumption (647 AF). Using the midpoint of the baseline period (year 2000) and DWR's "SBX7-7 Provisional Method 4 Target Calculator" resulted in a 2020 water use target of 203.9 GPCD. Since the target water use for Method 4 is equal to the one found using the legislation's minimum requirement criteria (203.9), no further adjustments to this water use target would be required, if this method is selected.

Conclusion

The discussion and calculations above are summarized in *Table 2*.

Table 2
City of Adelanto
Water Use Target Summary (GPCD)

Method	2020
1	203.9
2	Not Applicable
3	161.5
4	203.9

As shown in *Table 2*, Method 1 and 3 results are the most favorable water use target level for the City of Adelanto, with the minimum 5-year water use reduction governing in Method 1. The 2015 interim target would then be 262.9 GPCD (mid-point between baseline of 321.8 and 2020 target of 203.9). It should be noted that the City has met this 2020 target consecutively for the past four years and the 2015 target the last eight years.

Appendix G

Landscape Water Conservation Ordinance No. 441, Adelanto
Municipal Code, Section 17.60

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ORDINANCE NO. 441

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ADELANTO, SAN BERNARDINO COUNTY, STATE OF CALIFORNIA, FINDING THE APPROVAL OF CODE AMENDMENT 05-02 EXEMPT FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT PURSUANT TO SECTION 15308 OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT GUIDELINES (ACTIONS BY REGULATORY AGENCIES FOR PROTECTION OF THE ENVIRONMENT), ADOPTING CODE AMENDMENT 05-02 MODIFYING CHAPTER 17.10 OF THE ZONING CODE DELETING THE CURRENT LANDSCAPING SECTION 17.10.110 AND ADDING CHAPTER 17.60 TO INCLUDE THE OLD LANDSCAPE REQUIREMENTS AND ADDING NEW INFORMATION REGARDING WATER CONSERVATION, INCORPORATING MORE DETAILED REGULATIONS FOR NEW RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT, MODIFYING TABLE 25-1 OF SECTION 17.25.040 AND TABLE 30-1 OF SECTION 17.30.040(A) REDUCING THE MINIMUM AMOUNT OF LANDSCAPING FOR COMMERCIAL AND INDUSTRIAL DEVELOPMENT FROM 10 PERCENT TO 5 PERCENT IN THE ADELANTO MUNICIPAL CODE, AND MAKING FINDINGS IN SUPPORT THEREOF.

WHEREAS, the City of Adelanto has enacted landscaping regulations as part of the adopted Zoning Code; and

WHEREAS, the City of Adelanto acknowledges that there is a need to conserve water throughout the Victor Valley; and

WHEREAS, a Notice of public hearing was posted and published in the newspaper on January 26, 2006. In addition, a letter advising applicants of the proposed Code Amendment, and an invitation to a workshop on December 1, 2005 was mailed to all applicants with current development projects in process in the City, both residential and non-residential; and

WHEREAS, at the November 9, 2005 meeting, staff presented for discussion an ordinance amendment to reduce the percentage of landscaping area required for commercial and industrial development; and

WHEREAS, a workshop was conducted with the development community on December 1, 2005 to review the proposed water conservation policies; and

WHEREAS, a duly noticed public hearing was held before the City Council on February 8, 2006 to hear public testimony and consider the proposals; and

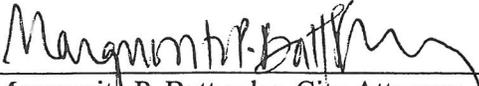
NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ADELANTO, CALIFORNIA HEREBY ORDAINS AS FOLLOWS:

Section 1. The above recitals are all true and correct.

Section 2. The City Council has reviewed and considered the information included in the General Plan, Zoning Code, staff reports for the public hearings, and public testimony prior to taking action on the proposed Code Amendment. This information is on file and available at the Community Development Department at the City Hall of the City of Adelanto.

Section 3. The City Council finds and determines that the adoption of Code Amendment 05-02 is exempt from the California Environmental Quality Act pursuant to Section 15308 of the California Environmental Quality Act Guidelines (Actions by Regulatory Agencies for Protection of

APPROVED AS TO FORM:



Marguerite P. Battersby, City Attorney

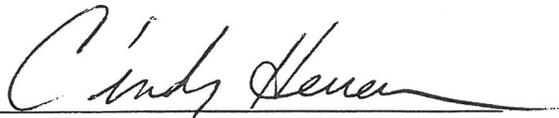
I, Cindy Herrera, City Clerk of the City of Adelanto, California, do hereby certify that the foregoing Ordinance No. 441 was duly introduced for first reading on the 8th day of February 2006 and regularly adopted at a regular meeting of the City Council of the City of Adelanto on this 22nd day of February 2006, by the following vote, to-wit:

AYES: Council Members Baisden, Glasper, McCauley, Mayor Pro Tem
Perez, and Mayor Nehmens

NOES: None

ABSENT: None

IN WITNESS WHEREOF, I hereunto set my hand and affix the official seal of the City of Adelanto on this 22nd day of February 2006.



Cindy Herrera
City Clerk

SEAL

the Environment) and the City Council determinations reflect the independent judgment of the City Council.

Section 4. The City Council hereby further finds and determines that the City has followed the procedures for Ordinance Amendments as set forth in Sections 65850 through 65863.13 of the California Government Code.

Section 5. The City Council of the City of Adelanto hereby adopts Ordinance No. 441, adopting Code Amendment 05-02, modifying Chapter 17.10 of the Zoning Code deleting the current landscaping Section 17.10.110 and adding Chapter 17.60 to include the old landscape requirements and adding new information regarding water conservation, incorporating more detailed regulations for new residential, commercial, and industrial development, modifying Table 25-1 of Section 17.25.040 and Table 30-1 of Section 17.30.040(a) reducing the minimum amount of landscaping for commercial and industrial development from 10 percent to 5 percent in the Adelanto municipal code, attached hereto as Exhibits A, B, and C, and incorporated herein.

Section 6. If any provision of this ordinance or the application thereof to any persons or circumstances is held invalid, the remainder of the ordinance and the application of such provision to other persons or circumstances shall not be affected thereby.

Section 7. The Mayor shall sign and the City Clerk shall certify passage and adoption of this Ordinance, and shall cause the same to be published and posted pursuant to the provisions of law in this regard, and this Ordinance shall take effect sixty (60) days after its final passage.

Attachments

Exhibit A: Chapter 17.60
Exhibit B: Table 25-1
Exhibit C: Table 30-1

PASSED, APPROVED AND ADOPTED this 22nd day of February 2006.



Jim Nehmens
Mayor of the City of Adelanto



Cindy Herrera
City Clerk

CHAPTER 17.60

LANDSCAPING/WATER CONSERVATION

17.60.10	General Provisions
17.60.20	Landscape Design Plan
17.60.30	Landscape Design Standards
17.60.40	Landscape Material and Area Requirements
17.60.50	Model Home Complexes
17.60.60	Landscape Maintenance
17.60.70	Water Conservation
17.60.80	Approved Plant List

17.60.10 General Provisions

Landscaping shall be provided, irrigated and maintained as required by the Planning Director, pursuant to this Code and the policies of the City General Plan, each of which may be amended from time to time.

- A. Purpose. The purpose of this Chapter is to provide minimum water conservation and landscape development standards which will promote the general welfare of Adelanto residents through the provision of an outdoor environment which will:
1. Create aesthetically pleasing views and vistas along public streets;
 2. Complement and enhance the functional and aesthetic design of new building and site development projects so as to protect and enhance property values;
 3. Provide visual screening of parking, service and storage areas;
 4. Mitigate the adverse impacts of higher intensity land uses upon lower intensity uses through the provision of needed landscape buffers;
 5. Promote water conservation by restricting the use of turf and ornamental water features and requiring the utilization of low water use plant materials;
 6. Promote climate modifications for enhancement of pedestrian environment at street frontages, parking lots and building facades.
 7. Provide maximum shade on ground surfaces to reduce the "urban heat island effect" produced by large expanses of unprotected paved areas.

B. Applicability.

All persons owning, developing or maintaining property subject to the provisions of this Chapter shall comply with all applicable provisions contained herein as identified below.

The landscape standards and requirements established by Sections 17.60.20 through 17.60.280 shall apply to all new developments whether residential, commercial or industrial. The landscape standards and requirements established by Sections 17.60.20 through 17.60.80 shall not apply to existing development, unless the development is being expanded by 25% or more of the existing floor area. The landscape maintenance provisions of Section 17.60.60 shall apply to all new and existing development.

This Chapter does not apply to registered historical sites or cemeteries. Registered historical sites and cemeteries shall provide scheduled irrigation based on CIMIS (California Irrigation Management Information System) or conduct water audits every three (3) years with strict adherence to the recommendations in the water audit. CIMIS and water audits shall be submitted to the water serving entity for compliance.

17.60.20 Landscape Design Plan

A. Prior to the issuance of a building permit, three (3) copies of a landscape design plan consisting of the landscape and irrigation plans shall be submitted to the Planning Division. Such plans shall be drawn at a minimum scale of one (1) inch equals thirty (30) feet (maximum sheet size 30" X 42") and contain the following information:

1. Building footprints and roof overhangs, walkways, parking surfaces and vehicular overhang lines, property lines, right-of-way lines, and easement lines;
2. Calculations of the square footage and percent of total of all site elements including building footprints, parking, and landscaped area. Landscaped area shall also be further subdivided into subcategories of turf, shrubs/groundcover, and inorganic materials;
3. The location of existing and proposed plant materials;
4. Plant graphic symbol legend and a plant schedule including botanical and common names, planting size, number of plants, and on-center spacing of massed shrubs and ground cover plants on each landscape plan sheet;
5. Planting details, specifications and required guarantee (see Section 17.60.60.B);

6. Inorganic materials schedule including type of materials (i.e. decomposed granite, river rock, screened rock, etc.) quantities and depth;
 7. Irrigation plan showing location of controller, existing or proposed meters, backflow preventer, water lines, heads, and materials schedule on each landscape plan sheet. Irrigation systems shall be designed to minimize maintenance and water consumption, and the irrigation system shall be properly designed and installed to ensure that overspray onto fences, walls and structures is eliminated to the maximum extent feasible;
 8. Irrigation details and pressure loss calculations.
 9. A diagrammatic plan showing the amount of shading that the landscaping is expected to provide at its maturity with the sun at its apex.
- B. The landscaping and irrigation plans shall be approved by the Director if found to be in compliance with the standards and requirements of this Chapter, which approval shall be obtained prior to the installation of the landscaping and irrigation materials. The installation of the landscaping and irrigation materials required by this Chapter shall be completed and shall be approved by the Director prior to the issuance of a Certificate of Occupancy for the structure, or prior to the use of the facility if no structure is involved.

17.60.30 Landscape Design Standards

- A. Landscaping shall be designed, installed and continuously maintained in accordance with the following standards:
1. Principles of Xeriscape Landscaping. Landscape developments shall be designed, installed and continuously maintained in accordance with the following seven basic principles of Xeriscape landscaping:
 - a. Planning and Design. Use a water conservation design. Implement a "mini-oasis" concept. Water using plants and turf should be concentrated in small areas near buildings where they may be enjoyed at the pedestrian level.
 - b. Limited Turf Areas. Limit the use of turf to small areas where it will be actively used and efficiently watered. See Section 17.60.70.E for further information.
 - c. Efficient Irrigation. Utilize the most efficient irrigation system for the area being served. Drip irrigate individual

plants rather than flooding larger areas. Group plantings with common water requirements together to be watered on the same irrigation control zone.

- d. Soil Improvements. Add soil amendments within planned areas to increase the water holding capacity of the soil and improve the health and vigor of plants.
- e. Mulching. Cover final soil surfaces with organic or inorganic mulches to insulate against soil temperature extremes and conserve moisture.
- f. Use Lower Water Demand Plants. Utilize only those plants listed in the officially approved low water use plant list (see Section 17.60.80) or alternative plants approved by the Director.
- g. Appropriate Maintenance. Maintain irrigation systems so they operate at peak efficiency. Lessen water demand by keeping weed growth down and by thinning unwanted wood from trees rather than cropping them.

2. Unity and Continuity¹.

Landscape unity and continuity may be significantly enhanced through the selection of a dominant tree and shrub species. Such dominance shall be established by making the selected species clearly in the majority (60% or more).

3. Tree and Shrub Placement in Proximity to Fire Hydrants.

Trees, as measured from trunk center, shall be placed a minimum of five (5) feet from fire hydrants. Shrubs, as measured from their mature perimeter, shall be located a minimum of five (5) feet from the rear of a fire hydrant. In no case shall any material other than groundcover be placed between the street or roadway and within fifteen (15) feet of either side or front of a fire hydrant.

(Figure 17.60.30A).

1 Plant palettes partially implemented through the construction of one or more phases of a previously approved master planned project, except for turf areas in excess of the limitations established by these landscape standards, shall be continued throughout the development of that project.

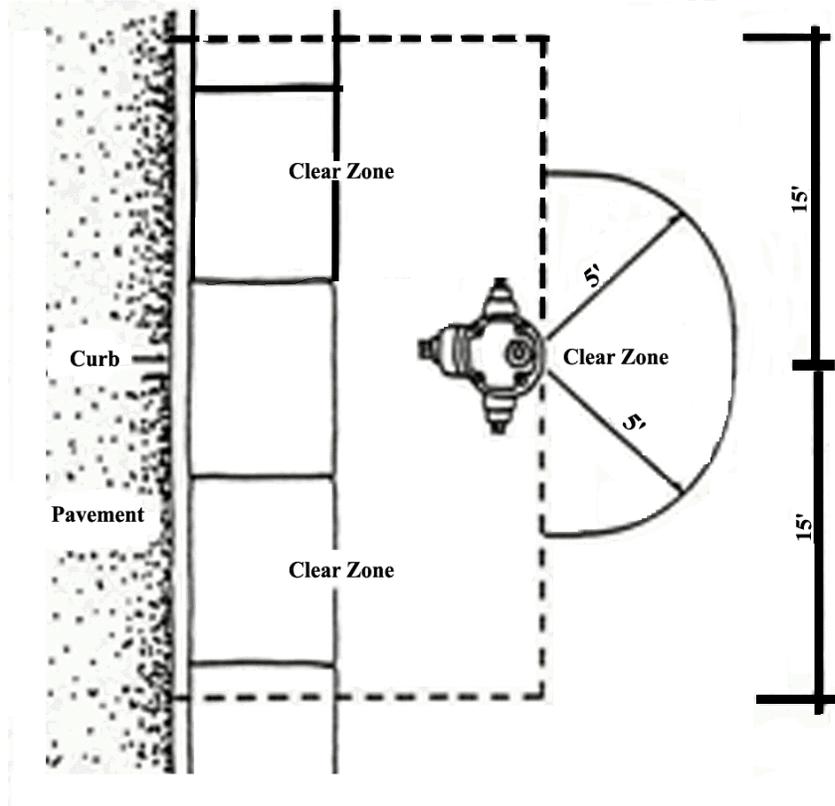


Figure 17.60.30-A - Fire Hydrant Clear Zone

4. Ground Surface Treatment
 - a. Pre-Treatment of Ground Surfaces Required. A pre-emergent herbicide shall be applied to the ground prior to and after the placement of natural surface materials (decomposed granite, gravel, crushed rock, river run rock, etc.) in any landscaped area to prevent weed growth.
 - b. Inorganic Ground Cover. Inorganic ground covers (decomposed granite, crushed stone, etc.) shall be of a natural color harmonious with other site and architectural materials and shall be installed to a minimum depth of two (2) inches.
 - c. Plant Cover/Dust Control. All portions of a development site (including future building pads) not occupied by buildings, structures, paved improvements, and required landscape areas shall be temporarily landscaped with plant materials in accordance with this Chapter or treated

with an appropriate inorganic ground cover and maintained in a weed and dust free condition.

5. Plant Massing.

The massing of trees and shrubs into groups containing three (3) or more plants is required unless standards elsewhere within this Chapter require only a single element, e.g., single trees within parking lot planter islands. Planting of single shrub specimens, unless used to repeat an element already established within a massed planting within the same visual area, is prohibited.

6. Plant Groupings.

The grouping of plant species commonly found together in natural associations or of common environmental requirements (soil type, water, sun exposure, temperature limitations, etc.) is required.

7. Plant Spacing.

In order to foster a more natural look, an uneven spacing of plants is required unless such plants are being used to create a massed shrub or groundcover bed. The spacing of shrubs shall be sufficient to allow plants to reach their natural mature size and form.

8. Consistency with Existing Streetscape Standards.

Street frontage landscaping shall be consistent with any previously adopted specific streetscape standards.

17.60.40 Landscape Material and Area Requirements

A. New developments shall be landscaped in accordance with the following minimum standards:

1. Plant Material

a. Landscaping shall consist of native or drought-tolerant plants capable of surviving the desert environment and climate with a minimum of maintenance and supplemental watering. A list of plants determined capable of meeting this criterion is contained in Section 17.60.80. Other plants may be considered on their merits in meeting this criterion. Determinations of plant species suitability will be made by the Director upon submission of project plans.

- b. Landscaping materials may also consist of wood timbers, decorative rocks, boulders, sand, bark, gravel, or a combination thereof; provided, however, that the majority of landscape materials and area shall consist of plants, as set forth above.

2. Irrigation

Utilize the most efficient irrigation system for the area being served. Irrigation of required landscaped areas should be by drip irrigation and matched precipitation rate, low-gallonage sprinkler heads, bubblers, and timing devices. Timing devices shall include soil moisture sensors and rain sensing override devices.

Irrigation systems shall be designed to minimize maintenance and water consumption, and the irrigation system shall be properly designed and installed to ensure that overspray onto fences, walls and structures is eliminated to the maximum extent feasible.

3. Landscape Area Requirements.

All portions of a development site not utilized for building development, service areas, paved or improved storage areas, parking, driveways, etc., shall be landscaped. Developers are required to install front and street side yard landscaping for all new development. Minimum areas of landscaping are as follows:

- a. Front Building Setback/Street Right-of-Way Areas. All front building setback and street right-of-way areas located between on-site improvements and the back of existing or future public sidewalks or street curbs, except needed access driveways, shall be fully landscaped, unless otherwise provided for in this Development Code.
- b. Parking Lot Area. The following landscaping standards apply to parking lots (Figure 17.60.40-B, C, and D).
 - 1) In order to reduce the "heat island effect" of large expanses of unprotected paved areas, a minimum of thirty (30) percent of the interior parking surface of all parking lots shall be shaded at the maturity of the landscaping.
 - 2) Provide a minimum of one (1) tree (minimum fifteen (15) gallon size when planted) for each seven (7) parking spaces located so as to visually disrupt long rows of parking spaces, trees may be clustered where appropriate.

- 3) A thirty-six to forty-two (36-42) inch high decorative masonry wall, hedge or landscaped berm, as measured from the finished grade of the parking area, shall also be used adjacent to public rights-of-way to screen the parking area. The height of the screening wall or berm may be reduced when the parking lot is below grade. Horizontal and vertical variations in the design of screening walls are required where the length of such walls exceeds forty (40) feet. Said variations are subject to Planning Staff approval.

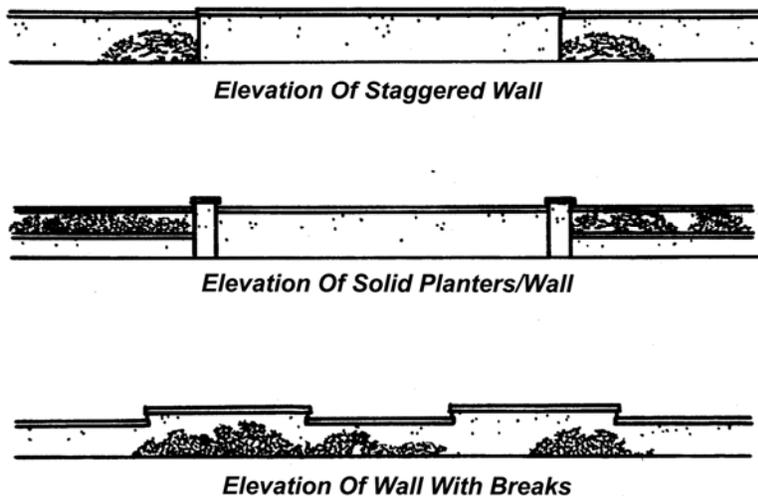
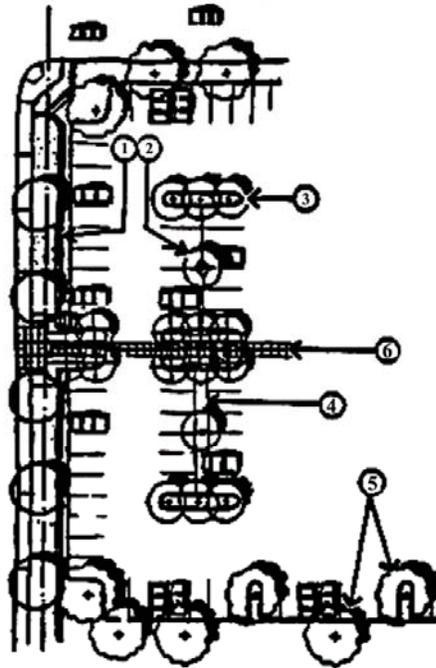


Figure 17.60.40-B - Recommended Design Features and Materials

- 4) A minimum of five (5) percent of the interior parking surface area of all parking lots shall be landscaped. Such percentage may be achieved by combining paragraph (1) below with paragraph (2) and/or (3).
- a) Planter islands a minimum of five (5) feet in width shall be located at the ends of all rows of parking stalls between the last stall and any drive aisle. Where drive aisles are curved, alternative dimensions with similar area may be approved (Figure 17.60.40-C); and

- b) Planter islands, shall be uniformly distributed throughout the interior parking area, and protected by raised curbs (Figure 17.60.40-C); or
 - c) Planter strips, located between double rows of parking stalls, shall be a minimum of four (4) feet in width. Each parking stall may overhang two (2) feet into this area (Figure 17.60.40-C).
- 5) Trees within parking lots shall be kept trimmed to a minimum clear canopy height of six (6) feet for visual safety.



- LEGEND**
- 1 30" - 42" Block wall and/or berm.
 - 2 Minimum 6' square tree well.
 - 3 Minimum 6'x18' end of row planter island.
 - 4 Planter strips a minimum of 4' in width between double rows.
 - 5 Minimum one tree per each 7 uninterrupted parking stalls.
 - 6 Special paving at pedestrian circulation areas.

Figure 17.60.40-C - Planter Islands/Strips

- 6) A landscaped strip with a minimum width of ten (10) feet shall be provided where parking lots are adjacent to a public right-of-way or residential uses or districts, unless otherwise provided for in this Code.

4. Landscape Buffers/Perimeter Landscape Strips
 - a. Landscape Buffers. When providing a buffer between commercial/industrial and residential uses or districts the following features are required:

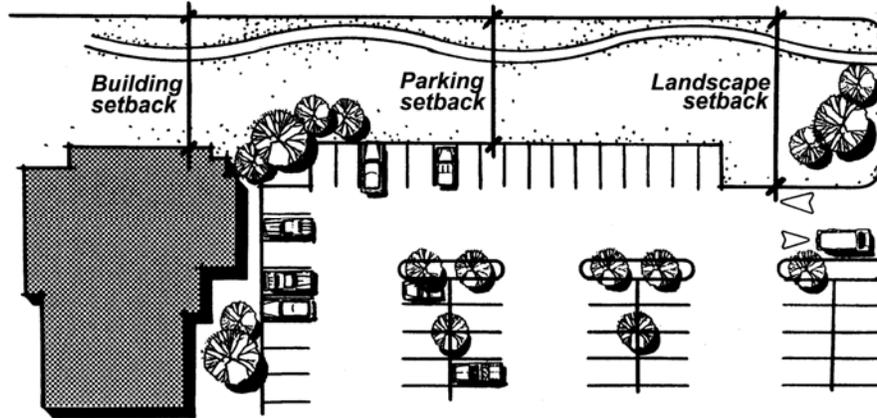


Figure 17.60.40-D - Landscape Areas

- 1) Landscaping shall include one (1) tree for each 200 square feet of required landscape area. Said tree shall be a minimum fifteen (15) gallon size when planted, twenty (20) percent of such required trees shall be twenty-four (24) inch box size; and
 - 2) A six (6) foot decorative masonry wall to City standards; and
 - 3) Evergreen trees a minimum of six (6) feet in height, and 2 inches in diameter, planted at a maximum spacing of twenty (20) feet on center and shrubs planted at a rate of five (5) per one hundred linear feet.
- b. Front Building Setback Area. Landscaping in the front building setback area shall be provided at a minimum rate of one (1) tree and six (6) shrubs per thirty (30) linear feet of frontage plus sufficient groundcover plantings to provide combined shrub and ground coverage of fifty (50) percent of the total landscaped area. Trees and shrubs may be grouped, but gaps between groupings of plants shall not exceed forty (40) feet.

c. Other Perimeter Areas. Landscaping in other perimeter areas shall be provided at a minimum rate of one (1) tree and six (6) shrubs per forty (40) linear feet plus sufficient groundcover plantings to provide combined shrub and ground coverage of forty (40) percent of the total landscaped area, except where screening is required. Trees shall be a minimum fifteen (15) gallon size when planted, twenty (20) percent of which shall be twenty-four (24) inch box size. Trees and shrubs may be grouped, but gaps between groupings of plants shall not exceed fifty (50) feet.

5. Landscape Improvement Requirements. The following minimum landscape improvements are required within the following landscape areas:

a. Single and Multi-Family Residential Developments

1) Common open space/retention areas. A minimum of one (1) tree and six (6) shrubs per 500 square feet of open space plus such additional vegetative ground cover as is necessary to cover a minimum of fifty (50) percent of the total landscaped area with shrubs and ground cover. The inclusion of turf is subject to the limitations established in Section 17.60.70.E and in Table 17.60.40-A.

2) Arterial and collector street rights-of-way. Arterial and collector street rights-of-way adjacent to and within single and multi-family residential developments shall be landscaped at a rate of one (1) tree and three (3) shrubs per 30 linear feet plus such vegetative ground cover necessary to cover a minimum of forty (40) percent of the total landscaped area with shrubs and ground cover. Turf is prohibited within public rights-of-way.

3) Front and Street Side Yards. The use of turf in these areas is discouraged. See Section 17.60.70.E for specific restrictions.

b. Commercial/Office/Institutional Developments. One (1) tree and six (6) shrubs per 500 square feet of interior open space plus such additional ground cover which, upon maturity, will cover a minimum of fifty (50) percent of all interior open space surfaces. The inclusion of turf is subject to the limitations established in Section 17.60.70.D and in Table 17.60.40-A.

- c. Industrial Developments. One (1) tree and six (6) shrubs per 750 square feet of interior open space plus such additional vegetative ground cover which, upon maturity, will cover a minimum of forty (40) percent of all interior open space surfaces. The inclusion of turf is subject to the limitations established in Section 17.60.70.D and in Table 17.60.40-A.
- d. Grading in the Front Building Setback. Front setback areas shall be graded in a manner which creates natural and pleasing ground forms in accordance with the following guidelines:
 - 1) A maximum of fifty (50) percent of the front building setback area may be used for storm water retention;
 - 2) Soil excavated to create needed retention basins shall, within the slope limitations established below, be used to create complementary earth mounds elsewhere within the same front building setback area;
 - 3) Earth mounds with a maximum slope ratio of four to one (4:1), horizontal to vertical, shall be located and designed to minimize street views into retention basins;
 - 4) Grading and other site preparation shall preclude the run-off of rain and/or irrigation water from landscaped surfaces onto paved surfaces.
- e. Finished Grade Surfaces. All landscaped areas shall be graded so that finish grade surfaces of all nonliving materials (i.e., decomposed granite, crushed rock, mulch, and the like) are at least one and one-half (1 1/2) inches below concrete or other paved surfaces.
- f. Protection of Landscaped Areas. Landscaped areas adjacent to vehicular drives or parking areas shall be protected by a six (6) inch vertical curb. Areas surfaced with different materials (i.e. lawn and decomposed granite) shall be separated by masonry, wood, or mowing strips.
- g. Irrigation Systems. The use of drip irrigation systems or systems of equivalent efficiency for all landscaping at commercial and industrial facilities and all common areas of residential developments is required. The use of

similar systems on individual residential lots is encouraged.

Irrigation systems shall be designed to minimize maintenance and water consumption, and the irrigation system shall be properly designed and installed to ensure that overspray onto fences, walls and structures is eliminated to the maximum extent feasible.

h. Limitations on the Use of Turf

Unless watered with "reclaimed" water, the use of turf in specific land uses shall be limited to the percentages listed in Table 17.60.40-A below.

Land Use	Turf permitted as a percent of Total Landscaped Area
Single family residential	20%
Multi-family residential	20%
Common open space/retention basins	20%
Parks, schools, golf course and cemeteries	No limitations
Commercial/office/institutional	20%
Industrial	10%

7. Decorative Water Features.

Within commercial, industrial and multi-family developments the use of decorative water features including, but not limited to, pools, ponds, fountains, streams, and waterfalls, unless serviced with "reclaimed water", shall be limited to small scale pedestrian oriented locations and features. Water feature designs that reduce evaporation, e.g. cascading water rather than vertical sprays, are required.

17.60.50 Model Home Complexes

- A. Model home complexes, unless they are utilizing "reclaimed water", shall be landscaped in accordance with the xeriscape landscape principles listed in Section 17.60.30.A and the following minimum requirements:

1. Plant Materials.

Landscaping shall consist of native or drought-tolerant plants capable of surviving the desert environment and climate with a minimum of maintenance and supplemental watering. A list of plants determined capable of meeting this criterion is contained in Section 17.60.80. Other plants may be considered on their merits in meeting this criterion. Determinations of plant species suitability will be made by the Director upon submission of project plans.

2. Turf and Water Surfaces/Features.

Combined turf and water surfaces of all water features shall not occupy more than fifty (50) percent of the landscapable area within each lot in the model home complex. Swimming pools, hot tubs and spas are exempt from this limitation.

3. Literature Package.

A literature package describing water conserving landscaping designs shall be on display within all model sales offices. If copies of the literature package are not made available by the homebuilder, such display shall include information regarding where the literature is available. The following are recommended to be included in the literature package:

- a. A Guide to High Desert Landscaping. Available at your local water district offices and the Planning Division offices.
- b. The Unthirsty One Hundred
Reprint from Sunset Magazine - October 1988
Lane Publishing Company
Menlo Park, California 94025

17.60.60 Landscape Maintenance

A. Landscape Maintenance. Landscaping shall be continuously maintained (watering, fertilizing, weeding, mowing, trash pick-up, and pruning) by the landowner or the lessor of new and existing development in accordance with the following:

- 1. Sites shall be kept clean and attractive at all times. Weeds and trash (windblown or otherwise) shall not be allowed to accumulate on the site.
- 2. Living plant material shall receive sufficient water and fertilization to maintain health and vigor and shall, to the maximum extent possible, be allowed to attain its natural mature

size and shape.

3. Pruning and mowing shall be used to maintain plant health and vigor while enhancing its form and structure. Cropping trees, unless necessary to protect traffic safety or overhead power lines, is prohibited.

Pruning and mowing will conform to the commonly used standards for each species; however, in no case will the landscape areas be allowed to become overgrown. Examples of overgrown landscape material include:

- a. Lawn grass species: Plants which have established seed heads, lawns that have become thatched and matted, have become infested with herbaceous weeds, or exceed eight (8) inches in height.
 - b. Shrubs and decorative grasses: Plants that have grown so large as to block natural light from entering windows, extend over property lines, extend over roof peaks or eaves, or are causing the strangulation of other plants.
 - c. Trees: Plants which display sucker growth, have grown to a height or canopy width which impairs the normal illumination of street lights, extend over property lines, interfere with overhead lines or impact public property.
4. All dead or obviously unhealthy plant material shall be replaced in an expeditious manner with material equal to that which was originally specified on the approved landscape plan.
 5. Bare spots in lawns or planters shall be promptly revegetated.
 6. Customary maintenance shall include provision of adequate irrigation, based on the micro-climate, and regular application of fertilizer, based on the needs of the plant.
 7. All property owners shall be responsible for maintenance of parkway areas within the public right-of-way adjacent to their properties, except those areas outside of a six-foot high block wall or solid fence.

B. Landscape Guarantee

1. The owner or developer shall, prior to the issuance of a certificate of occupancy, evidence that all plant materials are guaranteed for a minimum period of sixty (60) days from the date of final approval of the installation of the landscaping. Terms of the guarantee shall also specify that any plant materials which are not approved prior to October 1st of the calendar year

in which they are installed shall be further guaranteed until May 20th of the following calendar year.

2. Trees, shrubs, vines, ground cover, and turf which have to be replaced under terms of the guarantee shall be guaranteed for an additional sixty (60) days from the date of replacement.
3. All plant materials requiring replacement under the conditions of the contractors guarantee shall be replaced within ten (10) working days from the date of written notification.

C. Existing Landscaping

1. Maintenance. Required landscape areas, existing at the time of adoption of this Ordinance, shall be maintained in accordance with the provisions of Section 17.60.60.A above.
2. Prevention of Wasted Water. Existing developments shall, through improvements to its irrigation system and landscaped areas, prevent water waste resulting from inefficient landscape irrigation, run-off, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, nonirrigated areas, walks, roadways, or structures.

17.60.70 Water Conservation

A. Definitions

1. **Acre-foot of water** – that quantity of water required to cover (1) acre of land one (1) foot deep, or three hundred twenty-five thousand, eight hundred fifty-one (325,851) gallons.
2. **Active recreational area** – an area designated and primarily used for organized sports, including, without limitation, softball, baseball, football, soccer or a similar related sport, including all amenities related to the activity.
3. **Body of water** – any artificially constructed lake, pond, or lagoon, regardless of size.
4. **City** – the City of Adelanto
5. **Controller** – a mechanical timer capable of operating valve stations to set days, length of time, and frequency of water application.
6. **Escaped water** – the pumping, flow release, escape, or leakage of any water from any pipe, valve, faucet, connection, diversion berm, well, or any facility for the purposes of water supply, transport, storage, disposal, or delivery onto adjacent property or

public right-of-way.

7. **Excess runoff** – water accumulation on streets, gutters, neighboring properties, or other areas in an amount sufficient to cause flow.
8. **Manager** – the City Manager or the City Manager’s designee.
9. **Lot** – a legally created parcel of land occupied or intended for occupancy by one (1) main building together with its accessory buildings, and uses customarily incidental to it, including the open space required by the City’s zoning ordinance, and having it’s principal frontage upon a street as defined in the City’s zoning ordinance.
10. **Model home** – a facility used exclusively for the promotion and sale of homes similar to the model.
11. **Person** – an individual, corporation, partnership, incorporated association, or any other similar entity.
12. **Public water system** – any publicly or privately owned network of pipes, conduits, wells, reservoirs, holding tanks, and other components, including any combination thereof, which supplies water to water users, who are charged a fee of any kind or nature for such purpose, or which is designed to supply water or is capable of supplying water to water users for a fee, and includes any such system whether it is operated under the regulatory authority of the City of Adelanto, but does not include any irrigation company or district whose primary purpose is to supply water for farming.
13. **Residential development** – the development of any type of dwelling unit or units suitable or designed for human habitation, including, but not limited to, single family homes, condominiums, or manufactured homes, but not including hotels, motels, licensed convalescent homes, commercially operated retirement homes, time share units, or the like. “Residential development” shall not include remodeling or reconstruction where no new dwelling unit is created.
14. **Right of way** – land which by deed, conveyance, agreement, easement, dedication, usage, or process of law is reserved for or dedicated to the general public for street, highway, alley, public utility, or pedestrian walkway purposes.
15. **Turf** – a surface layer of earth containing grass with its roots.
16. **Turf-related facility** – a school, public recreational facility, cemetery, golf course, industrial park, or common area of a

housing development that applies water from any source, including effluent.

17. **Water-intensive landscape** – an area of land that is watered with a permanent water application system and planted primarily with plants not listed in Section H “Approved Plant List”. Included is the total surface area of all water features (i.e. swimming pools of any size, fountains, ponds, water courses, waterfalls, and other artificial water structures) filled or refilled with water from any source.
18. **Water purveyor** – the owner or operator of a public water system.
19. **Water user** – those persons, customers, and properties served by a water purveyor within the incorporated boundaries of the City.
20. **Water waste** – the indiscriminate use or excessive dissipation of water, which is unproductive or does not reasonably sustain life or economic benefits.

B. Application of Section

The provisions of this chapter shall apply to all water users. Any new single family residential development that is in Final Map check or has submitted Street Improvement Plans at the time this Ordinance is adopted is exempt from these regulations.

1. resulting from fire fighting, hydrant flushing, or fire training activities; or
2. necessary to prevent or abate threats to the public health or safety; or
3. from routine maintenance of any public water system or from temporary water system failures or malfunctions; or
4. from water users engaged in landscape irrigation with treated wastewater, effluent, grey water, or other nonpotable water.
5. drought tolerant plants as outlined in Section 17.60.80.

C. Prohibited Water Uses and Water Waste

The restrictions or prohibitions in this chapter shall not apply to water use, runoff, or flow.

1. It shall be unlawful for any water user of a public water system to knowingly allow water waste at any location or premises within the City limits after having been served with a notice of

violation, pursuant to Section 17.60.70.C for wasting water from the same location or premises.

2. It shall be unlawful for any owner, occupier, or manager of real property within the City to knowingly allow water waste at any such real property after having been served with a notice of violation, pursuant to Section 17.60.70.C for wasting water from the same location or premises.
3. It shall be unlawful for any water user within the City to knowingly make, cause, use, or permit the use of water for residential, commercial, industrial, agricultural, or any other purpose in a manner contrary to any provision of this chapter.
4. It shall be unlawful for any water user to cause or permit any water furnished to any property within the City to run or to escape from any hose, pipe, valve, faucet, sprinkler, or irrigation device onto any sidewalk, street, or gutter or to otherwise escape from the property, if such running or escaping can reasonably be prevented.
5. It shall be unlawful for any water user to wash any vehicle, equipment, or other object, or any driveway, parking lot, sidewalk, street, or other paved surface, in any manner permitting the continuous flow of water for more than five minutes.
6. Commercial and noncommercial watering of turf, ground cover, open ground, shrubbery, crops, gardens, and trees, including agricultural irrigation, in a manner or to an extent which allows substantial amounts or excess runoff shall not be permitted. A minimum amount of runoff, which is a natural consequence of conservative watering, either by hand or by mechanical or automated sprinkling facilities, is permitted, so long as such runoff does not amount to excess runoff as defined in this Chapter.
7. It shall be unlawful for any water user to permit the excess use, loss, or escape or water through breaks, leaks, or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected.
8. It shall be unlawful for any water user to willfully or negligently permit or cause the escape or flow of irrigation water in such quantity as to cause flooding, impede vehicular or pedestrian traffic, create a hazardous condition to such traffic, or cause damage to public or private rights of way through failure or neglect to properly operate or maintain any irrigation structure, delivery ditch, or waste ditch.

9. It shall be unlawful for any water user to water or permit the watering of water intensive landscape or turf at time other than as authorized by the water purveyor.
10. It shall be unlawful for any water user to willfully or negligently fail to accept irrigation water after it has been ordered.

D. Limitation on water intensive landscape and turf areas within new nonresidential facilities

The following types of facilities shall limit the water intensive landscape and turf within the landscaped area to the following percentages of the total lot area, and all remaining landscaped area shall consist of plants listed in Section 17.60.80:

1. Churches. Twenty percent (20%) of total lot area.
2. Resorts, including hotels and motels. See Table 17.60.40-A (Permitted Turf Area).
3. Commercial and industrial uses. See Table 17.60.40-A (Permitted Turf Area).
4. Active recreational areas shall not be considered in calculating the percentage of the total lot area and shall not be considered in determining compliance with this Section.
5. No water intensive landscape or turf shall be permitted in any right of way.
6. No water features (ponds, fountains, etc.) shall be allowed without proof that the feature is utilizing water conservation measures such as recirculated water.

E. Limitations on model home and new residential development landscaping

1. Developers are required to provide front and street side yard landscaping to all new developments prior to the issuance of a Certificate of Occupancy. All new model homes and new residential development shall limit water intensive landscape and turf area to the following percentage of the total lot area, and all remaining landscaped area shall consist of plants listed in Section 17.60.80:
 - a. Front yard and street side yards. Twenty percent (20%) of the total front/street side yard area. (Total yard area of single family residences include any hardscape areas such as driveways and walkways.)

b. Rear yard. No limitations.

1. Common areas in residential developments. Ten percent (10%) of the first acre and five percent (5%) of each additional acre up to five (5) acres. Residential developments larger than five (5) acres shall not plant any additional water intensive landscape and turf in common areas.
2. Each model home complex shall include at least one plan with no turf. This no-turf option shall be offered as an option to the home buyer.
3. Water intensive landscape or turf is not limited in rear yards, but is strongly encouraged.
4. No water intensive landscape or turf shall be permitted in any right of way.
5. No water features (ponds, fountains, etc.) shall be allowed without proof that the feature is utilizing water conservation measures such as recirculated water.

Any modification to the landscaping that results in a proven reduction of water use may be used to obtain greater flexibility in the minimum turf area allowed. Methods used to reduce water use may include: satellite sprinkler systems, elimination of surface runoff, and/or the use of reclaimed water.

F. Public education during drought

The City will use intensive public education to assist water users impacted by the drought to understand the City's need for voluntary compliance. In addition to education, the City may use enforcement measures to curb water misuse.

G. Drought management plan implementation

1. The City Council shall promulgate a drought management plan containing regulations setting forth the criteria for implementation and termination of various water use reduction stages.
2. The City Council is authorized to declare a drought, and to implement a drought management plan, in response to events including, but not limited to, the following: reductions in supply from the Mojave Water Agency or Adelanto Public Utilities Authority, or when an insufficient supply appears likely due to water system limitations or structural failure.

3. Such declaration may designate the entire area of the City, or a portion of it if the shortage is not Citywide.
4. The City Council may terminate the drought declaration when he or she determines that the events that triggered the drought no longer exist.

H. Notification and publication of drought management plan

If the City Council determines that the health and safety of the City dictate implementing the drought management plan, notification shall be published in a paper of general circulation, to educate the public about the need for the plan, and give them notice of conservation regulations and requirements of the applicable stage of the plan. A copy of the drought management plan shall also be available for inspection at the City Clerk's office.

I. Enforcement of drought management plan

1. The City Manager or his or her designee shall have authority to take actions to enforce any mandatory elements that are part of drought management plans.
2. A written notice shall be placed on the property when a first violation occurs, and a duplicate mailed to the person who is responsible for the service to the property where the violation took place. The notice shall describe the violation and order that it be abated immediately.
3. For subsequent violations, the City will issue citations and fines according to the provisions of this Chapter.
4. Funds generated by the fines under this Section shall be used to mitigate the impact of the drought.

J. Variances from drought management plan

Variances to drought management plan provisions may be granted at the discretion of the City Manager or his or her designee. Applicants for a variance must apply in writing to the City Manager or his or her designee, and demonstrate special circumstances such as health and safety needs or obligation of contract.

K. Limited exemption to restrictions for users of reclaimed water

To the extent they are exempt from the drought management plan, users of reclaimed or recycled water shall clearly post notices stating that the water being used is not potable and not from the public drinking water supply, and is in conformance to the drought management plan in force at the time.

L. Violations

1. For a first violation of any provision of this chapter, the City shall issue a written notice of first violation and provide the violator with educational materials on water conservation, including a copy of the relevant provisions of this chapter. The City shall give the water user a reasonable period of time to correct the violation. Failure to correct the violation within a reasonable period of time shall constitute a second violation.
2. For a second violation of any provision of this chapter, the City shall issue a written notice of second violation to the water user imposing a fine in the amount not to exceed that outlined in the City of Adelanto Municipal Code and requiring immediate correction of the violation.
3. For a third violation of any provision of this section, the City shall issue a written notice of third violation to the water user imposing a fine in an amount not to exceed that outlined in the City of Adelanto Municipal Code and requiring immediate correction of the violation.
4. For a fourth or subsequent violation of this Section, the City shall impose a fine in an amount not to that outlined in the City of Adelanto Municipal Code. The fourth and each subsequent violation of this chapter shall be deemed a public nuisance, which may be abated pursuant to the procedures provided in the City of Adelanto Municipal Code.
5. Any fine imposed under this Section shall be collected in accordance with the procedures provided in the City of Adelanto Municipal Code. Failure to pay any portion of a water user's account, including any fines imposed pursuant to this Section, shall subject said account to termination of water service in accordance with the provisions of this Section.
6. In addition to the remedies set forth above, the City may seize equipment, line, fountains, and other devices which are operated in violation of this Chapter, until the fine is paid. The City may dispose of these items if the fine is not paid in six (6) months from the date the equipment was confiscated.

M. Right to hearing

Any water user against whom a penalty is levied under this chapter shall have a right to a hearing before the City Manager of the City Manager's designee.

17.60.80 Approved Plant List

CITY OF ADELANTO
WATER CONSERVING PLANTS FOR THE HIGH DESERT

LEGEND: D = Drought Tolerant
M = Moderate Water Use

1. Vines

M	Antigonon leptopus	Queen's Wreath
M	Campsis radicans.....	Trumpet Creeper
M	Gelsemium sempervirens	Carolina Jasmine
M	Hedera helix	English Ivy
M	Jasminum mesnyi	Yellow Jasmine
M	Lonicera japonica 'Halliana'	Hall's Honeysuckle
M/D	Macfadyena unguis-cati	Cat Claw Vine
M/D	Parthenocissus quinquefolia.....	Virginia Creeper
M	Rosa banksiae.....	Lady Bank's Rose
M	Wisteria floribunda.....	Japanese Wisteria

2. Ground

M/D	Acacia redolens	Prostrate Acacia
D	Atriplex semibacata.....	Salt Bush
M/D	Buccharis pilularis 'Twin Peaks'	Coyote Bush
D	Cerastium tomentosum.....	Snow-in-summer
M/D	Convolvulus mauritanicus.....	Ground Morning Glory
D	Dalea greggii.....	Trailing Indigo Bush
M	Euonymus fortunei.....	Winter Creeper
M/D	Festuca ovina glauca	Blue Fescue
M/D	Gazania rigens 'Copper King'	Gazania
M	Liriope muscari	Lily Turf
D	Oenothera berlandieri.....	Mexican Primrose
M	Ophiopogon japonicus	Mondo Grass
M/D	Pyrocantha coccinea 'Low Boy'	Firethorn
M/D	Teucrium chamaedrys	Germander
M/D	Verbena rigida.....	Verbena
M	Vinca major.....	Periwinkle
M	V. minor	Dwarf Periwinkle

3. Trees

D	Acacia constricta	Whitethorn Acacia
D	A. greggii	Catclaw Acacia
D	Ailanthus altissima	Tree of Heaven
M	Albizzia jullibrissin	Silk Tree/Mimosa
M/D	Arbutus unedoq	Strawberry Tree
M/D	Calocedrus decurrens	Insense Cedar
M	Cuarina stricta	Beefwood/She Oak
D	Catalpa speciosa.....	Western Catalpa
M	Chitalpa (Chiolopsis linearis X Catalpa bignonioides)	
M	Cedrus atlantica.....	Atlas Cedar

M	<i>C. deodora</i>	Deodar Cedar
D	<i>Celtis pallida</i>	Desert Hackberry
M/D	<i>C. reticulata</i>	Western Hackberry
D	<i>Cercidium Floridum</i>	Blue Palo Verde
D	<i>C. microphyllum</i>	Little Leaf Palo Verde
M/D	<i>Cercis occidentalis</i>	Western Redbud
M	<i>Chamaerops humilis</i>	Mediterranean Fan Palm
D	<i>Chilopsis linearis</i>	Desert Willow
D	<i>Cupressus arizonica</i>	Arizona Cypress
D	<i>Cotinus coggygria</i>	Smoke Tree
D	<i>Cupressus glabra</i>	Arizona Cypress
D	<i>C. sempervirens</i>	Italian Cypress
D	<i>Elaeagnus angustifolia</i>	Russian Olive
M	<i>Eriobotrya japonica</i>	Loquat
D	<i>Eucalyptus cinerea</i>	Silver Dollar Gum
D	<i>E. gunnii</i>	Cider Gum
D	<i>E. microtheca</i>	Coolibah Tree
D	<i>E. nicholii</i>	Willow Lead Peppermint
D	<i>E. pulverulenta</i>	Silver Mountain Gum
M/D	<i>Fraxinus velutina</i>	Arizona Ash
M/D	<i>F.v. 'Modesto'</i>	Modesto Ash
M/D	<i>F.v. 'Rio Grande'</i>	Fan-Tex Ash
D	<i>Fremontodendron californicum</i>	Flannel Bush
M	<i>Gleditsia triacanthos</i>	Honey Locust
M	<i>G.t. 'Sunburst'</i>	Sunburst
D	<i>Heteromeles arbutifolia</i>	Toyon/California Holly
M/D	<i>Koelreuteria paniculata</i>	Golden Rain Tree
M/D	<i>Lagerstromia indica</i>	Crape Myrtle
M/D	<i>Melia azedarach</i>	Chinaberry
M	<i>Morus alba</i>	Fruitless Mulberry
M/D	<i>Nerium oleander</i>	Oleander
M/D	<i>Olea eruopaea</i>	European Olive
D	<i>Parkinsonia aculeata</i>	Mexican Palo Verde
M	<i>Photinia fraseri</i>	Fraser's Photinia
M/D	<i>Pinus eldarica</i>	Mondel Pine
M/D	<i>P. halepensis</i>	Aleppo Pine
M/D	<i>P. edulis</i>	Pinion Pine
M/D	<i>P. pinea</i>	Italian Stone Pine
M/D	<i>P. roxburghii</i>	Chir Pine
M/D	<i>P. thunbergiana</i>	Japanese Black Pine
D	<i>Pistachio atlantica</i>	Mt. Atlas Pistache
M	<i>Platanus acerfolia</i>	London Plane Tree
M	<i>R. pacemosa</i>	California Sycamore
D	<i>Prosopis species</i>	Mesquite
D	<i>Prunus ilicifolia</i>	Hollyleaf Cherry
M	<i>P. caroliniana</i>	Carolina Cherry
M.	<i>P. cerasifera 'Autopurpurea'</i>	Purple Leaf Plum
M	<i>P. persica</i>	Flowering Peach
M/D	<i>Punica granatum</i>	Pomegranate
M	<i>Pyrus kawakamii</i>	Evergreen Pear

D	<i>Quercus dumosa</i>	Scrub Oak
M	<i>Q. ilex</i>	Holly Oak
M	<i>Q. lobata</i>	Valley Oak
M	<i>Q. palustris</i>	Pin Oak
M	<i>Q. suber</i>	Cork Oak
M/D	<i>Robinia ambigua</i> 'Idahoensis'.....	Idaho Locust
D	<i>R. Pseudoacacia</i>	Black Locust
M	<i>Sambucus mexicana</i>	Mexican Elderberry
M	<i>Sequoiadendron giganteum</i>	Giant Sequoia
D	<i>Sophora secundiflora</i>	Texas Mountain Laurel
M/D	<i>Trachycarpus fortunei</i>	Windmill Palm
M/D	<i>Vauquelinia californica</i>	Rosewood
M/D	<i>Vitex agnus-castus</i>	Chaste Tree
M/D	<i>Washingtonia filifera</i>	California Fan Palm
M/D	<i>W. robusta</i>	Mexian Fan Palm
D	<i>Yucca brevifolia</i>	Joshua Tree
M/D	<i>Zelkova Serrata</i>	Japanese Zelkova
M/D	<i>Ziziphus jujuba</i>	Chinese Date

4. Shrubs

M	<i>Abelia grandiflora</i>	Glossy Abelia
M	<i>A.g. 'Prostrata'</i>	Dwarf abelia
D	<i>Agave americana</i>	Century plant
D	<i>Aloe saponaria</i>	African Aloe
M/D	<i>Arctostaphylos hookerii</i>	Monterey Manzanita
D	<i>Atriplex canescens</i>	Four-wing Salt Bush
D	<i>A. lentiformis</i>	Quail Bush
D	<i>A.l. 'Breweri'</i>	Brewer's Saltbush
D	<i>Daccharis sarthroides</i>	Desert Broom
M	<i>Buxus microphylla</i>	Japanese Boxwood
D	<i>Caesalpinia gilliesii</i>	Desert Bird of paradise
D	<i>Calliandra eriophylla</i>	Fairy Duster
D	<i>Cassia Wislizeni</i>	Shrubby senna
D	<i>Cistus species</i>	Rockrose
M/D	<i>Convolvulus species</i>	Bush Morning Glory
D	<i>Cortaderia selloana</i>	Pampas Grass
M	<i>Cotoneaster horizontalis</i>	Rock Cotoneaster
M	<i>C. microphyllus</i>	Rockspray Cotoneaster
M	<i>C. lacteus</i>	Parney Cotoneaster
D	<i>Dasyliirion wheeleri</i>	Desert Spoon
D	<i>Dendromecon rigida</i>	Bush Poppy
D	<i>Elaeagnus pungens</i>	Silverberry
D	<i>Eriogonum species</i>	Buckwheat
M	<i>Euonymus Species</i>	Evergreen Euonymus
M	<i>Fatsia japonica</i>	Japanese Aralia
D	<i>Ferocactus species</i>	Barrel cactus
D	<i>Fouquieria splendens</i>	Ocotilla
D	<i>Hesperaloe englemanii</i>	Red Yucca
M/D	<i>Hibiscus syriacus</i>	Rose of Sharon
M	<i>Ilex cornuta</i> "Burfordii".....	Buford Holly

M/D	<i>Ilex vomitoria</i>	Yapon Holly
M/D	<i>Juniperus</i> species.....	Juniper
D	<i>Larrea tridentata</i>	Creosote Bush
D	<i>Lavendula</i> species.....	Lavender
D	<i>Leucophyllum frutescens</i>	Texas Ranger
M	<i>Ligustrum texanum</i>	Wax Leaf Privet
D	<i>Lycium</i> species.....	Desert Thorn
M/D	<i>Mahonia aquifolium</i>	Oregon Grape
M	<i>Myrtus communis</i>	True Myrtle
M	<i>M.c. Compacta</i>	Dwarf Myrtle
M	<i>M.c. 'Boetica'</i>	Twisted Myrtle
M/D	<i>Nandina domestica</i>	Heavenly Bamboo
M/D	<i>N.d. 'Nana'</i>	Dwarf Nandina
M/D	<i>Nerium oleander</i>	Oleander
D	<i>Opuntia</i> species.....	Prickley Pear and Cholla Cactus
M	<i>Osmanthus fragrans</i>	Sweet Olive
D	<i>Pennisetum</i> species.....	Fountain Grass
D	<i>Penstemon</i> species.....	Beard Tongue
M	<i>Photinia fraseri</i>	Fraser's Photinia
M	<i>P. serrulata</i>	Chinese Photinia
M	<i>Pittosporum tobira</i>	Mock Orange
M	<i>P.t. 'Wheeler's Dwarf'</i>	Wheeler's Dwarf
D	<i>Teucrium fruticans</i>	Bush Germander
M/D	<i>Puracantha</i> species.....	Firethorn
M	<i>Raphiolepis indica</i>	Indian Hawthorn
D	<i>Romneya coulteri</i>	Matilija Poppy
D	<i>Phus ovata</i>	Sugarbush
M/D	<i>Rosmarinus officinalis</i>	Bush Rosemary
M/D	<i>R. prostratus</i>	Dwarf Rosemary
D	<i>Santolina chamaecyparissus</i>	Lavender Cotton
D	<i>S. virens</i>	Green Santolina
D	<i>Salvia dorrii</i>	Mojave Sage
M/D	<i>Syringa vulgaris</i>	Common Lilac
D	<i>Yucca alofolia</i>	Spanish Bayonet
D	<i>Y. schidigera</i>	Mojave Yucca
D	<i>Y. Whipplei</i>	Our Lord's Candle
D	<i>Zauschneria californica</i>	California Fuchsia

(Ord. 441, January 2006)

Appendix H

Water Conservation Plan, Adelanto Municipal Code, Section 8.20

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CHAPTER 8.20 WATER CONSERVATION PLAN

Sections:

- 8.20.010 Findings
- 8.20.020 Purpose
- 8.20.030 Water Regulations
- 8.20.040 Exceptions
- 8.20.050 Penalties; Fine
- 8.20.060 Violations of Chapter Declared a Nuisance

8.20.010 Findings.

The City Council finds that by reason of the overdraft of the water table from which the City takes its domestic water supply, and because of the current problem existing with respect to the over use of the waste of water in connection with the irrigation of landscape and other outdoor vegetation, lawns and other growth, it is necessary to adopt and enforce a water conservation plan to conserve the water supplies of the City for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection; and it is the intent of the City Council to achieve at least an approximately ten percent (10%) reduction in water use.

8.20.020 Purpose.

The City finds that certain water uses regulated or prohibited in this Chapter are non-essential and if allowed would constitute waste of water.

8.20.030 Water Regulations.

A. No water user within the City shall knowingly make, cause, use, or permit the use of water for residential, commercial, industrial, agricultural or any other purpose in the manner contrary to any provision of this Chapter and the City's Landscape Water Conservation Ordinance.

B. All water users in the City shall abide by the following water conservation measures:

1. The use of water for any purpose shall not result in flooding or unnecessary runoff in gutters, driveways, streets or adjacent lands.
2. Lawns, trees, shrubs, and other landscaping shall not be watered beyond what they need for

growth and to sustain life, and water shall not be permitted to pool or to run off property onto streets or adjacent land.

3. Sidewalks, walkways, driveways, parking areas, patios, porches or verandas or any other like area shall not be washed off with water from hoses or by any other means. The exception to this shall be the washing of flammable or other similar dangerous substances that require direct hose flushing using recognized safety control measures for the benefit of the public health and safety. Notification to the City of such wash down is required.

4. Water, sprinkling, aerial watering or irrigating of any landscaped or vegetated areas, including lawns, trees, shrubs, grass, ground cover, plants, vines, gardens, vegetables, flowers, or other landscaping shall not occur between the hours of 9:00 a.m. and 6:00 p.m. during the months of April through September; provided, however, that these restrictions shall not apply to hand-held hose or drip irrigation systems or to establishment of new lawns, landscaping, or gardens.

5. Non-commercial washing of privately owned vehicles, trailers, motor homes, buses, boats and mobile homes is prohibited except from a bucket, and except that a hose equipped with an automatic shut-off nozzle may be used for a quick rinse.

6. Water shall not be used to clean, fill, operate or maintain levels in decorative fountains unless such water is for replenishment of a recycling system.

7. Water lines, faucets, and other facilities shall be maintained so that they do not leak water. Existing leaks shall be repaired in a timely manner.

8. Restaurants, other food establishments, or other public places where food is served, shall not routinely provide glasses of drinking water to customers unless specifically requested by the customer.

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 be used in an efficient manner. The use of aerial type sprinklers is not recommended but, if used, shall not be operated between the hours of 9:00 a.m. and 6:00 p.m.

10. All new residential, commercial and industrial construction shall be equipped with low-flush toilets and low-flow showers and faucets.

11. Water used for cooling systems must be recycled to the extent possible.

12. Evaporation resistant covers are required for all new swimming pools and hot tubs and are encouraged to be installed for existing pools. The covers required by this Chapter shall, at the time of purchase, installation and all subsequent maintenance, meet or exceed current standards and specifications for swimming pool, spa and hot tub covers adopted by the American Society for Testing and Materials (ASTM).

13. Hotels/motels are required to post a notice in substantially the form provided by the City urging guests to conserve water.

14. All current and future water customers are encouraged to install flow restrictors or pressure reducers and to install toilet tank displacement devices (dams, bottles or bags), and as appliances or fixtures wear out, replace them with water-saving models.

15. Parks, schools, golf courses, cemeteries, school grounds and all public use lands shall not irrigate between the hours of 9:00 a.m. and 6:00 p.m. during the months of April through September inclusive and

are encouraged to use water conservation irrigation equipment.

16. The use of drought tolerant or native plant material is encouraged for exterior landscaping in all new residential construction, and required for new commercial and industrial construction.

17. The use of low precipitation sprinkler heads, bubblers, drip irrigation and timing devices are required in the exterior landscaping in all new residential, commercial and industrial construction.

18. At least fifty percent (50%) of all new model homes shall include as a part of the exterior landscape development low water use, drought-tolerant or native plants.

19. Projects, including Commercial and Planned Unit Developments, which utilize recycled water from sewage treatment or agricultural operations, may receive an exemption from Subsections 15. through 18. of this Section by approval of the City Council.

8.20.040 Exceptions.

The prohibited or restricted uses of water under this Chapter shall not be applicable in those instances when the City Manager or his/her designee finds: (1) the use is essential to avoid an undue hardship for a water user; (2) special circumstances exist for a particular water user, as distinguished from other water users, which justify allowing an exception; (3) the use is essential for required government or public utility services, including but not limited to police protection, fire protection, sanitation, and other critical or emergency services; or (4) the use is essential to maintain the public health and safety.

8.20.050 Penalties; Fine.

A. Any person who violates any provision or who fails to comply with any of the requirement of this Chapter shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished in accordance with the provisions of Chapter 1.20 of this Code.

B. In addition to, and separate from the criminal sanctions set forth above, the first violation of provisions regarding storage, placement and removal of residential solid waste containers and receptacles (Sections 8.01.100.B. and 8.01.310.J.) shall receive a written warning; for subsequent violations at the same address, a twenty dollar (\$20.00) civil fine shall be imposed and collected through the Water and Sanitation bill.

8.20.060 Violations of Chapter Declared a Nuisance.

All violations of any portion of this Chapter are declared to be a public nuisance and may be abated as such in the manner provided by law and pursuant to Chapters 1.20 and 8.25 of this Code.

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CITY OF ADELANTO

11600 Air Expressway ~ P.O.Box 10
Adelanto, CA 92301